



Wireless LAN Access Point

User's Manual

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Chapter 1

Int roduct ion

This product is an access point for IEEE 802.11g/b 2.4GHz wireless network. You can use this access point to build up a wireless LAN.

The product supports WEP, ESSID and MAC address filter functions to consolidate the wireless network security. With ESSID authentication, 64/128 bit WEP encryption and MAC address filtering you can prevent unauthorized wireless stations from accessing your wireless network

The product's dipole antenna is detachable by connecting to a RP-SMA connector. Users can install a high gain antenna to the connector for better network link quality so that you can build wireless network with more flexibility.

This product provides easy to use user interface and allows users to configuring from web browser. Also it integrates DHCP server to provide multiple wireless and wired users to get their IP address automatically. With the versatile of features, this product is the best choice for you to integrate your wireless and wired network seamlessly.

1.1 Package Contents

The Access Point includes the following items:

- One Access Point
- One Power Adapter
- One User's Manual

1.2 Features

- Complies with the IEEE 802.11g/b 2.4GHz specification.
- High data rate 54, 11, 5.5, 2 and 1M bps network speed.
- Seamlessly integrate wireless and wired Ethernet LAN networks.
- Provides an internal 5-Port Fast Ethernet Switch for wired Ethernet connection.
- Auto rate fallback in case of obstacles or interferences.
- Provide 64/128-bit WEP Data Encryption function to protect the wireless data transmissions.
- Built-in DHCP server supports auto IP addresses assignment.
- Supports Web-based configuration.

1.3 Specifications

- Standards: IEEE 802.11g/b (Wireless), IEEE 802.3 (Wired)
- Data Rate: 54/11/5.5/2/1Mbps aut o fallback
- Security: 64/128-bit WEP Data Encryption
- Frequency Band: 2.400~2.4835 GHz (Industrial Scientific Medical Band)
- Radio Technology: Direct Sequence Spread Spectrum (DSSS)
- Antenna: External detachable dipole antenna (with RP-SMA connector)
- Connectors: 10/100Mbps RJ-45 x 1
- Power: 12VDC, 1A
- Transmit Power: 18dBm (Typical)
- LEDs: Power, LAN Link/Activity, Wireless Activity
- Dimension: 30(H) x 187(W) x 100(D) mm
- Temperature:

Operati ng: 32~ 131°F (0~55°C) Storage: - 4~158°F(-20~70°C)

- Humidity: 10-90% (Non-condensing)
- Certification: FCC, CE

1.4 Physical Description

Front Panel

On the Access Point's front panel there are LED lights that inform you of the Access Point's current status. Below is an explanation of each LED.



LED	Color	Status	Description
Power	Groon	Lit	Power is supplied.
I O Wei	Green	Off	No Power.
		Flash	Antenna is transmitting or
Wireless	; ;	i idon	receiving data.
Activity	Green		Antenna is not
		Off	transmitting or receiving
			data.
		On	Avalid linkis
LAN Link/Activity	Green	011	established.
		Flash	It is transmitting or
		14011	receiving data.
		Off	No link is established.

Back Panel

Access Point's connection ports are located on the back panel. Below is the description of each connection port.



Antenna Connector

This round connection is standard R everse SMA connector where any antennas with Reverse SMA connector can connect to the Access Point.

• DC Adapter Port

Insert the power jack of the power adapter into this port.

LAN Port

The Access Point's LAN port is where you connect to your LAN's network devices.

Reset

The Reset button allows you to do one of two things.

- If problems occur with your Access Point, press the reset button with a pencil tip (for less than 4 seconds) and the Access Point will re-boot itself, keeping your original configurations.
- 2) If problems persist or you experience extreme problems or you forgot your pass word, press the reset button for longer than 4 seconds and the Access Point will reset itself to the factor y default settings (warning: your original configurations will be replaced with the factory default settings).

Chapter 2 Wireless LAN AP Connection

1. Locate an optimum location for the Wireless LAN Access Point.

The best location for your Access Point is usually at the center of your wireless network, with line of sight to all of your mobile stations.

2. Connect the Wireless LAN Access Point to your router, hub or switch.

Connect one end of standard UTP cable to the Access Point's LAN Port and connect the other end of the cable to a switch, a router or a hub. The Access Point will then be connected to your existed wired LAN Network.

3. Connect the DC Power Ad apter to the Wireless LAN Access Point's Power Socket.

Only use the power adapter supplied with the Access Point. Using a different adapter may damage the product.

The Hard ware In stall ation is complet e.

Chapter 3 Wireless LAN AP Configuration

3.1 Getting Started

This Access Point provides web-based configuration tool allowing you to configure from wired or wireless stations. Follow the instructions below to get started configuration.

