

LevelOne User Manual

WAP-6003

150Mbps Wireless Access Point

Ver. 1.0

Safety

FCC WARNING

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1) Reorient or relocate the receiving antenna.
- 2) Increase the separation between the equipment and receiver.
- 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4) Consult the dealer or an experienced radio/TV technician for help.

CE Declaration of conformity

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class B for ITE, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

CE Marking Warning

Hereby, Digital Data Communications, declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

The CE-Declaration of Conformity can be downloaded at: http://www.levelone.eu/support.php



NCC Marking Warning

第十二條

型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用, 並改善至無干擾時方得繼續使用。

前項合法通信,指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

General Public License

This product incorporates open source code into the software and therefore falls under the guidelines governed by the General Public License (GPL) agreement.

Adhering to the GPL requirements, the open source code and open source license for the source code are available for free download at <u>http://global.level1.com</u>.

If you would like a copy of the GPL or other open source code in this software on a physical CD medium, LevelOne (Digital Data Communications) offers to mail this CD to you upon request, for a price of US\$9.99 plus the cost of shipping.

Table of Contents

Chapter 1 Introduction	5
1.1 Packing List	5
1.2 Spec Summary Table	5
1. Package Information	6
1.3 Hardware Configuration	6
1.5 Procedure for Hardware Installation	8
Chapter 3 Making Configuration	9
3.1 Login to Configure from Wizard	9
3.2 System Status	12
3.3 Advanced	13
Appendix A FAQ and Troubleshooting	
What can I do when I have some trouble at the first time?	
How do I connect router by using wireless?	40

IP Address	192.168.1.1
Password	admin
Wireless Mode	Enable
Wireless SSID	LevelOne
Wireless Security	None

Chapter 1 Introduction

Congratulations on your purchase of this outstanding Wireless Broadband Router. This product is specifically designed for Small Office and Home Office needs. It is easy to configure and operate even for non-technical users. Instructions for installing and configuring this product can be found in this manual. Before you install and use this product, please read this manual carefully for fully exploiting the functions of this product.

1.1 Packing List

WAP-6003 Power Adapter Antenna (x1) Network Cable Quick Installation Guide CD User Manual / Utility / QIG

1.2 Spec Summary Table

Device Interface			
Ethernet LAN	5 x RJ-45 port, 10/100Mbps, auto-MDI/MDIX		
Antenna	2 dBi fixed antenna		
WPS Button	For WPS connection and Enable "Wireless Function"		
/Wireless On	For WPS connection and Enable Wireless Function		
Reset Button	Reset to Factory Default setting		
LED Indication	Status / LAN1 ~ LAN5/ WiFi		
Power Jack	DC Power Jack, powered via external DC 5V/1A		
POwer Jack	switching power adapter		
Wireless LAN (WiFi)			
Standard	IEEE 802.11b/g/n-lite compliance		
SSID	SSID broadcast or in stealth mode		
Channel	Auto-selection, manually		
Security	WEP, WPA-PSK, WPA2-PSK		
WPS	WPS (Wi-Fi Protected Setup)		
WMM	WMM (Wi-Fi Multimedia)		
Functionality			

Routing Protocol	Static route, dynamic route (RIP v1/v2)			
Management	SNMP, syslog,			
Administration	Web-based UI, remote login, backup/restore setting			
Environment & Cert	ification			
Package	DO 5)//4 A groups a degiter Outlet Installation Outlet			
Information	DC 5V/1A power adapter, Quick Installation Guide			
Package	Device dimension (mm) 195 x 110 x 22 mm			
Information	Device dimension (mm) 185 x 119 x 32 mm			
Operation Temp.	Temp.: 0~40oC, Humidity 10%~90% non-condensing			
Storage Temp.	Temp.: -10~70oC, Humidity: 0~95% non-condensing			
EMI Certification	CE/FCC compliance			
RoHS	RoHS compliance			

*Specifications are subject to change without prior notice.

1.3 Hardware Configuration

Figure 2-1 Front Panel





1.4 LED indicators

	LED status	Description
Status	Green in flash	Device status is working.
LAN LED	Green	RJ45 cable is plugged
	Green in flash	Data access
	Green	WLAN is on
WiFi LED	Green in flash	Data access
	Green in fast flash	Device is in WPS PBC mode
	Green in dark	Wi-Fi Radio is disabled

1.5 Procedure for Hardware Installation

Step 1. Attach the antenna.

1.1. Remove the antenna from its plastic wrapper.

1.2. Screw the antenna in a clockwise direction to the back panel of the unit.

 1.3. Once secured, position the antenna upward at its connecting joint. This will ensure optimal reception.





1.Turn off the Power Switch first.

Step 2 Insert the Ethernet cable into LAN Port:

Insert the Ethernet patch cable into LAN port on the back panel of Router, and an available Ethernet port on the network adapter in the computer you will use to configure the unit.

Step 4. Power on Router:

4.1. Connect the power adapter to the receptor on the back panel of your Router.



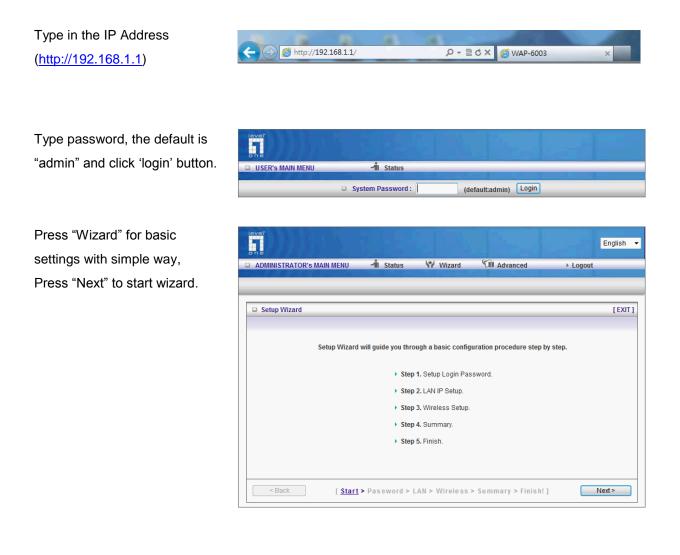
Step 5. Complete the setup.

