

802.11g Wireless Access Point

WAP-4036

User's Manual

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 technician for help.

FCC Caution

To assure continued compliance. (example-use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This 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.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE)

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8,2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries Not Intended for Use

The ETSI version of this device is intended for home and office use in Austria Belgium, Denmark, Finland, France (with Frequency channel restrictions). Germany, Greece, Ireland, Italy, Luxembourg .The Netherlands, Portugal, Spain, Sweden and United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

Potential Restrictive Use

France: Only channels 10,11,12 and 13

WEEE Regulation



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User's Manual for PLANET Wireless Access Point Model: WAP-4036 Rev: 1.0 (October, 2007) Part No. EM-WAP4036

TABLE OF CONTENTS

Chapter	1 Introduction7
1.1	Package Contents7
1.2	Features7
1.3	LED Indicators
1.4	Back View
1.5	Wireless Performance9
Chapter	2 Hardware Installation10
Chapter	3 Web Configuration 11
2.1	Statue 11
3.1	
3.2	Radio
3.3	Security
3.3.1	NONE
3.3.2	WEP15
3.3.3	WPA Personal16
3.3.4	WPA2 Personal
3.3.5	WPA & WPA2 Personal18
3.4	MAC Filter
3.5	WDS
3.6	Advanced21
3.7	Client Info
3.8	Site Survey
3.9	IP Config
3.10	DHCP Server
3.10.	DHCP Setup
3.10.2	2 IP Reserve
3.10.3	3 DHCP Info
3.11	MISC
3.11.1	Login ID & Password Setup27
3.11.2	2 Restore Default / Restart System
3.11.3	B Firmware Upgrade

Chapt	ter 4 Configuring Local Networking	29
4.1	Assigning a Static IP Address in Windows XP/2000	29
4.2	Additional Settings for Wireless Client	
4.3	Checking PC's IP and Connection with the AP	
Арреі	ndix A Specification	33
Арреі	ndix B Frequently Ask Question	34

Chapter 1 Introduction

Thank you for purchasing PLANET WAP-4036, 802.11g Wireless Access Point. This device supports both IEEE 802.11b and IEEE 802.11g standards. Except for essential AP mode, WAP-4036 also provides AP Client/ Repeater/ WDS/ AP+WDS (Wireless Distributed System) modes to accommodate all kinds of network topology. High data rate transfer of up to 54Mbps, up to 5 times faster than 802.11b, support allows faster communication between LAN and WLAN. It is backward compatible with existing 802.11b infrastructure while migrating to the 802.11g standard. Maximize network efficiency while minimizing your network investment and maintenance costs.

In addition, the WAP-4036 supports WEP, WPA, WPA2 and MAC address filter function to consolidate the wireless network security; you can prevent unauthorized wireless stations from accessing your wireless network.

This product provides a friendly web interface and allows users to configuring from browser. It is also a total solution for the Small and Medium-sized Business (SMB) and the Small Office/Home Office (SOHO) markets, giving you an instant network today, and the flexibility to handle tomorrow's expansion and speed.

1.1 Package Contents

Make sure that you have the following items:

- 1 x WAP-4036
- 1 x Power Adapter
- 1 x User's Manual CD
- 1 x Quick Installation Guide
- 1 x External Antenna
- 1 x Ethernet Cable



If any of the above items are missing, contact your supplier as soon as possible.

1.2 Features

- Complies with the IEEE 802.11b/g (DSSS) 2.4GHz specification
- Data rate supports up to 54Mbps
- Build-in DHCP server for providing a dynamic IP address to PCs and other devices

- Supports WEP / WPA Personal / WPA2 Personal encryption
- Supports AP/ Client/ Repeater/ WDS/ AP+WDS mode
- Seamlessly integrate wireless and wired networks
- Provides MAC Filter function
- Web-based configuration

1.3 LED Indicators

WAP-4036	WLAN ACT	ACT	LAN INK	 LAN 100M 	o sys	ර

LED	Action	Function
PWR		This indicator lights green when the Wireless AP is receiving power;
	ON	otherwise, it is off.
		The LED will be dark for a few seconds when the system is started. After
eve	ON	that, the LED will stays green to show the Wireless AP is working normally. If
515		the LED stays blink or dark, it means the system is failed. Please try to
		reboot the system or restore default settings.
LAN 100M	ON	Indicates the Ethernet is working in 100Mbps mode.
LAN LNK	ON	Indicates the LAN is connected.
LAN ACT	Flashing	Indicates the LAN has activity with data sending or receiving.
WLAN ACT	Flashing	Indicates wireless interface has activity with data sending or receiving.

1.4 Back View



Power (DC 9V): The receptacle where you plug in the power adapter.

Reset button: Resets your AP or resets the AP to the default login settings.

To reset the AP to the factory defaults, press and hold the Reset button for more than five seconds. This clears the AP's user settings, including User ID, Password, IP Address, and Subnet mask. (Warning: your original configurations will be replaced with the factory default settings).

LAN Port: The port connects the AP to your PC. You can configure your AP through the connection.

Antenna: The antenna used for wireless connections. You are able to rotate the antenna to gain the best signal reception.

1.5 Wireless Performance

The following information will help you utilizing the wireless performance and operating coverage of WAP-4036.