From Wired Station

1. Make sure your wired station is in the same subnet with the Access Point.

The default IP Address and Sub Mask of the Access Point is:

Default IP Address: 192.168.2.1 Default Subnet: 255.255.255.0

Configure your PC to be in the same subnet with the $\ensuremath{\mathsf{Access}}$ Point.

1a) W indows 95/98/Me

- 1. Click the Start button and select Settings, then click Control Panel. The Control Panel window will appear.
- 2. Double-click *Network* icon. The *Network* window will appear.
- 3. Check your list of *Network Components*. If TCP/IP is not installed, click the *Add* button to install it now. If TCP/IP is installed, go to **step 6**.
- 4. In the *Network Component Type* dialog box, select *Protocol* and click *Add* button.
- In the Select Network Protocol dialog box, select Microsoft and TCP/IP and then click the OK button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.
- After installing TCP/IP, go back to the Network dial og box. Select TCP/IP from the list of Network Components and then click the Properties button.

- 7. Checkeach of the tabs and verify the following settings:
 - Bindings: Check Client for Microsoft Networks and File and printer sharing for Microsoft Networks.
 - Gateway: All fields are blank.
 - DNS Configuration: Select Disable DNS.
 - WINS Configuration: Select Disable WINS Resolution.
 - IP Address: Select Specify an IP Address. Specify the
 - IP Address and Subnet Maskas following example.
 - ✓ IP Address: 192.168.2.3 (any IP address within 192.168.2.2~192.168.2.254 is available, do not setup 192.168.2.1)
 - ✓ Subnet Mask 255.255.255.0
- 8. Reboot the PC. Your PC will now have the IP Address you specified.

1b) W indows 2000

- Click the Start button and select Settings, then click Control Panel. The Control Panel window will appear.
- 2. Double-click Network and Dial-up Connections icon. In the Network and Dial-up Connection window, doubleclick Local Area Connection icon. The Local Area Connection window will appear.
- 3. In the *Local Area Connection* window, click the *Properties* button.
- 4. Check your list of *Network Components*. You should see *Internet Protocol [TCP/IP]* on your list. Select it and click the *Properties* button.
- 5. In the *Internet Protocol (TCP/IP) Properties* window, select *Use the following IP address* and specify the IP Address and Subnet mask as following.
 - IP Address: 192.168.2.3 (any IP address within 192.168.2.2~192.168.2.254 is available, do not setup 192.168.2.1)
 - ✓ Subnet Mask 255.255.255.0
- 6. Click *OK* to confirm the setting. Your PC will now have the IP Address you specified.

1c) W indows NT

- Click the Start button and select Settings, then click Control Panel. The Control Panel window will appear.
- 2. Double-click *Network* icon. The *Network* window will appear. Select the *Protocol* tab from the *Network* window.
- Check if the TCP/IP Protocol is on your list of Network Protocols. If TCP/IP is not installed, click the Add button to install it now. If TCP/IP is installed, go to step 5.
- 4. In the Select *Network Protocol* window, select the *TCP/IP Protocol* and click the *Ok* button to start installing the *TCP/IP protocol*. You may need your Windows CD to complete the installation.
- After you install TCP/IP, go back to the Network window. Select TCP/IP from the list of Network Protocols and then click the Properties button.
- 6. Checkeach of the tabs and verify the following settings:
 - IP Address: Select Specify an IP address. Specify the IP Address and Subnet Maskas following example. ✓ IP Address: 192.168.2.3 (any IP address within 192.168.2.2~192.168.2.254 is available, **do not setup** 192.168.2.1)
 - ✓ Subnet Mask 255.255.255.0
 - DNS: Let all fields are blank.
 - WINS: Let all fields are blank.
 - Routing: Let all fields are blank.
- 7. Click OK to confirm the setting. Your PC will now have the IP Address you specified.
- 2. Enter **192.168.2.1** from Web Browser to get into the Access Point's configuration tool.
- A screen will be popped up and request you to enter user name and password. The default user name and pass word is as follows.

User Name: Admin Password: 1234

Enter the default user name and pass word, then press **OK** button directly.

Connect to 192.1	68.2.1
	A Pri
<u>ğı</u> 1	
Default: admin/1234	
User name:	S
Password:	
	Remember my password
	OK Cancel

4. You can start configuring the Access Point.

From Wireless Station

- Make sure your wireless station is in the same subnet with the Access Point. Please refer to the step 1 above for configuring the IP Address and Sub Mask of the wireless station.
- Connect to the Access Point. The Access Point's ESSID is "def ault" and the WEP Encryption function is disabled. Make sure your wireless station is using the same ESSID as the Access Point and associate your wireless station to the Access Point.
- 3. Enter **192.168.2.1** from Web Browser to get into the Access Point's configuration tool.
- 4. Enter the user name and pass word and then press **OK** button and you are available to configure the Access Point now.