5.1. When complete, the Status LED will flash.

Chapter 3 Making Configuration

This product provides Web based configuration scheme, that is, configuring by your Web browser, such as Mozilla Firefox or or Internet Explorer. This approach can be adopted in any MS Windows, Macintosh or UNIX based platforms.

3.1 Login to Configure from Wizard



Step 1:

Set up your system password.

lever one					English 🝷
ADMINISTRATOR'S MAIN MENU	📲 Status	Wizard	Advanced	▶ Logout	
Setup Wizard - Setup Login Pass	word				[EXIT]
	 ▶ Old Password ▶ New Password ▶ Reconfirm 	1			
<pre>Start</pre>	> <u>Password</u> > L/	AN > Wireles	s > Summary > Fin	ish!]	Next >

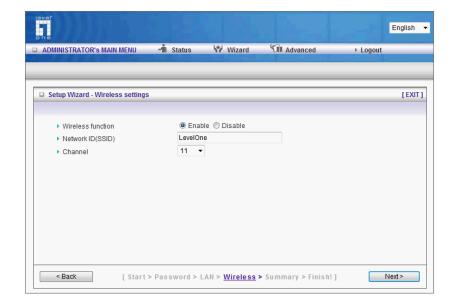
Step 2:

Setup the LAN IP

leve? on c					English 🔻
ADMINISTRATOR'S MAIN MENU	📲 Status	Wizard	Advanced	▶ Logout	
Setup Wizard - LAN Settings - LA	N IP Address				[EXIT]
► LAN IP Address	192.168	3.1.1			
<back [start<="" td=""><td>> Password ></td><td>LAN > Wireless</td><td>> Summary > Finis</td><td>h!]</td><td>Next ></td></back>	> Password >	LAN > Wireless	> Summary > Finis	h!]	Next >



Set up your Wireless.



Set up your Authentication and Encryption.

Setup Wizard - Wireless Secur	ity	[EXI
Security	WEP 🗸	
► WEP	64 bits 128 bits	
Key 1	۲	
Key 2		
Key 3		
Key 4		
	Please condifure 26 for 128bits or 10 for 64 A, BF) digits.	4 bits hexadecimal (0, 1, 28, 9,
	A, Dr) uigits.	

Step 4:

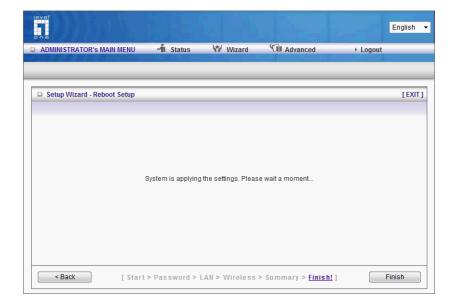
Then click Apply Setting.

And then the device will reboot.

ever ane				English
ADMINISTRATOR'S MA	IN MENU 📲 Status	😾 Wizard	Advanced	▶ Logout
Setup Wizard - Summer Summer Setup Wizard - Setup Wizard - Summer Setup Wizard - Setup Wiz	nary			[EXI
	Please confin	m the inform	ation below.	
	[LAN Setting]			
	LAN IP Address	192.168.	1.1	
	[Wireless Setting]			
	Wireless	Enable		
	SSID	LevelOne	•	
	Channel	11		
	Security		P Enabled	
	🗹 Do you want	to proceed the ne	twork testing?	
				C
< Back	[Start > Password > LA	AN > Wireless	> <u>Summary</u> > Finish!	Apply Settings

Step 5:

Click Finish to complete it.



3.2 System Status

				Englis	
ADMINISTRATOR'S MAIN MENU	- Status	Wizard	Advanced	▶ Logout	
LAN Status					
Item		LAN Status			
LAN IP		192.168.1.1			
Subnet Mask		255.255.255.0			
MAC Address		00-50-18-64-4A-3F			
Wireless Status					
Item		WLAN Status		Sidenote	
Wireless mode		Enable			
SSID		LevelOne			
Channel		11			
Security		WEP		64-bit WEP	
MAC Address	00-50-18-64-4A-3F			Edit	
View Log Clients List Refresh Device Time: Mon Jun 01 03:06:33 2009					

This option provides the function for observing this product's working status:

3.3 Advanced

3.3.1 Basic Setting

Please Select "Advanced Setup" to Setup

level one				h	English 👻
ADMINISTRATOR'S MAIN ME	ENU 📲 Status	Wizard	M Advanced	► Logout	
BASIC S	ETTING 🤣 SECURITY S	ETTING 😒	ADVANCED SETTING	ботоогвох	
 Primary Setup DHCP Server Wireless Change Password 	configurations. • Wireless	ide Host IP, Sub allow you to cor	net Mask, Gateway, DI nfigure the wireless co word.		

1. LAN IP Address: the local IP address of this device. The computers on your network must use the LAN IP address of your product as their Default Gateway. You can change it if necessary.

ADMINISTRATOR's	MAIN MENU	📲 Status 😾 W	Vizard 🕅 Advanced	▶ Logout	
	BASIC SETTING		ADVANCED SETTING	🕤 тоогвох	
Primary Setup	Primary Set	up			[HELP]
DHCP Server		Item		Setting	
• Wireless	LAN IP Addre	ss	192.168.1.1		
Change Password	Subnet Mask		255.255.255.0 🝷		
			Save Undo		

3.3.1.2 DHCP Server

ADMINISTRATOR's	s MAIN MENU 🚽 Status	₩ Wizard 🕅 Advanced → Logout
	BASIC SETTING 🛞 SECURITY SET	TING 🐵 ADVANCED SETTING 🏠 TOOLBOX
Primary Setup	DHCP Server	[HELP]
DHCP Server	Item	Setting
Wireless	▶ DHCP Server	Obsable C Enable
Change Password	▶ Lease Time	0 Minutes
	▶ IP Pool Starting Address	100
	▶ IP Pool Ending Address	199
	▶ Domain Name	
	▶ Primary DNS	0.0.0.0
	▹ Secondary DNS	0.0.0.0
	Primary WINS	0.0.0.0
	 Secondary WINS 	0.0.0.0
	▶ Gateway	0.0.0.0 (optional)
	Save Und	Clients List Fixed Mapping

Press "More>>"

- 1. **DHCP Server**: Choose "Disable" or "Enable."
- 2. **Lease time**: This is the length of time that the client may use the IP address it has been

Assigned by dhcp server.