1. Site selection

To avoid interferences, please locate WAP-4036 and wireless client away from transformers, microwave ovens, heavy-duty motors, fluorescent lights and other industrial equipments. Keep the number of walls or ceilings between AP and clients as few as possible. Otherwise the signal strength may be seriously reduced. Place WAP-4036 in an open space or add additional WAP-4036 as needed to improve the coverage.

2. Environmental factors

The wireless network is easily affected by many environment factors. Every environment is unique with different obstacles, construction materials, weather, etc. It is hard to determine the exact operation range of WAP-4036 in a specific location without testing.

3. Antenna adjustment

The bundle antenna of WAP-4036 is adjustable. Firstly install the antenna pointing straight up, then smoothly adjust it if the radio signal strength is poor. But the signal reception is definitely weak in some certain areas, such as location right down the antenna.

Moreover, the original antenna of WAP-4036 can be replaced with other external antennas to extend the coverage. Please check the specification of the antenna you want to use, and make sure it can be used on WAP-4036.

4. WLAN Type

If WAP-4036 is installed in an 802.11b and 802.11g mixed WLAN, its performance will reduced significantly. Because every 802.11g OFDM packet needs to be preceded by an RTS-CTS or CTS packet exchange that can be recognized by legacy 802.11b devices. This additional overhead lowers the speed. If there are no 802.11b devices connected, or if connections to all 802.11b devices are denied, the WAP-4036 can operate in 11g-only mode and its data rate should actually 54Mbps.

Chapter 2 Hardware Installation

Before you proceed with the installation, it is necessary that you have enough information about the WAP-4036.

- Keep the access point as central in your work area as possible. Signal strength and speed fall off with distance.
- Higher is often better. For instance, set it up on the top shelf of a bookcase rather than the bottom one, if possible.

Prior to connecting the hardware, make sure to power off your Ethernet device and Wireless Access Point (AP). Then follow the steps below to connect the related devices.

- Step 1: Connect your computer to the LAN port of WAP-4036 by using RJ-45 cable. Attach one end of the Ethernet cable with RJ-45 connector to your hub, switch or a computer's Ethernet port, and the other end to one of the LAN ports of your AP.
- Step 2: Assemble the antenna to WAP-4036. Try to place them to a position that can best cover your wireless network. The antenna's position will enhance the receiving sensitivity.
- **Step 3: Connect the power adapter.** Connect the single DC output connector of the power adapter to the power jack on the side of the AP. Then plug the Power Adapter into an AC outlet.
- Step 4: Power on the following devices in this order: HUB or Switch, AP, and PCs



ONLY use the power adapter supplied with the WAP-4036. Otherwise, the product may be damaged. If you want to reset your WAP-4036 to default settings, press the Reset button 5 second. Then release the button and wait for 10 seconds for rebooting.

Chapter 3 Web Configuration

Web configuration provides a user-friendly graphical user interface (web pages) to manage your WAP-4036. An AP with an assigned IP address (e.g. <u>http://192.168.1.1</u>) will allow you to monitor and configure (via web browser e.g., MS Internet Explorer or Netscape).

- 1. Open your web browser.
- Enter WAP-4036 IP address (default IP address is <u>http://192.168.1.1</u>) into the address field of the web browser. Please also make sure your PC's IP address is in the same IP range with WAP-4036.

http://192.168.1.1/ - Microsoft Internet Explorer			
<u> E</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp			
🕝 Back - 🕤 - 💌 🗟 🏠 🔎 Search 👷 Favorites	Ø	8.	»
Address 🕘 http://192.168.1.1/	~	🔁 Go	Links »
			~
			4
E Done	🌒 Inte	rnet	



 A User Name and Password dialog box will appear. Please enter your User Name and Password here. The User Name and Password are "guest" by default. Click "OK" to access the management page.

Connect to 192	.168.1.1 💽 🔀
	GE
192.168.1.1 User name: Password:	Remember my password
	OK Cancel

3.1 Status

This page will show most of the basic configuration parameters of the WAP-4036. It is the first page

shown after login as below. You can usually get context sensitive help by clicking on the Help link at the top right of the page.

WAP-4036	Status	Witzard Save He
) Status	LAN Status	
Radio	Physical Address	00-30-4F-14-41-42
Security	LAN IP Address	192.168.1.1
MAC Filter	Subnet Mask	255.255.255.0
WDS	Wireless Status	
Advanced	Wireless	Enabled
) Client Info	Connection	Associated Wireless Station: 1
Site Survey	MAC	00-30-4F-14-41-42
o one ourvey	Radio Band	802.11b/g
⊖IP Config	SSID	416test
Dhop Server	Channel	6
MISC	Mode	AP
	Security	WPA2 Personal
	SYSTEM INFO.	
	SYSTEM INFO	
	Edition Info	AP-M14H-V1.1.67EN-Planet(WAP-4036),2007.10.22.17.42.

Parameter	Descriptions
	This section shows the LAN interface parameters of the wireless AP. This
LAN Status	includes information such as: The MAC address of LAN interface, IP/Subnet
	Mask, DHCP Server (whether the DHCP Server is Enables or disables, and
	display address pool).
	This section shows the WLAN interface parameters of the wireless AP. This
	includes information such as: Wireless (whether Wireless interface status is
Wireless Status	active), Connection (whether have active wireless stations that are connecting
Wireless Status	to the AP and display number of them), The MAC address of WAN interface,
	Radio Band (The type of transmission protocol your wireless network uses),
	SSID, channel number, security.
System Information	This section shows the installed version of the firmware of the WAP-4036.
System mormation	And company information.