3.2 Configuring the Access Point

3.2.1 Status and Information

On this screen, you can see the general information of the Access Point including Alias Name, Firmware Version, ESSID, Channel Number, Status, IP Address, MAC Address, etc.



3.2.2 Wireless Setting

This Access Point supports AP, Station, Bridge and WDS modes. "AP Mode" provides pure access point function. The simplest way to build up a wireless LAN is to use "AP Mode". "Station Mode" provides the function to connect to other AP without bridge function. "AP Bridge Mode" provides the function to bridge more than 2 wired Ethernet networks together by wireless LAN. You can use two access points with "AP Bridge-Point to Point mode" to bridge two wired Ethernet networks together. If you want to bridge more than two wired Ether net networks together, you have to use enough access points with "AP Bridge-Point to Multi-Point mode". An

Wireless LAN AP Configuration

access point with "AP Bridge-Point to Point mode" or "AP Bridge-Point to Multi-Point mode" can only be used to bridge wired Ethernet networks together. It can't accept connection from other wireless station at the same time. If you want an access point to bridge wired Ethernet network and provide connection service for other wireless station at the same time, you have to set the access point to "AP Bridge-WDS mode". Simply speaking, "AP Bridge-WDS mode" function is the combination of "AP mode" and "AP Bridge-Point to Multi-Point mode".



AP mod e setting page:

Station-Ad Hoc mode setting page:

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• Home	Wireless Setting			
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Advanced Setting	parameters are used to the	e weekss sladers to clarified	ID THE ACCESS FRIME	
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Radius Server		9 4 (92, 49)		
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System Utility	Charrel Number	(1)		
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Station-Infrastructure mode setting page:

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Advanced Setting	perameters are used to be	e wreess salaris in carries to the Access Ports
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Radius Server		a + 005 00.
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System Utility	ESSID	7209APg
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AP Bridge-Point to Point mode setting page:

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Advanced Setting	parameters are used for the wa	INEEDS STARTOTS TO CONTRACT TO THE ACCESS FORE.
Radius Server	Mode :	AP Bridge-Point to Point
MAC Filtering		
System Utility	fland	24 GH2 (G)
Configuration Tool	Channel Number	
Comparation room	MAC Address 1	00000000000
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Reset		
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AP Bridge-Point to Multi-Point mode setting page:

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• Basic Setting	This page allows you to define it	ESSID, and Channel for the wireless connection. The eless stations to connect to the Access Point.	68
Advanced Setting			
Radius Server	binde	▲ 曾述描述使用用用和方法	_
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System Utility	Band	24 GH2 (G)	
Configuration Tool	Channel Number :	1 🖻	
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AP Bridge-WDS mode setting page:

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• Basic Setting	This page allows you to define it	SSID, and Channel for the wireless connection eless stations to connect to the Access Point	These
Advanced Setting	participant and and an even an		
Security	Mode	AP Bridge-WD5	
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Universal Repeater mode setting page:

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EDIMAX		
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Basic Setting	This page allows you to define E	SSID, and Channel for the wireless connection. These
Advanced Setting	parameters are used for the man	DEDIS SAMONTS HE CONTROLLES MIE ACCESS F CARL
Security	Mode	Universal Repeater
Radius Server	201	a cattered
MAC Filtering	Band.	24 GH2 (G)
System Utility	Channel Number	Labarg
Configuration Tool	Associated Clients	Show Active Clients
Upgrade	WLAN MAC 0	Cine MAC
• Reset		
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Parameter	Description
	The alias name of this access point. You
Alias Name	should assign Alias Name in "AP mode" and
	"AP Bridge-WDS mode".
	It allows you to set the AP fix at 802.11b or
Band	802.11g mode. You also can select B+G
Barra	mode to allow the AP select 802.11b and
	802.11g connection automatically.
	The ESSID (up to 31 printable ASCII
	characters) is the unique name identified in a
	WLAN. The ID prevents the unintentional
	merging of two co-located WLANs. Please
ESSID	make sure that the ESSID of all stations in
	the same WLAN network are the same. The
	default ESSID is "default". You should
	assign Allas Name In "AP mode" and "AP
	Bridge-WDS mode".
	Select the appropriate channel from the list
	provided to correspond with your network
	settings. Channels differ from country to
	country.
Channel	Channel 1-11 (North America)
Channel	Channel 1- 14 (Japan)
Number	Channel 1-13 (Europe)
	There are 14 channels available.
	rou should assign Allas Name in AP
	Bridge-Doint to Multi-Doint mode" and "AD
	Bridge WDS mode"

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MAC Address	If you want to bridge more than one wired Ether net networks together with wireless LAN, you have to set this access point to "AP Bridge-Point to Point mode", "AP Bridge-Point to Multi-Point mode" or "AP Bridge-WDS mode". You have to enter the MAC addresses of other access points that join the bridging work.
Associated Clients	Click "Show Active Clients" button, then an "Active Wireless Client Table" will pop up. You can see the status of all active wireless stations that are connecting to the access point.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