3. IP pool starting Address/ IP pool starting Address: Whenever there is a request, the DHCP

server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

- 4. **Domain Name**: Optional, this information will be passed to the client.
- 5. **Primary DNS/Secondary DNS**: This feature allows you to assign DNS Servers
- 6. **Primary WINS/Secondary WINS**: This feature allows you to assign WINS Servers
- 7. **Gateway**: The Gateway Address would be the IP address of an alternate Gateway.

This function enables you to assign another gateway to your PC, when DHCP server offers an IP to your PC.

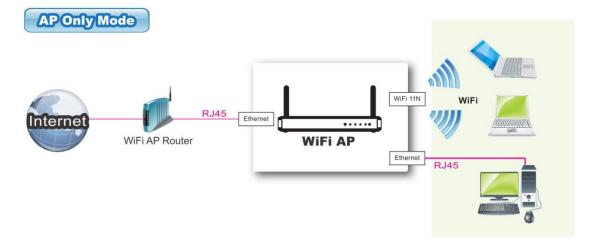
8. **DHCP Client List**:

ADMINISTRATOR'	s MAIN MENU	📲 Status	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Vizard 🕤	Advanced	► Logou	ıt	
1	BASIC SETTING	🛞 SECURI	TY SETTING	😒 ADVAN	CED SETTING	🌀 тооlbox		
Primary Setup	DHCP Client	s List					[HELP]	
DHCP Server	IP Addre	SS	Host	lame	MAG	C Address	Select	
• Wireless	Wake up Delete Back Refresh							
Change Password								

3.3.1.3 Wireless Setting

AP only Mode:

When acting as an access point, this device connects all the stations to a wired network and See the sample application below.



Wireless Setting	[HELP]
Item	Setting
Wireless Module	◉ Enable ◎ Disable
Wireless Operation Mode	AP Only Mode -
AP Number	AP 1 V Enable
Network ID(SSID)	LevelOne
Wireless Mode	b/g/n Mixed mode 🔻
 SSID Broadcast 	◉ Enable ◎ Disable
► WMM	💿 Enable 🖲 Disable
Channel	11 -
▶ Bandwidth	Auto 👻
▶ Security	None -
Save	WPS Enter Wireless Client List

Network ID (SSID): Network ID is used for identifying the Wireless LAN (WLAN). Client stations can roam freely over this product and other Access Points that have the same Network ID. (The factory setting is "**default**")

SSID Broadcast: The router will Broadcast beacons that have some information, including ssid so that

The wireless clients can know how many ap devices by scanning function in the network. Therefore, This function is disabled, the wireless clients can not find the device from beacons.

Channel: The radio channel number. The permissible channels depend on the Regulatory Domain.

WPS (WiFi Protection Setup)

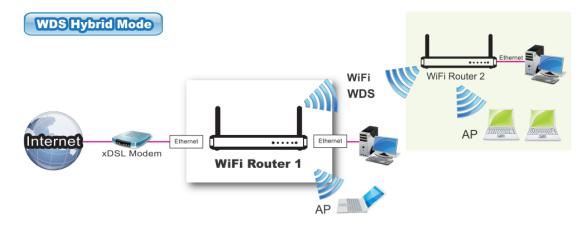
WPS is WiFi Protection Setup which is similar to WCN-NET and offers safe and easy way in Wireless Connection.

ADMINISTRATOR'	s MAIN MENU	- Status	19 W	/izard	Advanced	► Logo	ut	
	BASIC SETTING	I SECURIT	TY SETTING	0	ADVANCED SETTING	🌀 тооlbox		
Primary Setup	Wi-Fi Protect	ted Setup						
DHCP Server	Ite	m			Settin	g		
Wireless	▶ WPS		Enable	e 🔘 Dis	able			
Change Password	▶ Setup		 Current AP PIN Configure Wireless Station 					
	Current PIN o	f the device	13938789 Generate New PIN					
	WPS state		Idle					
	Lock Wireless Security			✓ Enable				
	• WPS status		Configure	d Re	elease			
	Save Trigger Back							

Security: Select the data privacy algorithm you want. Enabling the security can protect your data while it is transferred from one station to another.

WDS Hybrid Mode:

While acting as Bridges, Wireless Router 1 and Wireless Router 2 can communicate with each other through wireless interface (with WDS). Thus All Stations can communicate each other and are able to access Internet if Wireless Router 1 has the Internet connection



UVDS Setting [HELP]						
Item	Setting					
• Wireless Radio	Enable O Disable					
Wireless Operation Mode	WDS Hybrid Mode 🔻					
▶ Lazy Mode						
Point to Point						
Network ID(SSID)	LevelOne					
 SSID Broadcast 	● Enable					
Channel	11 •					
▶ Security	None -					
Remote AP MAC MAC 1						
MAC 2						
MAC 3						
MAC 4						
Scaned AP's MAC Select one 👻 Copy to Remote AP MAC 💌						
S SID	Channel MAC Address					
	Save Undo Scan AP					

Wireless Off Schedule: Before turning Off Wireless Radio, the device will detect if Wireless station is online, then depend as Schedule " 01:00~08:30" to disable WiFi service.

Network ID (SSID): Network ID is used for identifying the Wireless LAN (WLAN). Client stations can roam freely over this product and other Access Points that have the same Network ID. (The factory setting is "**default**")

SSID Broadcast: The router will Broadcast beacons that have some information, including ssid so that

The wireless clients can know how many ap devices by scanning function in the network. Therefore, This function is disabled, the wireless clients can not find the device from beacons.

Channel: The radio channel number. The permissible channels depend on the Regulatory Domain.