To apply any settings you've altered on any page, click the Save button. Otherwise the modified settings would be lost after the AP reboot.

3.2 Radio

The basic settings for wireless networking are set on this screen.

WAP-4036	Radio	Wizard Save Hel
Status	Basic Setting	
Radio	Disabled Wireles	s Apply
Security		
MAC Filter	Radio Band	802.11b/g 💌
WDS	Radio Mode	AP
Advanced	Booster Mode	Enabled this mode can enhance the throughput of data transmission.
Client Info	After configing basic p	parameters,Please config Authentication and Encryption mode,to setup Valid and
Site Survey	SSID	416test
IP Config	Broadcast SSID	
Dhcp Server	Channel	
MISC	Ghainei	Angly
		Арріу

Parameter	Descriptions			
Disabled Wireless	Select this option will disable the wireless operation of WAP-4036.			
	The default setting is mixed mode [802.11B/G]. If you do not know or have			
	both 11g and 11b devices in your network, please keep the default setting in			
Radio Band	mixed mode. From the drop-down manual, you can select 802.11G if you			
	have only 11G card. If you have only 802.11 B card, select 802.11B mode.			
	The AP has 5 modes: AP, Client, Repeater, WDS, AP+WDS.			
	Note 1: if WDS or AP+WDS is selected, please go to "WDS" page to configure			
Radio Mode	related settings.			
	Note 2: when WAP-4036 is in Client mode, it allows only one Ethernet device			
	for connection.			
Booster Mode	Enabled this mode can enhance the throughput of data transmission.			
	The SSID is the network name shared among all points in a wireless network.			
	The SSID must be identical for all devices in the wireless network. It			
0010	case-sensitive and must not exceed 32 characters (use any of the characters			
3310	on the keyboard). Make sure this setting is the same for all points in your			
	wireless network. For added security, you should change the default SSID			
	(default) to a unique name.			

	This setting will not appear in WDS mode.				
	When wireless clients survey the local area for wireless networks to associate				
	with, they will detect the SSID broadcast by the AP. To broadcast the AP				
Broadcast SSID	SSID, keep the default setting, Enable. If you do not want to broadcast the AP				
	SSID, then select Disable.				
	Select the channel used for wireless communication. There are 11				
Channel	overlapping channels. Channels 1, 6 and 11are non-overlapping. The default				
Channel	is channel 6.				
	This setting will not appear in Client and Repeater modes.				

• Click "Apply" when you have finished the configuration above.

3.3 Security

This wireless AP provides complete wireless LAN security functions; include WEP, WPA with pre-shared key and WPA2 with pre-shared key. With these security functions, you can prevent your wireless LAN from illegal access. Please make sure your wireless stations use the same security function.

PLANET	54Mbps WAP-4036 802	IIG WITELESS	Access Point	
WAP-4036	Security Setup			Wizard Save
⊖ Status	Security Configurat	ion		
○ Radio	Authentication Type		WPA2 Personal	
 Security 	Accessorial Authentication & Encryption		None	
○MAC Filter ○WDS	Pre-Shared Key		WPA Personal WPA2 Personal WPA&WPA2 Personal	
O Advanced	Key Format	Please input 8-6	3 characters	
⊖ Client Info	KEY	1234567890qw	ertyuiopASDFGHJKL:	
⊖ Site Survey	Rekey Time (sec)	86400		
⊖ IP Config			Apply	
O Dhop Server				
OMISC				

3.3.1 NONE

Transmit data without encryption and authentication. This is the default option.

Security Configuration

Authentication Type	None
	Apply

• Click "Apply" when you have selected the "None".



If you select none, any data will be transmitted without Encryption and any station can access the wireless AP.

3.3.2 WEP

WEP (Wired Equivalent Privacy) is an encryption method used to protect your wireless data communications. WEP uses a combination of 64-bit or 128-bit keys to provide access control to your network and encryption security for every data transmission.

C manufacturing	WAP-4036	Easy to Install, Simple to Use		i hankana i i
WAP-4036	Security Setup	1		Wizard Save
Status	Security Con	figuration		
⊃Radio	Authentication	Гуре	WEP	~
) Security	Accessorial Authentication & Encryption		Open System 👻	
⊃MAC Filter ⊃WDS	WEP		Open System Shared Key Auto Select	
Advanced	KEY Length	◯ 64 bits 💿 1 28 k	pits	
O Client Info	WEP Mode	⊙ HEX O ASCI		
∋Site Survey	Key 1	0		
) IP Config	Key 2	123456789012345678	8901234	Key format is 26 Hex-Number,
Dhop Server	Key 3	0		every Hex-Number can be U-9 and A-F
OMISC	Key 4	0		

Parameter	Descriptions
Open-System	No authentication is used. But uses WEP encrypt data packets.
	Authentication is a process in which the AP validates whether the wireless
Share-keys	client is qualified to access the AP's service. You must enable WEP function
	and define your WEP keys. The keys are used both to authenticate wireless

	clients and encrypt outgoing data.	
	It can detect Wireless Client authentication information, and automatically	
	choose Open-System or Share-Keys mode to communicate with client. When	
Auto-Select	use Auto-Select mode, you must setup WEP keys which are used by	
	authentication system.	
	Selects 64-bit or 128-bit WEP encryption. Be sure that the key length setting	
KEY Length	in the AP shall be the same as in wireless clients, or the communication will	
	not work.	
	You may select ASCII Characters or Hexadecimal Digits (in the "A-F", "a-f"	
VVEP Mode	and "0-9" range) to be the WEP Key.	
Kov 1 1	Enter one to four WEP keys in either ASCII or Hexadecimal format. You can	
ney 1~4	use 64 bits or 128 bits as the encryption algorithm.	