Active Wireless Client Table

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"Active Wireless Client Table" records the status of all active wireless stations that are connecting to the access point. You can lookup the MAC Address, Number of Transmitted Packets, Number of Received Packets and Encryption Status of each active wireless client in this table.

	iess chem	Table			
This table shows	the MAC addre	ss, transmise	tion, receipti	on packet co	unters and
euclibied status	IOF EACH ASSOCI	aled withless	chent.		
MAC Address	Tx Packet	Ra Packet	Tx Rate (Mbps)	Power	Expired Time (s)
None			***	-	in a second

Parameter	Description
MAC	MAC address of this active wireless station.
Address	
TxPacket	The number of transmitted packets that are
	sent out from this active wireless station.
RxPacket	The number of received packets that are
	received by this active wireless station.
TX Rate	The transmission rate in Mbps.
Power	Shows if the wireless client is in Power Saving
Saving	mo de.
Expired	The time in second before dissociation. If the
Time	wireless keeps idle long than the expired time,
	this access point will dissociate it. The
	wireless client station has to associate again
	when it become active.
Refresh	Refresh the "Active Wireless Client Table".
Close	Refresh the "Active Wireless Client Table".

3.2.3 Advanced Setting

You can set advanced parameters of this access point. The parameters include Authentication Type, Frag ment Threshold, RTS Threshold, Beacon Interval, DTIM Period, Transmit Rate, Broadcast ESSID, Operating Rates Mode, CTS Protection, Transmit Bust Mode. You should not change these parameters unless you know what effect the changes will have on this access point.



Wireless LAN AP Configuration

Danamatan	Description
Parameter	Description
	There are two authentication types:
	"Open System" and "Shared Key".
	When yous elect "Open System",
	wireless stations can associate with
	this access point without WEP
	encryption. When you select "Shared
A sub- south and a su	Kev". vou should also setup WEP kev
Authentication	in the "Encryption" page and wireless
Iype	stations should use WEP encryption in
	the authentication phase to associate
	with this access point If you select
	"Auto" the wireless client can
	associate with this access point by
	using any one of these two
	authoptication types
	"Energy and The schole" and sit as the
	Fragment in resnoid specifies the
Fragment	maximum size of packet during the
Threshol d	tragmentation of data to be transmitted.
	If you set this value too low, it will result
	in bad perfor mace.
	When the packet size is smaller the
RTS Threshold	RTS threshold, the access point will
	not use the RTS/CTS mechanism to
	send this packet.
	The interval of time that this access
Reacion Interval	point broadcast a beacon. Beacon is
beacon interval	used to synchronize the wireless
	net wor k.
	The "Data Rate" is the rate this access
	point uses to transmit data packets.
Data Rate	The access point will use the highest
	possible selected transmission rate to
	transmit the data packets.

.....

	The "Long Preamble" can provide
Preamble Type	better wireless LAN compatibility while
	the "Short Preamble" can provide
	better wireless LAN performance.
	wireless station located within the
	coverage of this access point can
Broadcast ESSID	discover this access point easily. If you
	are building a public wireless network,
	enabling this feature is recommended.
	Disabiling "Broadcast ESSID" can
	ргомde better security. If you enable "IAPP", it will allow
IAPP	wireless station roaming between IAPP
	enabled access points within the same wireless LAN.
	This is also called CTS Protection. It is
	recommended to enable the protection
	mechanism. This mechanism can
802.11g	decrease the rate of data collision
	between 802.11b and 802.11g wireless
FIOLECTION	stations. When the protection mode is
	enabled, the throughput of the AP will
	be a little lower due to many of frame
	traffic should be trans mitted.

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Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

3.2.4 Security

This Access Point provides complete wireless LAN security functions, include WEP, IEEE 802.11x, IEEE 802.11x with WEP, WPA with pre-shared key and WPA with RADIUS. With these security functions, you can prevent your wireless LAN from illegal access. Please make sure your wireless stations use the same security function.

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EDIMAX	
• Home	Security
Basic Setting	This page allows you setup the wireless security. Turn on WEP or WPA by using Encrution Keys could never any unauthorized access to your wireless network
Advanced Setting	
Security	Encryption Disable w
Radius Server	Enable 802.1x Authentication
MAC Filtering	(Apply) (Gancal)
 System Utility 	
Configuration Tool	
Upgrade	
• Reset	
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W EP

WEP is an authentication algorithm, which protects authorized Wireless LAN us ers against eavesdropping. The Authentication type and WEP key of wireless stations must be the same with the Access Point. This Access Point supports 64/128- bit WEP Encryption function. With this function, your data will be transmitted over the wireless network securely.