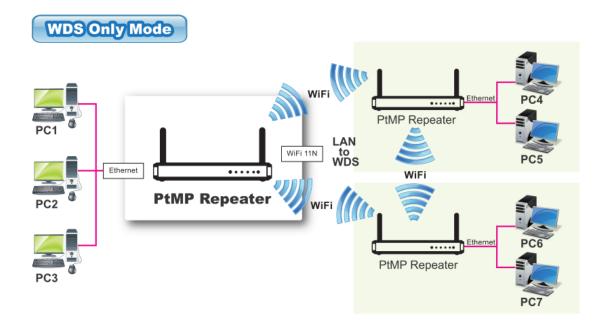
Security: Select the data privacy algorithm you want. Enabling the security can protect your

data while it is transferred from one station to another.

Remote AP MAC : Choose "Manual" or scan one AP to copy to item1~4.

WDS(Wireless Distribution System)

The WDS (Wireless Distributed System) function let this access point acts as a wireless LAN access point and repeater at the same time. Users can use this feature to build up a large wireless network in a large space like airports, hotels and schools ...etc.



WDS Setting	WDS Setting [HELP]						
Item		Setting					
 Wireless Radio 	🖲 Enable 🔘 Disab	le					
 Wireless Operation Mode 	WDS Only Mode	~					
Point to Point							
Network ID(SSID)	LevelOne						
▶ Channel	11 -						
 Security 	None -						
Remote AP MAC MAC 1]					
MAC 2	2						
MAC 3							
MAC 4							
Scaned AP's MAC Select one Copy to Remote AP MAC							
SSID Channel MAC Address							
Save Undo Scan AP							

Network ID (SSID): Network ID is used for identifying the Wireless LAN (WLAN). Client stations can roam freely over this product and other Access Points that have the same Network ID. (The factory setting is "**default**")

SSID Broadcast: The router will Broadcast beacons that have some information, including ssid so that

The wireless clients can know how many ap devices by scanning function in the network. Therefore, This function is disabled, the wireless clients can not find the device from beacons.

Channel: The radio channel number. The permissible channels depend on the Regulatory Domain.

Security: Select the data privacy algorithm you want. Enabling the security can protect your data while it is transferred from one station to another.

Remote AP MAC : Choose "Manual" or scan one AP to copy to item1~4.

Universal Repeater Mode

Universal Repeater is a technology used to extend wireless coverage.

It provides the function to act as Adapter (client) and AP at the same time and can use this function to connect to a Root AP and use AP(SSID name is same with Root AP) function to service all wireless stations within its coverage. All the stations within the coverage of this access point can be bridged to the Root AP.

Universa	al Repeater Mode		
Internet	xDSL Modem	WIFI AP Router	

Universal Repeater Mode							
Item	Setting						
 Wireless Radio 	🖲 Enable 🔘 Disable						
Wireless Operation Mode	Universal Reapeater 👻						
Network ID(SSID)							
▶ Security	None -						
Select SSID Ch	SSID Channel Signal Strength Security MAC Address						
Save Undo Scan AP							

SSID (Wireless Network Name): Select "AP" or entry SSID manually to connect.

Security "There are several security types to use:

WEP :

When you enable the 128 or 64 bit WEP key security, please select one WEP key to be used and input 26 or 10 hexadecimal (0, 1, 2...8, 9, A, B...F) digits.

WPA-PSK

1. Select Encryption and Pre-share Key Mode

If you select HEX, you have to fill in 64 hexadecimal (0, 1, 2...8, 9, A, B...F) digits

If ASCII, the length of pre-share key is from 8 to 63.

2. Fill in the key, Ex 12345678

Wireless Setting	[HELP]
Item	Setting
Wireless Radio	⊙ On ◯ Off
Wireless Off Schedule#	(00)Always 🚽 🔿 Enable 💿 Disable
Network ID(SSID)	LevelOne
▶ Wireless Mode	Mixed mode ○ 11g only ○ 11b only ○ 11n only
SSID Broadcast	⊙Enable ○Disable
▶ Channel	6 💌
▶ WDS	Enter
▶ WPS	Enter
▶ Security	WPA-PSK
Encryption	⊙ TKIP ○ AES
Preshare Key Mode	ASCII 🐱
Preshare Key	
Sav	e Undo Wireless Client List

WPA2-PSK(AES)

1. Select Pre-share Key Mode

If you select HEX, you have to fill in 64 hexadecimal (0, 1, 2...8, 9, A, B...F) digits

If ASCII, the length of Pre-share key is from 8 to 63.

2. Fill in the key, Ex 12345678

WPA-PSK /WPA2-PSK

The router will detect automatically which Security type the client

uses to encrypt.

1. Select Pre-share Key Mode

If you select HEX, you have to fill in 64 hexadecimal (0, 1, 2...8, 9, A, B...F) digits

If ASCII, the length of Pre-share key is from 8 to 63.

2. Fill in the key, Ex 12345678

Wireless Setting						
ltem	Setting					
 Wireless Radio 	⊙ On Off					
Wireless Off Schedule#	(00)Always 🚽 🔿 Enable 💿 Disable					
Network ID(SSID)	LevelOne					
▶ Wireless Mode	Mixed mode ○11g only ○11b only ○11n only					
 SSID Broadcast 	⊙Enable ○Disable					
Channel	6 💌					
▶ WDS	Enter					
▶ WPS	Enter					
▶ Security	WPA-PSK/WPA2-PSK 💌					
Encryption	TKIP + AES					
Preshare Key Mode	ASCII 🐱					
Preshare Key						
Save Undo Wireless Client List						

Wireless Client List

Network ID (SSID): Network ID is used for identifying the Wireless LAN (WLAN). Client stations can roam freely over this product and other Access Points that have the same Network ID. (The factory setting is "**default**")

SSID Broadcast: The router will Broadcast beacons that have some information, including ssid so that

The wireless clients can know how many ap devices by scanning function in the network. Therefore,

This function is disabled, the wireless clients can not find the device from beacons.

Channel: The radio channel number. The permissible channels depend on the Regulatory Domain.

WPS (WiFi Protection Setup)

WPS is WiFi Protection Setup which is similar to WCN-NET and offers safe and

easy way in Wireless Connection.