• Click "Apply" at the bottom of the screen to save the above configurations..

	When using Hexadecimal format, only digits 0-9 and letters A-F, a-f are allowed. Vali				
•	key length for each encryption type is as below:				
	Key Length HEX Format ASCII Format				
<u> </u>	64 Bits	10 hexadecimal digits	5 ASCII characters		
	128 Bits	26 hexadecimal digits	13 ASCII characters		

3.3.3 WPA Personal

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 and AES to change the encryption key frequently. This can improve security very much.

Networking & Communication	WAP-4036 Easy to 2	Install, Simple to Use		
WAP-4036	Security Setup			Wizard Save H
Status	Security Configurat	ion		
Radio	Authentication Type		WPA Personal	*
Security	Accessorial Authentic	ation & Encryption		
MAC Filter WDS	Pre-Shared Key		TKIP AES	
Advanced	Key Format	Please input 8-6	3 characters	
Client Info	KEY	1234567890		
Site Survey	Rekey Time (sec)	86400		
IP Config			Apply	
Dhen Server				

Parameter	Descriptions	
	Temporal Key Integrity Protocol (TKIP) utilizes a stronger encryption algorithm	
TKIP	and includes Message Integrity Code (MIC) to provide protection against	
	hackers.	
AES	Advanced Encryption System (AES) utilizes a symmetric 128-Bit block data	
AES	encryption. It's the strongest encryption currently available.	
	The WPA Pass Phrase is used to authenticate and encrypt data transmitted in	
Key Format	the wireless network. The input format is in character style and key size	
	should be in the range between 8 and 63 characters.	
KEV	Enter the key value. Data is encrypted using a 256Bit key derived from this	
	key. Other Wireless Stations must use the same key.	
	Specifies the timer the WPA key must changes. The change is done	
Rekey Time (Sec)	automatically between the server and the client. The default value is 86400.	

• Click "Apply" at the bottom of the screen to save the above configurations..

3.3.4 WPA2 Personal

The WPA2 is a stronger version of WPA. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses AES to change the encryption key frequently. This can improve security very much.

SPLANET	54Mbps WAP-4036 802 Easy to 3	IIG WIRELESS	Access Point	
WAP-4036	Security Setup			Wizard Save Help
⊖ Status	Security Configurat	ion		
○ Radio	Authentication Type		WPA2 Personal	*
○ Security	Accessorial Authentication & Encryption		AES 🔽	
⊖MAC Filter ⊖WDS	Pre-Shared Key			
○ Advanced	Key Format	Please input 8-63	characters	
○ Client Info	KEY	1234567890qwe	rtyuiopASDFGHJKL:	
⊖ Site Survey	Rekey Time (sec)	86400		
○ IP Config ○ Dhcp Server ○ MISC			Apply	

Parameter	Descriptions		
AES	Advanced Encryption System (AES) utilizes a symmetric 128-Bit block data		
	encryption. It's the strongest encryption currently available.		
	The WPA Pass Phrase is used to authenticate and encrypt data transmitted in		
Key Format	the wireless network. The input format is in character style and key size		
	should be in the range between 8 and 63 characters.		
KEV	Enter the key value. Data is encrypted using a 256Bit key derived from this		
	key. Other Wireless Stations must use the same key.		
Rekey Time (sec)	Specifies the timer the WPA key must changes. The change is done		
	automatically between the server and the client. The default value is 86400.		

• Click "Apply" at the bottom of the screen to save the above configurations.

3.3.5 WPA & WPA2 Personal

Auto-Select WPA/WPA2 can detect Wireless Client authentication information, and automatically choose WPA or WPA2 mode to communicate with client. Operation is the same as WPA or WPA2.

	54Mbps WAP-4036 802.	Ilg Wireless Access Point
WAP-4036	Security Setup	Wizard Save Help
⊖ Status	Security Configurati	on
○Radio	Authentication Type	WPA&WPA2 Personal
○ Security ○ MAC Filter	Pre-Shared Key	
OWDS	WPA	⊙TKIP ○AES
○ Advanced	WPA2	⊙ AES
○ Client Info	KEY Mode	Please input 8-63 characters
⊖ Site Survey	WPA Pass Phrase	1234567890
○ IP Config	WPA2 Pass Phrase	1234567890qwertyuiopASDFGHJKL:
ODhcp Server	Rekey Time (sec)	86400
○MISC		Apply

• Click "Apply" at the bottom of the screen to save the above configurations..