Wireless LAN AP Configuration

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EDIMAX			
Home	Security		
Basic Setting	This page allows you setup the we	eless security. Turn on WEP or WPA by use	
Advanced Settion	Encryption Keys could prevent any	unauthorized access to your wireless netwo	ĸ
		Caraman and Caraman an	
Security	Encryption	WEP	
 Radius Server 	Key Length	64-bit 💌	
MAC Filtering	Key Format	Hex (10 characters) 🔫	
System Utility	Default Tx Key	Key 1 🛩	
Configuration Tool	Encryption Key 1	********	
	Encryption Key 2	******	
• Upgrade	Encryption Key 3	*******	
• Reset			3
0.Comm		(C)	konst.

Parameter	Description
	You can select the 64-bit, or 128bit key to
	encrypt transmitted data. Larger WEP key
Key	length will provide higher level of security, but
Length	the throughput will be lower. You also can
	select Disable to transmit data without
	encryption.
	You may select to select ASCII Characters
	(alphanumeric format) or Hexadecimal Digits
Key	(in the "A-F", "a-f" and "0-9" range) to be the
Format	WEP Key. For example:
	ASCII Characters: guest
	Hexadecimal Digits: 12345abcde

Key1 - Key4	The WEP keys are used to encrypt data transmitted in the wireless network. Fill the text box by following the rules below. 64-bit WEP: input 10-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 5-digit ASCII character as the encryption keys. 128-bit WEP: input 26-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 13-digit ASCII characters as the encryption keys.
Default Key	Select one of the four keys to encrypt your data. Only the key you select it in the "Default key" will take effect.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

802.1x

IEEE 802.1x is an authentication protocol. Every user must use a valid account to login to this Access Point before accessing the wireless LAN. The authentication is processed by a RADIUS server. You can use an external RADIUS server or use the RADIUS server built-in with the Access Point. This mode only authenticates user by IEEE 802.1x, but it does not encryption the data during communication. Wireless LAN AP Configuration

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Basic Satting	Encryption Key 1	******		
bank setting	Encryption Key 2	********		-
 Advanced Setting 	Encryption Key 3	******		
Security	Encryption Key 4	********		
Radius Server	Enable 802.1x Author	tication		
MAC Filtering	Use internal MDSPE	AP RADIUS Server		
Sustan Utility	RADIUS Server IP address			
· ayrorm truty	RADIUS Server Part	[1912		
 Configuration Tool 	RADIUS Server Password			
Upgrade		(Ap	aty Cancel	
• Reset				
Done			🔮 Internat	

Parameter	Description
	You can select to use the internal
Use internal	RADIUS server to process the
MD5/PEAP	authentication job. The internal RADIUS
RADIUS Server	server uses MD5/PEAP authentication
	met ho d.
RADIUS Ser ver	The IP address of external RADIUS
IP address	server.
RADIUS Ser ver	The service port of the external
Port	RADIUS ser ver.
RADIUS Ser ver	The pass word used by external
Pass word	RADIUS ser ver.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

802.1x W EP static key

IEEE 802.1x is an authentication protocol. Every user must use a valid account to login to this Access Point before accessing the wireless LAN. The authentication is processed by a RADIUS server. You can use an external RADIUS server or use the RADIUS server built-in with the Access Point. This mode also uses WEP to encrypt the data during communication.

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ALTINORUM FERRIT TOLETHER	Default Tx Key :	Kep 1 ×	
Home	Encryption Key 1	********	
Basic Setting	Encryption Key 2		
Advanced Setting	Exception Key 1		
Security	Enconation Kay 4		
Radius Server	Enable 107 to Author	tication	
	Use internal MDSPE/	P RADIUS Server	
System Utility	RADIUS Server IP address		
Configuration Tool	RADIUS Server Part	1111	
Congulation Teor	RADIUS Server Password		
Upgrade		(Apply) Cance	Ð
• Reset			
Owe		🔮 Intern	et.

Parameter	Description
KeyLength	You can select the 64-bit or 128-bit key to encrypt transmitted data. Larger WEP key length will provide higher level of security, but the throughput will be lower. You also can select Disab le to transmit data without encryption.