ADMINISTRATOR'S	s MAIN MENU 🦰	l Status	₩ w	/izard	M Advanced	► Logo	out	
	BASIC SETTING	SECURIT	Y SETTING	0	ADVANCED SETTING	🕤 тоогвох		
Primary Setup	Wi-Fi Protected	Setup		_				
DHCP Server	Item				Settin	g		
Wireless	> WPS				isable			
Change Password	▶ Setup		Current AP PIN Configure Wireless Station					
	e device	13938789 Generate New PIN						
	► WPS state		ldle					
	Lock Wireless Secu	rity	🗷 Enable					
	▶ WPS status		Configure	d R	Release			
			S	ave	Trigger Back			

WDS(Wireless Distribution System)

WDS operation as defined by the IEEE802.11 standard has been made available. Using WDS it is possible to wirelessly connect Access Points, and in doing so extend a wired infrastructure to locations where cabling is not possible or inefficient to implement.

ADMINISTRATOR's	MAIN MENU	📲 Status	1 W W	/izard 🕅	Advanced	► Logout
	BASIC SETTING	I SECURIT	TY SETTING	ADVAN	ICED SETTING	Ф ТООLВОХ
Primary Setup	UWDS Setting	I				[HELP]
DHCP Server	Iter	n			Settin	g
Wireless	AP Mode:		AP Only	~		
Change Password	► Remote AP N	MAC MAC 1				
		MAC 2				
It is a system		MAC 3				
that enables the interconnection		MAC 4				
of access points wirelessly.	MAC Select	one		v C	copy to Remote AP MAC 🕂 💌	
	SSI	D	Ch	nannel		MAC Address
	Jay_189A	S_test		1		00-50-18-00-0F-0B
	Jay_189A	S1_test		1		00-50-18-00-0F-0C
	Jay_189A	S2_test		1		00-50-18-00-0F-0D
	aaron2			1		00-50-18-00-0F-FE
	AD Storago			4	00_50_18_91_01_7F	

Security: Select the data privacy algorithm you want. Enabling the security can protect your

data while it is transferred from one station to another.

There are several security types to use:

WEP :

When you enable the 128 or 64 bit WEP key security, please select one WEP key to be used and input 26 or 10 hexadecimal (0, 1, 2...8, 9, A, B...F) digits.

WPA-PSK

1. Select Encryption and Pre-share Key Mode

If you select HEX, you have to fill in 64 hexadecimal (0, 1, 2...8, 9, A, B...F) digits

If ASCII, the length of pre-share key is from 8 to 63.

2. Fill in the key, Ex 12345678

	s MAIN MENU 🚽 Status	₩ Wizard 🕅 Advanced → Logout					
BASIC SETTING 🤣 SECURITY SETTING 🚱 ADVANCED SETTING 🏠 TOOLBOX							
Primary Setup	Wireless Setting	[HELP]					
DHCP Server	ltem	Setting					
	▶ Wireless	⊙ Enable					
Wireless Change Password	Network ID(SSID)	LevelOne					
	▶ Wireless Mode	Mixed mode ○ 11g only ○ 11b only					
	 SSID Broadcast 	● Enable ○ Disable					
	▶ Channel	Auto 💌					
	▶ WDS	Enter					
	▶ WPS	Enter					
	Security	WPA-PSK					
	Encryption	● TKIP ○ AES					
	Preshare Key Mode	ASCII 🗸					
	▶ Preshare Key						
	Sav	e Undo Wireless Client List					

WPA2-PSK(AES)

- 1. Select Pre-share Key Mode
- If you select HEX, you have to fill in 64 hexadecimal (0, 1, 2...8, 9, A, B...F) digits
- If ASCII, the length of Pre-share key is from 8 to 63.
- 2. Fill in the key, Ex 12345678

WPA-PSK /WPA2-PSK

The router will detect automatically which Security type the client

uses to encrypt.

1. Select Pre-share Key Mode

If you select HEX, you have to fill in 64 hexadecimal (0, 1, 2...8, 9, A, B...F) digits

If ASCII, the length of Pre-share key is from 8 to 63.

2. Fill in the key, Ex 12345678

ADMINISTRATOR'S	MAIN MENU 🚽 Status	₩ Wizard 🕅 Advanced → Logout	
	BASIC SETTING 🤣 SECURITY SET	ITING 🔄 ADVANCED SETTING 🏠 TOOLBOX	
Primary Setup	Wireless Setting		[HELP]
DHCP Server	ltem	Setting	
Wireless	▶ Wireless	⊙ Enable ○ Disable	
Change Password	Network ID(SSID)	LevelOne	
• Change Password	▶ Wireless Mode	Mixed mode ○ 11g only ○ 11b only	
	 SSID Broadcast 	⊙ Enable ○ Disable	
	▶ Channel	Auto 👻	
	• WDS	Enter	
	▶ WPS	Enter	
	▶ Security	WPA-PSK/WPA2-PSK	
	Encryption	TKIP + AES	
	Preshare Key Mode	ASCII	
	▶ Preshare Key		
	Sav	e Undo Wireless Client List	

Wireless Client List

ADMINISTRATOR'S MAIN MENU		📲 Status	1 W	/izard	Advanced	► Logo	ut
	BASIC SETTING		SETTING	(2) A	ADVANCED SETTING	TOOLBOX	
Primary Setup							
DHCP Server		Connected Time	9			MAC Address	
	Tue Jan 26 09:3	9:58 2010			00-1C-BF-00-C6-3	37	
 Wireless 		Back Refresh					
 Change Password 		Daux Reliesh					

Universal Repeater Mode

If set to Adapter Mode (Client mode), this device can work like a wireless station when it's connected to a computer so that the computer can send packets from wired end to wireless interface.



ltem			Setting			
Wireless Radio		ΘE	⊙ Enable			
 Wireless Operation Mode 			nt Mode 🛛 💌			
 SSID (Wireless Network Name) 			Manual			
▶ Security		None	e 🗸			
Select	SSID	Channel	Signal Strength	Security	MAC Address	
0	ssid243	1	100	None	90-94-E4-E5-9C-72	
0	ssid244	1	100	None	90-94-E4-E5-9C-73	

3.3.1.4 Change Password

ADMINISTRATOR'S	s MAIN MENU 🚽 Status	Wizard 🕅 Advanced	▶ Logout				
	BASIC SETTING	ETTING 🐵 ADVANCED SETTING	💮 тооlвох				
Primary Setup Change Password							
DHCP Server	Item	Setting	g				
Wireless	Old Password	••••					
Change Password	▶ New Password						
	▶ Reconfirm						
		Save Undo					

You can change Password here. We **strongly** recommend you to change the system password for security reason.