3.4 MAC Filter

This Wireless AP has the capability to control the wireless client access based on the MAC address of the wireless client. The user has the flexibility to customize your own control policy based on these options:

PLANET Rebusiting & Commerciantes	54Mbps WAP-4036	802.11g Wirel	ess Access Point	
WAP-4036	MAC Filter	7		Wizard Save He
Status	Wireless Ac	cess Control Configur	ation	
Radio	Enable 1	Aireless Access Control		Apply
Security	Defined items in MAC list are PERMITTED to connect AP, others are DENIED			
MAC Filter	Defined items in MAC list are DENIED to connect AP, others are PERMITTED			MITTED
WDS	MAC			
Advanced Client Info	Description			Add
Site Survey	ID	MAC	Description	Delete
IP Config Dhcp Server	1	00-40-F4-F8-56-03	pci	Delete
MISC				

Parameter	Descriptions
Enable Wireless Access Control	To enable Wireless MAC Filter, click the check box. The
	default is "disable".
Defined items in MAC list are PERMIT	You can choose a default operation for your factual
to connect AP, others are DENIED.	security or management consideration
Defined items in MAC list are DENIED	
to connect AP, others are PERMIT.	
MAC	Enter the MAC Address of a station.
Description	Enter the Comment of station.

- After enter all necessary fields and click "Add", the wireless station will be added into the" Current Access Control List".
- If you want to remove specific stations from the "Current Access Control List ", select the MAC addresses in the list and then click "Delete ".

3.5 WDS

You can set the wireless Bridge MAC here. The bridge uses to connect between more than 2 APs. The maximum number setting is for six wirelesses Bridge MAC.

	54Mbps WAP-4036	802.11g Wireles Easy to Install, Simple to Use	ss Access Point	
WAP-4036	WDS			Wizard Save Help
⊖ Status	Wireless Bri	dge Configuration		
⊖ Radio	Wireless Brid	Ige MAC		
⊖ Security	Description			Add
	Current Wire	eless Bridge Information	1	
O Advanced	No	MAC	Description	Delete
 Site Survey IP Config Dhep Server MISC 				

Parameter	Descriptions	
Wireless Bridge MAC	If the operating mode of your AP is "WDS" or "AP+WDS",	

	you should have a setting in Wireless Bridge MAC. Enter	
	the MAC address of target access point. Moreover, the	
	target access point must be "WDS" or "AP+WDS" as well.	
Description	Enter the Comment of station.	
	You can see the basic information of all wireless bridge	
Current wireless Bridge Information	devices. And you can delete any wireless bridge in the list.	

3.6 Advanced

This tab is used to set up the AP's advanced wireless functions. These settings should only be adjusted by an expert administrator as incorrect settings can reduce wireless performance.

WAP-4036 Advanced Wizard Status Advanced Setting Radio Beacon Interval 100 (20-1000 ms) Security RTS Threshold 2347 (256-2432) MAC Filter DTIM Period 1 (1-255)	ave H			
Status Advanced Setting Radio Beacon Interval 100 (20-1000 ms) Security RTS Threshold 2347 (256-2432) MAC Filter DTIM Period 1 (1-255)				
Padio Beacon Interval 100 (20-1000 ms) Security RTS Threshold 2347 (256-2432) MAC Filter DTIM Period 1 (1-255)				
Security RTS Threshold 2347 (256-2432) MAC Filter DTIM Period 1 (1-255)				
DTIM Period 1 (1-255)				
OWDS				
Transmit Rate Auto				
Advanced Preamble Type O Long O Short O Auto				
Client Info 802.11g protection O CTS O RTS/CTS O Disabled				
Apply	Apply			

Parameter	Descriptions
	This value indicates the frequency interval of the beacon. A beacon is a packet
Decess Interval	broadcast by the wireless AP to keep the network synchronized. A beacon
Beacon Interval	includes the wireless LAN service area, a time stamp, Delivery Traffic Indicator
	Maps, and the Traffic Indicator Message (TIM). The default value is 100.
DTO Threehold	This value should remain at its default setting of 2,347. Should you encounter
RTS Threshold	inconsistent data flow, only minor modifications are recommended.
	This value indicates how often the Access Point sends out a Delivery Traffic
	Indication Message (DTIM). Lower settings result in more efficient networking,
DTIM Interval	while preventing your PC from dropping into power saving sleep mode. Higher
	settings allow your PC to enter sleep mode, thus saving power, but interferes
	with wireless transmissions.
Transmit Rate	The "Transmit Rate" is the transmit data rate limitation for this wireless AP. The

	wireless AP will use the highest possible selected transmission rate to transmit			
	the data packets. The default value is "Auto".			
	It defines the length of CRC block in the frames during the wireless			
Preamble Type	Communication. "Short Preamble" is suitable for heavy traffic wireless			
	network. "Long Preamble" provides much communication reliability			
	This is also called CTS Protection. It is recommended to enable the protection			
802.11g Protection	mechanism. This mechanism can decrease the rate of data collision between			
	802.11b and 802.11g wireless 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 transmitted.			

3.7 Client Info

You can see the status of all active wireless stations that are connecting to the wireless AP.