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	Vou moveplaat to calcat A SCII
	Observations (allah several) and (and all)
	Characters (alphanumeric format) or
	Hexadecimal Digits (in the "A-F", "a-f"
Key For mat	and "0-9" range) to be the WEP Key. For
	example:
	ASCII Characters: guest
	Hexadecimal Digits: 12345 abcde
•	The WEP keys are used to encryot data
	transmitted in the wireless network Fill
	the text box by following the rules below
	64-bit WEP: input 10-digit Hex values (in
	the "A F" "e f" and "O O" reners) on 5 digit
Key1 - Key4	the A-F, a-f and 0-9 range) or 5-digit
	ASCII character as the encryption keys.
	128-bit WEP: input 26-digit Hex values
	(in the "A-F", "a-f" and "0-9" range) or 13-
	digit ASCII characters as the encryption
	keys.
	Select on e of the four keys to encrypt
Default Key	your data. Only the key you select it in
	the "Default kev" will take effect.
	You can select to use the internal
Use internal	RADIUS server to process the
MD5 PFAP	authentication job. The internal RADIUS
RADIUS Server	server uses MD5 PEAP authentication
	method
	The ID a ddress, of automod DADUUC
RADIUS Server	The IP address of external RADIUS
IP address	server.
RADIUS Server	The service port of the external RADIUS
Port	server.
RADIUS Ser ver	The pass word used by external RADIUS
Pass word	server.

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Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

W PA pre-shared key

Wi-Fi Protected Access (WPA) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses TKIP to change the encryption key frequently. This can improve security very much.

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ΣΟΙΜΑΧ			
+ Home	Security		
Basic Setting	This page allows you setup the wrell Encountere Keys could prevent any	ess security. Turn on WEP or WPA	by using
Advanced Setting	Contribution to the count between mile		initial contraction of the second sec
Security	Encryption	WPA pre-shared key	
Radius Server	WPA Uncast Opher Sule	@WPA(TKP) OWPA2(AES)	O WPA2 Mand
MAC Filtering	Pre-shared Key Format	Passpfrase 🛩	
System Utility	Pre-shared Key		1211
Configuration Tool		Apply	Cancel
Upgrade			
· Reset			
(Cone			🕸 kitorest
pramotor	Description		
	TKID so a a b		
	TKIP can ch	ange the enci	yption key
WPA(TKIP)	frequenti y to	ennancetne	WITEIESS LAIN
	security.		
	This use CC	MP protocol t	ochange
WPA2(AES)	encryption k	ey frequently.	AES can
	provide high	level encrypt	ion to
	enhance the	wireless LAN	lsecuritv.
	This will use	TKIP or AES	has ed on the
M/PA 2 Mixed	other comm		
VVI AZ IVIIZEU			
	automaticali	у.	

	You may select to select A SCII
Pre-shared Key	Characters (al phanumeric format) or
	Hexadecimal Digits (in the "A-F", "a-f"
	and "0-9" range) to be the Pre-shared
Format	Key. For example:
	ASCII Characters: iamguest
	Hexadecimal Digits: 12345abcde
	The Pre-shared keyis used to
	authenticate and encrypt data
	transmitted in the wireless network. Fill
	the text box by following the rules
Pre-shared Key	below.
-	Hex WEP: input 64-digit Hex values (in
	the "A-F", "a-f" and "0-9" range) or at
	least 8 character pass phrase as the
	pre-shared keys.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

WPARAIUS

Wi-Fi Protected Access (WPA) is an advanced security standard. You can use an external RADIUS server to authenticate wireless stations and provide the session key to encrypt data during communication. It uses TKIP to change the encryption key frequently. This can improve security very much. Wireless LAN AP Configuration

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EDIMAX	
Home	Security
Basic Setting	This page allows you setup the wireless security. Turn on WEP or WPA by using Encoderon Keys could be write any use the interface to your wireless outwork
Advanced Setting	Purification and a second behavior and management and access in from management and access
Security	Encryption WPA RADIUS
Radius Server	WPA Unicast Opher Sule @ WPA(TiOP) OWPA2(AES) OWPA2 Mixed
MAC Filtering	Use Internal MOSPEAP RADIUS Server
System Utility	RADAUS Server IP address
a grann churg	RADIUS Server Port:
 Conngulation Tool 	RADUS Server Password
Upgrade	(Apply) Cancel
· Reset	
0 Owne	🕸 internet

Parameter	Description
	TKIP can change the encryption key
· · · · · · · · · · · · · · · · · · ·	frequently to enhance the security.
	This use CCMP protocol to change
WPA2(AES)	encryption key frequently. AES can
VII / (Z(/ (EO)	provide high level encryption to enhance
	the wireless LAN security.
WPA2 Mixed	This will use TKIP or AES based on the
TH / LE HINGO	other communication peer automatically.
RADIUS Ser ver	The IP address of external RADIUS
IP address	server.
RADIUS Server	The service port of the external RADIUS
Port	server.
RADIUS Ser ver	The pass word used by external RADIUS
Pass word	server.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

3.2.5 Radius Server

This Access Point provides an internal RADIUS server to authenticate wireless station users. You have to add user accounts to the RADIUS server. The wireless station user has to use one of these accounts to login to the Access Point before access the wireless LAN. You also have to add secret key to the RADIUS server. RADIUS server client has to use one of these secret keys to login the RADIUS server before asking the RADIUS server to authenticate the uses for it.