3.3.3 Security Settings

level one				English 🔻
ADMINISTRATOR'S MAIN MEN	U 📲 Status 😾 W	izard 🕅 Advanced	► Logout	_
BASIC SET	TING 🤣 SECURITY SETTING	ADVANCED SETTING	TOOLBOX	
MAC Access Control Miscellaneous	the device. • Miscellaneous • Administrator Time-out: T	ninistrator MAC Control" for sp 'he amount of time of inactivity dministrator session. Set this	v before the device will	

3.3.3.4 MAC control

Administrator MAC Control

Regardless the MAC access configuration of administrator, specific MAC can access the device.

Administrator M.	Administrator MAC Control [HE					
DHCP clie	DHCP clients 00-1D-72-12-A8-7F : 192.168.12.149 (amitnb) 💙 Copy to ID 1 💌					
ID	MAC Address	Enable				
1	00-1D-72-12-A8-7F					
2						
3						
	Save Undo					
	No change!					
Internet Access	Control					

a internet access control						
Item	Setting					
Access Control Type MAC Access Control						
Next >>						

ADMINISTRATOR'S	s MAIN MENU 🚽 Status	₩ Wizard Mathematical Department				
	BASIC SETTING 🤣 SECURITY SE	TTING 🐵 ADVANCED SETTING 🍿 TOOLBOX				
Primary Setup	Change Password					
• DHCP Server	ltem	Setting				
• Wireless	▶ Old Password					
Change Password	▶ New Password					
	▶ Reconfirm					
	Save Undo					

MAC Address Control allows you to assign different access right for different users and to assign a specific IP address to a certain MAC address.

- MAC Address Control Check "Enable" to enable the "MAC Address Control". All of the settings in this page will take effect only when "Enable" is checked.
- **Connection control** Check "Connection control" to enable the controlling of which wired and wireless clients can connect to this device. If a client is denied to connect to this device, it means the client can't access to the Internet either. Choose "allow" or "deny" to allow or deny the clients, whose MAC addresses are not in the "Control table" (please see below), to connect to this device.

Association control Check "Association control" to enable the

controlling of which wireless client can associate to the wireless LAN. If a client is denied to associate to the wireless LAN, it means the client can't send or receive any data via this device. Choose "allow" or "deny" to allow or deny the clients, whose MAC addresses are not in the "Control table", to associate to the wireless LAN.

Control table

ID	MAC Address	IP Address	С	А
1		192.168.12.		
2		192.168.12.		
3		192.168.12.		
4		192.168.12.		

"Control table" is the table at the bottom of the "MAC Address Control" page. Each row of this table indicates the MAC address and the expected IP address mapping of a client. There are four columns in this table:

MAC Address	MAC address indicates a specific client.			
IP Address	Expected IP address of the corresponding			
	client. Keep it empty if you don't care its IP			
	address.			
С	When "Connection control" is checked,			
	check "C" will allow the corresponding			
	client to connect to this device.			
Α	When "Association control" is checked,			
	check "A" will allow the corresponding			
	client to associate to the wireless LAN.			

In this page, we provide the following Combobox and button to help you to input the MAC address.

DHCP clients select one	-	Copy to	ID	-	ĺ
-------------------------	---	---------	----	---	---

You can select a specific client in the "DHCP clients" Combobox, and then click on the "Copy to" button to copy the MAC address of the client you select to the ID selected in the "ID" Combobox.

Previous page and Next Page To make this setup page simple and clear, we have divided the "Control table" into several pages. You can use these buttons to navigate to different pages.

Example:

ADMINISTRATOR'S I	MAIN MENU	📲 Status	💔 Wizard	Advanced	► Logou	t	
	BASIC SETT	ING 🤣 SECURIT	Y SETTING 🛛 🛞	ADVANCED SETTING	🕤 тоогвох		
MAC Access Control Miscellaneous	► MAC A	ddress Control Item ddress Control	Enable Wireless and wire	Setti ed clients with C check	-		HELP]
	Connection control		allow ▼ unspecified MAC addresses to connect. Wireless clients with A checked can associate to the wireless LAN; and deny ▼ unspecified MAC addresses to associate. Note: Association control has no effect on wired clients. DHCP clients Select one ▼ Copy to ID ▼				and
	ID	MAC Addre	\$\$	IP Add	iress	с	А
	1			192.168.1			
	2			192.168.1			
	3			192.168.1			
	4			192.168.1			
		[<< Previous	Next >> Save U	ndo		

In this scenario, there are three clients listed in the Control Table. Clients 1 and 2 are wireless, and client 3 is wired.

- 1. The "MAC Address Control" function is enabled.
- 2."Connection control" is enabled, and all of the wired and wireless clients not listed in the "Control table" are "allowed" to connect to this device.
- 3."Association control" is enabled, and all of the wireless clients not listed in the "Control table" are "denied" to associate to the wireless LAN.
- 4.Clients 1 and 3 have fixed IP addresses either from the DHCP server of this device or manually assigned:

ID 1 - "00-12-34-56-78-90" --> 192.168.12.100

ID 3 - "00-98-76-54-32-10" --> 192.168.12.101

Client 2 will obtain its IP address from the IP Address pool specified in the "DHCP Server" page or

can use a manually assigned static IP address.

If, for example, client 3 tries to use an IP address different from the address listed in the Control

table (192.168.12.101), it will be denied to connect to this device.