PLANET Investing & Commerciation	54M WAP-	4036 802.11g	NITELESS Imple to Use	Acces	s Poin	t		
WAP-4036	Client	Info				Wiza	rd)	Save Hel
Status	Assoc	iation Table						
Radio	No	MAC Address	Status	Band	Rate	Signal Quality	RSSI	Power Save
Security	1	00-18-E7-20-C9-D8	Associated	b/g	54M	29	51	No
MAC Filtor	2	00-40-F4-F8-56-D3	Associated	b/g	54M	31	74	No
MAC FILLEI	3	00-15-00-41-F0-54	Associated	b/g	54M	60	49	No
Advanced <u>Client Info</u> Site Survey IP Config Dhcp Server MISC				Refres	h			

• To see the latest information, click Refresh button.

3.8 Site Survey

This page displays information about other APs in the area. The user can select a "clean" channel to avoid the interferences from other stations.

WAP-4036	Site Survey				(W	fizard Save	He
Statue	Current Wireless Netw	vork					
Judia							
Radio	SSID	BSSID	Channel	Type	Band	Encryption	Signal
Security	aetc	00-13-46-ed-91-12	6	AP	802.11g	WPA	2%
MAC Filter	EXTRALAN	00-0a-79-65-f7-30	6	AP	802.11g	WEP	2%
WDS	SMC	00-13-f7-1d-4a-c7	6	AP	802.11g	NONE	25%
Advanced	default	08-10-74-15-12-d9	6	AP	802.11g	WEP	77%
Auvalieeu	Neo13	00-30-4f-11-11-11	9	AP	802.11g	WEP	65%
Client Info	WANG40	00-30-4f-41-44-14	9	AP	802.11g	WPA	45%
Site Survey	GLOBALHOME	00-13-d4-9e-eb-cb	11	AP	802.11g	WEP	27%
IP Config	iohn	00-30-4f-3c-c6-25	11	AP	802.11a	WEP	10%

Button	Descriptions
Defrech	After click "Scan" button, please click "Refresh" button to show the wireless
Refresh	station information.
Scan	Click this button to search for available Access Points in the neighborhood.
leie	When WAP-4036 is in Client mode, you can select one AP from the above list
Join	and click "Join" button to make connection.

• To see the latest information, click Refresh button.

3.9 IP Config

The Wireless Access Point communicates with the wired/wireless clients through its LAN port. The IP Config page allows you to define the IP address settings over the LAN interface.

	54Mbps WAP-4036 B02 Easy to	.11g Wireless Access Poin	nt
WAP-4036	IP Config		Wizard Save Help
○ Status	LAN Setup		
O Radio	O Dynamic IP User	t.	
○ Security	• Static IP User		
⊖ MAC Filter	IP Address	192.168.1.1	
OWDS	Subnet Mask	255.255.255.0	
○ Advanced	Gateway	0.0.0	1.5
⊖ Client Info			
○ Site Survey		117	
O IP Config			
O Dhop Server			
OMISC			

Parameter	Descriptions
	Enter the IP address, Subnet mask and Gateway for the Wireless Access
IP Address/Subnet Mask/Gateway	Point LAN port. All local wired/wireless devices communicate with the device
	through this port. It is also the IP address of the Web-based Configuration
	Utility. By default, the IP address, Subnet mask and Gateway of the LAN port
	is 192.168.1.1, 255.255.255.0 and 0.0.0.0 respectively.

• Click "Apply" when you have finished the configuration above. And the wireless AP will be automatically restarted if you change the LAN IP address.



If you change the private IP address and apply the changes, the PC from which you configure the AP will lose the communication to the AP. To reconnect, you will need to renew the IP address of the PC or change to an IP address compatible with the new LAN port IP address.

3.10 DHCP Server

3.10.1 DHCP Setup

The DHCP server can be ON or OFF in this screen. If you choose to set this device as a DHCP server, it will assign IP addresses to its clients.

PLANET	S4Mbps WAP-4036 Eas	JZ.11g Wi y to Install, Simple	reless Access Po	int	
WAP-4036	Dhcp Setup	IP Reserve	Dhcp Info	Wizard Save Help	
⊖ Status	DHCP Setup		ಕೆಸಿ ಲೆಂ		
○ Radio	DHCP Server	on			
○ Security	IP Pool	192.168	.1. 2 192.168.1.	102	
O MAC Filter	Lease Time	0 minutes (0 means 1 day)			
OWDS	Gateway	192.168.	1.1		
Advanced	Static DNS1				
O Client Info	Static DNS2				
O Site Survey	Charle Divide		Apply		
Offection			[Obbil		
OMISC					

Parameter	Descriptions
DHCP Server on	Setting DHCP server available or not.
	The DHCP pool range is changeable. You can designate a particular IP
IP Pool	address range for your DHCP server to issue IP addresses to your LAN
	Clients.
	The DHCP Server will temporarily assign IP addresses to LAN clients. In the
Lease Time	Lease Time setting you can specify the time period that the DHCP Server
	lends an IP address to your LAN client. The DHCP Server will change your
	LAN client's IP address when this time threshold period is reached.
Gateway	Specify the gateway IP in your network.
Static DNS1~2	The IP address of ISP's DNS (Domain Name Service) Server.

3.10.2 IP Reserve

Set the IP address you want to reserve for specific stations here.