	W ireless L AN AP Configuratio
Parameter Enable Radius	Description Select to enable the RADIUS server.
Server	
User Profile table	This table records the accounts of users you want to allow to access your wireless network. An account includes the "User name" and "Pass word". A wireless LAN user has to enter correct "Username" and "Pass word" before he/s he is allowed to access the wireless LAN.
Add an user account	Fill in the "Username", "Pass word" and "Re-Type Pass word" of the new account to be added and then click "Add". Then this new account will be added into the account table below. If you find any typo before adding it and want to retype again. Just click "Reset" and "Username", "Password" and "Re- Type Pass word" fields will be cleared.
Remove us er account from the table Reset	If you want to remove some account from the table, select the accounts you want to remove in the table and then click "Delete Selected". If you want remove all user accounts from the table, just click "Delete All" button. Click "Reset" will clear your current adapted

	This table records the clients of the
	RADIUS ser ver that need to
	authenticate wireless LAN users.
	Authentication client information
Authoratication	includes the "Client IP" and "Secret
Client table	Key". An authentication client has to
Chenicable	use the "Secret Key" to login to the
	RADIUS ser ver befor e it can start to
	authenticate wireless LAN users. An
	authentication client can be an access
	point.
	Fill in the "Client IP", "Secret Key" and
	"Re-Type Secret Key" of the new
	authentication client to be added and
Add an	then click "Add". Then this new
authentication	authentication will be added into the
client	authentication client table below. If you
onon	find any typo before adding it and want
	to retype again. Just click "Reset" and
	"Client IP", "Secret Key" and "Re-Type
	Secret" fiel ds will be cleare d.
	lfyou want to remove some
	authentication client from the table,
Remove	select the authentication clients you
authentication client from the table	want to remove in the table and then
	click "Delete Selected". If you want
	remove all user authentication clients
	from the table, just click "Delete All"
	butt on.
Reset	Click "Reset" will clear your current
1,0000	selections.

......

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

3.2.6 MAC Address Filtering

This Access Point provides MAC Address Filtering, which prevents the unauthorized MAC Address es from accessing your wireless network.

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interes 6] http://192.108.2		.,
TOMAX		
ACTIVICITIES PERFECTION CONTINUES		
Home	System Utility	1
Basic Setting	Enter the IP Address of the Access Point. If you want to use DHCP server service, you should enter a unique IP for the Access Point.	
Advanced Setting		
 Security 	Password Settings	
Radius Server	Current Password	
MAC Filtering	New Password	
 System Utility 	Re-Enter Password	
Configuration Tool		
Upgrade	Management IP	
• Reset	P Address 197.168.2.1	s.
Done	🔮 bitanat	

Parameter	Description
Filtering	Enable or disable the MAC Address Filtering function.
MAC Address Filtering Table	This table records the MAC addresses of wireless stations you want to allow to access your network. The "Comment" field is the description of the wireless station associated with the "MAC Address" and is helpful for you to recognize the wireless station.

Wireless LAN AP Configuration

Add MAC address into the table	In the bottom "New" area, fill in the "MAC Address" and "Comment" of the wireless station to be added and then click "Add". Then this wireless station will be added into the "MAC Address Filtering Table" above. If you find any typo before adding it and want to retype again. Just click "Clear" and both "MAC Address" and "Comment" fields will be cleared
Remove MAC	lfyou want to remove some MAC
address from the table	address from the "MAC Address Filtering Table", select the MAC address es you want to remove in the table and then click "Delete Selected". If you want remove all MAC addresses from the table, just click "Delete All" button.
Reset	Click "Reset" will clear your current selections.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

3.2.7 System Utility

From here, you can define the Access Point's IP Address and Login Password and enable the Access Point to be a DHCP Server.



Wireless LAN AP Configuration

Re-Enter Pass word	Reconfirm the pass word (up to 15-digit alphanumeric string) you want to login to the Access Point. Note that the pass word is case-sensitive.
IP Address	Designate the Access Point's IP Address. This IP Address should be unique in your network. The default IP Address is 192.168.2.1 .
Subnet Mask	Specify a Subnet Maskfor your LAN segment. The Subnet Mask of the Access Point is fixed and the value is 255.255.255.0.
DHCP Server	Enable or disable the DHCP Server.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

3.2.7.1 DHCP Server Setting

DHCP Server will automatically give your LAN client an IP address. If the DHCP is not enabled then you'll have to manually set your LAN client's IP address.

Parameter	Description
Default Gateway IP	Specify the gateway IP in your network This IP address should be different from the Management IP.
Domain Name Server IP	This is the ISP's DNS server IP address that they gave you; or you can specify your own preferred DNS server IP address.