- 5.Clients 2 and 3 and other wired clients with a MAC address unspecified in the Control table are all allowed to connect to this device. But client 1 is denied to connect to this device.
- 6.Clients 1 and 2 are allowed to associate to the wireless LAN, but a wireless client with a MAC address not specified in the Control table is denied to associate to the wireless LAN. Client 3 is a wired client and so is not affected by Association control.

3.3.3.5 Miscellaneous Items

ADMINISTRATOR'S I	MAIN MENU	📲 Status	1 W	/izard (Advanced	► Logoi	ut
	BASIC SETTING		SETTING		NCED SETTING	б тоогвох	-
MAC Access Control	Miscellane	ous Items					[HELP]
 Miscellaneous 		Item				Setting	
	► Administrator Time-out			600 se	conds (0 to disable)		
				Save	Jndo		

Administrator Time-out

The time of no activity to logout automatically. Set it to zero to disable this feature.

3.3.4 Advanced Settings

level o n e	English
ADMINISTRATOR'S MAIN	MENU –∰ Status 😾 Wizard 🕅 Advanced → Logout
BASIC	SETTING 🤣 SECURITY SETTING 🔄 ADVANCED SETTING 🎲 TOOLBOX
System Time	Advanced Setting
System Log SNMP	System Time Allow you to set device time manually or consult network time.
	 System Log Send system log to a dedicated host to specific recipients.
	 SNMP Gives a user the capability to remotely manage a computer network by polling and setting terminal values and monitoring network events.

3.3.4.1 System Time

ADMINISTRATOR'	s MAIN MENU 🦂 Sta	ntus 💔 W	Vizard	Advanced	▶ Logout	
) BASIC SETTING 🤣 SI	CURITY SETTING	🙁 AD	VANCED SETTING	🗑 ТООLВОХ	
System Time System Log SNMP	 BASIC SETTING System Time System Time System Time Set Date and Time PC Date and Time Set Date and Time Date Time 	2009年6月1日」 using PC's Date 2013年1月14日 manually Year: 2009 マ	上午 12:16:3 and Time 下午 07:25 」	Setting	Day: 01 -	[HELP]

Get Date and Time

Set Date and Time manually

Selected if you want to Set Date and Time manually.

Set Date and Time manually

Selected if you want to Set Date and Time manually.

3.3.4.2 System Log

	's MAIN MENU	- Status	😾 Wiz	zard	M Advanc	ed ▶ Logo	out
	BASIC SETTING	I SECURITY SE	TTING	0	ADVANCED SETTIN	IG 👘 TOOLBOX	
System Time System Log SNMP	System Log IP Address of System Server		192.16 Sys Del Atta Dro Not	58.1. stem Ad bug Inf acks opped F	Setting		[HELP] Enable

This page support two methods to export system logs to specific destination by means of syslog(UDP) and SMTP(TCP). The items you have to setup including:

IP Address for Syslog

Host IP of destination where syslogs will be sent to.

Check **Enable** to enable this function.

E-mail Alert Enable

Check if you want to enable Email alert (send syslog via email).

SMTP Server IP and Port

Input the SMTP server IP and port, which are concated with ':'. If you do not specify port number, the default value is 25.

For example, "mail.your_url.com" or "192.168.1.100:26".

Send E-mail alert to

The recipients who will receive these logs. You can assign more than 1 recipient, using ';' or ',' to separate these email addresses.

3.3.4.4 SNMP

	's MAIN MENU	-i Status	₩ w	lizard	M Advanced	l → Logout	
1	BASIC SETTING	🛞 securit	TY SETTING	0	ADVANCED SETTING	бо тоогвох	
System Time	SNMP Setting	9					[HELP]
System Log	Item	ı			Sett	ing	
• SNMP	▶ Enable SNMP		🔽 Local				
	▶ Get Communit	ty	public				
	Set Communit	y	private				
	▶ IP 1						
	► IP 2						
	► IP 3						
	▶ IP 4						
	SNMP Version		© V1 🔍 V	'2c			
				Save	Undo		

In brief, SNMP, the Simple Network Management Protocol, is a protocol designed to give a user the capability to remotely manage a computer network by polling and setting terminal values and monitoring network events.

Enable SNMP

You must check Local, Remote or both to enable SNMP function. If Local is checked, this

device will response request from LAN. Get Community

Setting the community of GetRequest your device will response.

Set Community

Setting the community of SetRequest your device will accept.

IP 1, IP 2, IP 3, IP 4

Input your SNMP Management PC's IP here. User has to configure to where this device

should send SNMP Trap message.

SNMP Version

Please select proper SNMP Version that your SNMP Management software supports.

3.3.5 Toolbox

ADMINISTRATOR'S MAIN ME	NU 📲 Status 🙀 Wizard 🕼 Advanced 🛛 > Logout
BASIC SE	TTING 🤣 SECURITY SETTING 🕲 ADVANCED SETTING 🏠 TOOLBOX
 View Log Firmware Upgrade Backup Setting Reset to Default Reboot 	 Toolbox View Log View the system logs. Firmware Upgrade Prompt the administrator for a file and upgrade it to this device. Backup Setting Save the settings of this device to a file. Reset to Default Reset the settings of this device to the default values. Reboot Reboot this device.

3.3.5.1 View Log

ADMINISTRATOR'S		Wizard Advanced > Logout
	BASIC SETTING 😵 SECURITY SE	TTING S ADVANCED SETTING TOOLBOX
 View Log 	System Log	
 Firmware Upgrade 	Item	Info
Backup Setting	Display time	Mon Jun 01 00:18:05 2009
	Time	Log
Reset to Default	2009年5月31日 下午 06:05:22	Admin from 192.168.1.22 login successfully
Reboot	2009年5月31日 下午 08:55:56	Admin from 192.168.1.22 login successfully
	2009年5月31日 下午 09:10:42	Restarted by 192.168.1.22
	2009年5月31日 下午 09:21:09	Restarted by 192.168.1.22
	2009年5月31日下午 09:27:55	Associated: 8C-64-22-84-0E-05 st=0
	2009年5月31日下午 09:28:03	Disassociated: 8C-64-22-84-0E-05 because RX deauth req
	2009年5月31日下午 09:32:04	Restarted by 192.168.1.22
	2009年5月31日下午 09:34:24	Restarted by 192.168.1.22
	2009年5月31日 下午 09:45:47	Admin from 192.168.1.22 login successfully
	2009年5月31日 下午 09:47:34	Restarted by 192.168.1.22
	2009年6月1日上午 12:00:00	Restarted by 192.168.1.22
	2009年6月1日上午 12:10:54	Admin from 192.168.1.22 login successfully
	Rei	resh Download Clear logs