	54Mbps WAP-4036	802.11g Wir Easy to Install, Simple I	eless Access	Point	
WAP-4036	Dhcp Setup	IP Reserve	Dhcp Info	Wizard	Save Help
⊖ Status	IP Address R	eservation			
○ Radio	Descript				
○ Security	MAC Address				
○ MAC Filter	IP Address	192.1	68.1.		
OWDS			bbA		
⊖ Advanced					
O Client Info	ID	Descript	IP Address	MAC Address	Delete
O Site Survey					
O Dhop Server					
OMISC					

Parameter	Descriptions	
Descript	Enter the Comment of station.	
MAC Address	Input the MAC address of the computer or network device (total 12 characters,	
	with character from 0 to 9, and from a to f, like '001122aabbcc')	
IP address	Input the IP address you want to assign to this computer or network device.	

- Click "Add", then the wireless station will be added into the" Current Access Control List" below.
- If you want to remove some MAC address from the "IP address Reservation ", select the MAC addresses in the list and then click "Delete ".

3.10.3 DHCP Info

You can view the status of all DHCP clients here.

Dhcp Setup	IP Reserve	Dhcp Info	Wizard Save Help
DHCP Cli	ent Info		
ID	IP Address	MAC Address	Status
1	192.168.1.34	00-30-4F-dd-ee-aa	Static

3.11 MISC

PLANET Reventing & Consentration	54Mbps WAP-4036 802.11g Wireless Access Point Easy to Install, Simple to Use
WAP-4036	MISC Wizard Save Help
○ Status	Login ID & Password Setup
O Radio	Login name is "guest"
O Security	New Password Apply
O MAC Filter	Confirm New Password
○ WDS ○ Advanced	Restore Default / Restart System
O Client Info	Restore Default Restart System
○ Site Survey ○ IP Config	Firmware Upgrade
O Dhcp Server	Current Version: AP-M14H-V1.1.67EN-Planet(WAP-4036),2007.10.22.17:42.
○ MISC	New Firmware File: Upgrade Upgrade

3.11.1 Login ID & Password Setup

In factory setting, the default password is "guest". You can change the default password to ensure that no one can adjust your settings without your permission. Every time you change your password, please record the password and keep it at a safe place.

Login ID & Password Setup

Login name is "guest"	
New Password	Apply
Confirm New Password	

Parameter	Descriptions	
New Deseward	Enter the password (up to 15-digit alphanumeric string) you want to login to the	
New Password	Access Point.	
Confirm New	Enter your new password again for verification purposes.	
Password		

• Click "Apply" at the bottom of the screen to change the password.



If you forget the password, you'll have to reset the AP to the factory default (Password is "guest") with the reset button.

3.11.2 Restore Default / Restart System

Restore Factory Defaults -- To clear all of the AP's settings and reset them to its factory defaults.

Restart System -- reboot the AP.

Restore Default / Restart System

Restore Default	Restart System
-----------------	----------------

3.11.3 Firmware Upgrade

To upgrade the firmware of your AP, you need to save 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 use the Browse button to find the firmware file on your PC.

Firmware Upgrade

Current Version:	AP-M14H-V1.1.67EN-Planet	(WAP-4036),2007.10	0.22.17:42.
New Firmware File:		Browse	Upgrade

Chapter 4 Configuring Local Networking

You can manage the Wireless Access Point through the Web browser. To configure the device via Web browser, at least one properly configured computer must be connected to the device via Ethernet (recommended) or wireless network. The Wireless Access Point is configured with the default IP address of 192.168.1.1 and subnet mask of 255.255.255.0 and its DHCP server is disabled by default.

4.1 Assigning a Static IP Address in Windows XP/2000

Control Panel File Edit View Favorites Tools Help 🕝 Back 👻 🕥 👻 🏂 🔎 Search 📂 Folders 🛛 🞹 🗸 Address 🔂 Control Panel P d Ó Ż H -1 P G, Control Panel Automatic Updates Game Controllers Accessibility Add Hardware Add or Administrative Date and Time Display Folder Options Fonts 🔂 Switch to Category View Remov... Options Tools 1 Ø 3 6 S \$ See Also Internet Java Keyboard Mouse Network work Setup Phone and Power Options Printers and Regional and 🍓 Windows Update Options Connection Wizard Modem Faxes Language ... () Help and Support S **S** 1 (0) 07 23 Scheduled Scanners and Security Sound Effect Sounds and Speech System Taskbar and User Accounts Windows Cameras Tasks Center Manager Audio Devices Start Menu Firewall Wireless Network Set...

Step 1: Go to Start \rightarrow Settings \rightarrow Control Panel.

Step2: Right click your mouse to "Local Area Connection.



Step3: Click "Properties" button.

eneral Support		
Connection		
Status:		Connected
Duration:		20:34:42
Speed:		100.0 Mbps
Activity	Sent — 📝	Received
Bytes:	6,961,779	67,242,617
Properties	Disable	

Step4: Click "Internet Protocol (TCP/IP).