Start I P/E nd IP	You can designate a particular IP address range for your DHCP server to issue IP address es to your LAN Clients. By default the IP range is from: Start IP 192.168.2.100 to End IP 192.168.2.200.
Domain Name	You can specify the Domain Name for your Access Point.
Leas e Time	The DHCP Server when enabled will temporarily give your LAN client an IP address. In the Leas e Time setting you can specify the time period that the DHCP Server lends an IP address to your LAN clients. The DHCP Server will change your LAN client's IP address when this time threshold period is reached.

Click **Apply** button at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the Access Point.

3.2.7 Configuration Tool

The Configuration Tools screen allows you to save (**Backup**) the Access Point's current configuration setting. Saving the configuration settings provides an added protection and convenience should problems occur with the Access Point and you have to reset to factory default. When you save the configuration setting (Backup) you can re-load the saved configuration into the Access Point through the **Restore** selection. If extreme problems occur you can use the **Restore** to **FactoryDefault** selection, this will set all configurations to its original default settings (e.g. when you first purchased the Access Point).

Wireless LAN AP Configuration

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• Home	Configuration Tool			
Basic Setting	Use the "Blackup" tool to save the Access Point's current configurations to "config ter". You can then use the "Restare" tool to restore the saved config	Use the "Backup' tool to save the Access Point's current configurations to a file named		
Advanced Setting	Access Point Atternatively, you can use the "Restore to Factory Default" to Access Point to perform System Reset and restore the original factory set	of to force the ings		
Security				
Radius Server	Backup Settings : Save			
MAC Filtering	Restore Settings	0 .		
 System Utility 	Restore to Factory			
Configuration Tool	10000 · · · · · · · · · · · · · · · · ·			
Upgrade				
• Reset				
Oone		🔮 literat	1.1	
ameter	Description			
	Use the "Backup" tool to s	ave th	e	
	Access Point's current con	figurat	ion t	
	a file named "config hin" or	a file named "config hin" on your PC		
	Vou con then use the "Per	toro"	tool t	
opfiguration	rou can then use the sound			
Tasla	upio ad and restore the sa	<i>i</i> ea		
loois	configuration to the Access	configuration to the Access Point.		
	Alternatively, you can use	the "R	esto	
	to Factory Default" tool to	force	the	
	Access Point to perform a	power	rese	
	and restore the original fac	torvs	ettino	

3.2.8 Firm ware Upgrade

This page allows you to upgrade the Access Point's firmware.



Parameter	Description
Firmware Upgrade	This tool allows you to upgrade the Access Point's system firmware. To upgrade the firmware of your Access Point, you need to download the firmware file to your local hard disk, and enter that file name and path in the appropriate field on this page. You can also us e the Browse button to find the firmware file on your PC. Please reset the Access Point when the upgrade process is complete.

Once you've selected the new firmware file, click **Apply** button at the bottom of the screen to start the upgrade process. (You may have to wait a few minutes for the upgrade to complete). Once the upgrade is complete you can start using the Access Point.

3.2.9 Reset

You can reset the Access Point's system should any problem exist. The reset function essentially Re-boots your Access Point's system.



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process is complete you may start using the Access Point again.

Chapter 4

Troublesh oot in g

This chapter provides solutions to problems usually encountered during the installation and operation of the Access Point.

- 1. How to manually find your PC's IP and MAC Address?
 - 1) In Windows, open the Command Prompt program
 - 2) Type Ip config /all and Enter
 - Your PC's IP address is the one entitled IP address
 - Your PC's MAC Address is the one entitled Physical Address

2. What is BSS ID?

A group of wireless stations and an Access Point compose a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSSID.

3. What is ESSID?

An Infrastructure configuration could also support roaming capability for mobile workers. More than one BSS can be configured as an Extended Service Set (ESS). Users within an ESS could roam freely between BSSs while maintaining a continuous connection to the wireless network stations and the Wireless LAN Access Points.

4. Can data be intercepted while tran smitting through the air?

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inher ent scr ambling security feature. On the software side, the WLAN series offers the encryption function (WEP) to enhance security and access control.

5. What is WEP?

WEP stands for Wired Equivalent Privacy, a data privacy mechanism based on a 64(40)-bit shared key algorithm.

6. What is a MAC Address?

The Media Access Control (MAC) address is a unique number assigned by the manufacturer to any Ether net networking device, such as a network adapter, that allows the network to identify it at the hardware level. For all practical purposes, this number is usually permanent. Unlike IP address es, which can change every time a computer logs on to the network, the MAC address of a device stays the same, making it a valuable identifier for the network. Free Manuals Download Website <u>http://myh66.com</u> <u>http://usermanuals.us</u> <u>http://www.somanuals.com</u> <u>http://www.4manuals.cc</u> <u>http://www.4manuals.cc</u> <u>http://www.4manuals.cc</u> <u>http://www.4manuals.com</u> <u>http://www.404manual.com</u> <u>http://www.luxmanual.com</u> <u>http://aubethermostatmanual.com</u> Golf course search by state

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