You can View system log by clicking the View Log button

3.3.5.2 Firmware Upgrade

ADMINISTRATOR'S	s MAIN MENU 🚽 Status 😽 Wizard 🖓 Advanced > Logout						
	BASIC SETTING 🔣 SECURITY SETTING 🕲 ADVANCED SETTING 🏠 TOOLBOX						
View Log	E Firmware Upgrade						
Firmware Upgrade	Firmware Filename						
Backup Setting	》 「瀏覽…」						
• Reset to Default	Current firmware version is R0.01h0-01071530. The upgrade procedure takes about 20 seconds.						
Reboot	Note! Do not power off the unit when it is being upgraded.						
	When the upgrade is done successfully, the unit will be restarted automatically. Upgrade Cancel						

You can upgrade firmware by clicking Firmware Upgrade button.

3.3.5.3 Backup Setting

File Dov	wnload 🛛 🛛
?	You are downloading the file: config.bin from 192.168.1.1 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

You can backup your settings by clicking the **Backup Setting** button and save it as a bin file. Once you want to restore these settings, please click **Firmware Upgrade** button and use the bin file you saved.

3.3.5.4 Reset to default

iet Explorer 🛛
I setting to default?
Cancel

You can also reset this product to factory default by clicking the **Reset to default** button.

3.3.5.5 Reboot



You can also reboot this product by clicking the **Reboot** button.

Appendix A FAQ and Troubleshooting

What can I do when I have some trouble at the first time?

1.Why can I not connect the router even if the cable is plugged in Lan port and the led is light?

A: First, please check Status Led. If the device is normal, the led will blink per second.

If not, please check How blinking Status led shows.

There are many abnormal symptoms as below:

Status Led is bright or dark in work: The system hanged up .Suggest powering off and on the router. But this symptom often occurs, please reset to default or upgrade latest fw to try again.

Status led flashes irregularly: Maybe the root cause is Flash rom and please press reset Button to reset to default or try to use Recovery mode.(Refer to Q3 and Q4)

Status flashes very fast while powering on: Maybe the router is the recovery mode and please refer to Q4.

2. How to reset to factory default?

A: Press Wireless on /off and WPS button simultaneously about 5 sec

Status will start flashing about 5 times, remove the finger. The RESTORE process is completed.

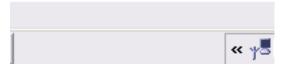
How do I connect router by using wireless?

1.How to start to use wireless?

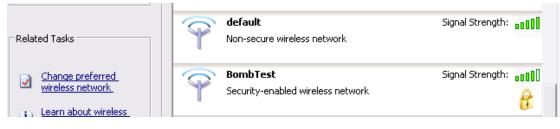
A: First, make sure that you already installed wireless client device in your computer. Then check the Configuration of wireless router. The default is as below:

Wireless Setting	[HELP]
ltem	Setting
▶ Wireless	◯ Enable ④ Disable
Network ID(SSID)	default
 Wireless Mode 	◯ 11 b/g/n Mixed ◯ 11n only
 SSID Broadcast 	⊙ Enable
Channel	11
▶ Security	None
	Save Undo WDS Setting
MAC Ad	dress Control Wireless Client List

About wireless client, you will see wireless icon:



Then click and will see the ap list that wireless client can be accessed:



If the client can not access your wireless router, please refresh network list again. However, I still can not fine the device which ssid is "default", please refer to Q3.

Network Tasks	Choose a wireless network		
Refresh network list	Click an item in the list below to connect to a <u>w</u> ireless network in range or to get more information.		
	default Non-secure wireless network	Signal Strength: BODD Connected	

Choose the one that you will want to connect and Connect:

Related Tasks	default Non-secure wireless network	Signal Strength:
Change preferred wireless network Wireless	This is network is confidured for open access. Inform Network Connection	ation sent over this
 Learn about wirele networking Change settings of connection 	"default" does not require a network key. Information se not encrypted and may be visible to others. If you are sure you want to connect to this network, clic click Cancel.	
	Connec	t Cancel

If successfully, the computer will show

🔅 Wireless Netw	ork Connection 5 is now	v connected 🗙
Speed: 54.0 Mbps		
nmand Prompt	🦉 untitled - Paint	« 🌉 📲

and get ip from router:

Ethernet adapter Wireless Network Connection 5:	
Connection-specific DNS Suffix .:	
IP Address	
Subnet Mask	
Default Gateway : 192.168.123.254	

2.When I use AES encryption of WPA-PSK to connect even if I input the correct pre-share key?

A: First, you must check if the driver of wireless client supports AES encryption. Please refer to the below:

Related Tasks	T	Non-secure wireless network		
<u>Change preferred</u> wireless network Learn about wireless	Ŷ	217 Security-enabled wireless network	Signal Strength:	
Learn about wireless networking Change settings of this connection	Ŷ	ZyXEL Non-secure wireless network	Signal Strength:	
		Aaron2	Signal Strength:	

If SSID is default and click "Properties" to check if the driver of wireless client supports AES encryption.

default properties	?	×
Association Authentication Connection		
Network <u>n</u> ame (SSID): default	-	
_ Wireless network key		
This network requires a key for the following:		
Network Authentication:		
Data encryption:		
Network key:		
Confirm network key:		
Key inde <u>x</u> (advanced):		
☐ The key is provided for me automatically		
This is a <u>c</u> omputer-to-computer (ad hoc) network; wireless access points are not used		
OK Cance	el	

3.When I use wireless to connect the router, but I find the signal is very low even if I am close to the router?

A: Please check if the wireless client is normal, first. If yes, please send the unit to the seller and verify What the problem is.