🕹 Local	Area Connection Properties	?×
General	Authentication Advanced	
Connec	ct using:	
BB N	Marvell Yukon 88E8053 PCI-E Gigabi	e
This c <u>o</u>	onnection uses the following items:	
	Client for Microsoft Networks File and Printer Sharing for Microsoft Networks QoS Packet Scheduler Internet Protocol (TCP/IP)	
	Install Uninstall Propertie	IS
Tran wide acros	smission Control Protocol/Internet Protocol. The defail a area network protocol that provides communication sss diverse interconnected networks.	ult
I Shoj I Noti	w icon in notification area when connected ify me when this connection has limited or no connecti	ivity
	ОКС	ancel

Step5: With the window below, please click "Use the following IP address" and "Use the following DNS server addresses", and then fill in the IP address and subnet mask. (The IP addresses on your network must be within the same range. For example, if one computer has an IP address of 192.168.1.25, the other computers should have IP addresses that are sequential, like 192.168.1.3 and 192.168.1.4. The subnet mask must be the same for all the computers on the network.)

eneral	
You can get IP settings assigned this capability. Otherwise, you ne the appropriate IP settings.	i automatically if your network supports ed to ask your network administrator fo
🔿 Obtain an IP address autom	natically
💿 Use the following IP addres	S
IP address:	192 . 168 . 1 . 25
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192.168.1.1
Obtain DNS server address	automatically
• Use the following DNS serv	er addresses:
	168 95 1 1
Preferred DNS server:	100.00.11.1

Step 6: Press OK to close the Local Area Connection Properties window.

4.2 Additional Settings for Wireless Client

If you chose to access the AP via a wireless client, also verify the following:

- Step 1: Make sure your PC is equipped with 802.11g or 802.11b wireless adapter and has appropriate WLAN card driver/utility and TCP/IP installed.
- Step 2: Set the wireless adapter to use appropriate TCP/IP settings as described in previous section.
- Step 3: Launch the wireless adapter's provided utility and verify that your wireless client is configured

with these settings:

- Operation Mode: Infrastructure
- SSID: default
- Authentication: Disabled
- Encryption: Off
- Radio Band: 802.11B/G



If you only finished the wireless settings and didn't configure the wireless adapter's TCP/IP settings, even your link status indicates a successful connection with the AP. This connection applies to the "physical" network layer only. Your wireless adapter cannot communicate with the AP. Make sure to set the TCP/IP properties as described in this previous section.

4.3 Checking PC's IP and Connection with the AP

After configuring the TCP/IP protocol, use the ping command to verify if the computer can communicate with the AP. To execute the ping command, open the DOS window and PING the IP address of the Wireless Access Point at the DOS prompt:

- For Windows 98/Me: Start -> Run. Type "command" and click OK.
- For Windows 2000/XP: Start -> Run. Type "cmd" and click OK.

A window similar to this one will appear. Type **ping xxx.xxx.xxx**, where **xxx** is the **IP address** of the wireless router or access point. A good wireless connection will show four replies from the wireless router or access point, as shown below. This is showing that the connection between the AP and your computer has been successfully established.

🖎 C:\TIMOTS\system32\cmd. exe	
C:\Documents and Settings\Freddy>ping 192.168.1.1	
Pinging 192.168.1.1 with 32 bytes of data:	
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64	
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64	
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64	
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64	
Ping statistics for 192.168.1.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% lo	ss),
Approximate round trip times in milli-seconds:	
Minimum = Oms, Maximum = 1ms, Average = Oms	
C:\Documents and Settings\Freddy>_	-

If the computer fails to connect to the AP, the Command window will return the following:

ex C:\TINDOTS\system32\cmd.exe	_ 🗆 🗵
C:\Documents and Settings\Freddy>ping 192.168.1.1	
Pinging 192.168.1.1 with 32 bytes of data:	
Request timed out. Request timed out. Request timed out. Request timed out.	
Ping statistics for 192.168.1.1: Packets: Sent = 4, Received = 0, Lost = 4 (100%	loss)
C:\Documents and Settings\Freddy>	•

Please verify your computer's network settings are correct and check the cable connection between the AP and the computer.

Appendix A Specification

Standard	IEEE 802.11b / 802.11g / IEEE 802.3 / IEEE 802.3u
Frequency Band	2.400~2.4835GHz
Transfer Rate	802.11g: 54/48/36/24/18/12/9/6Mbps
	802.11b: 11/5.5/2/1Mbps
Modulation	OFDM, CCK, QPSK and BPSK
Sensitivity	 54Mbps OFDM, 10% PER, -68dBm
	 48Mbps OFDM, 10% PER, -69dBm
	 36Mbps OFDM, 10% PER, -75dBm
	 24Mbps OFDM, 10% PER, -79dBm
	 18Mbps OFDM, 10% PER, -82dBm
	 12Mbps OFDM, 10% PER, -84dBm
	 11Mbps CCK, 8% PER, -82dBm
	 9Mbps OFDM, 10% PER, -87dBm
	 6Mbps OFDM, 10% PER, -88dBm
	 5.5Mbps CCK, 8% PER, -85dBm
	 2Mbps QPSK, 8% PER, -86dBm
	 1Mbps BPSK, 8% PER, -89dBm
Antenna	Detachable dipole antenna
Transmit Power	15dBm±2dBm
Wireless Operating Range	 Indoors- up to 328ft (100M) Outdoors- up to 1312ft (400M)
	Note. Environmental factors may affect actual range
LAN Interface	1-port RJ-45 UTP
LED Indicators	6: PWR, SYS, LAN 100M, LAN LNK, LAN ACT, WLAN ACT
Power	9V DC, 700mA
Temperature	0 ~ 55°C (Operating)
Humidity	0 ~ 95%, non-condensing (Operating)
Dimension	186 x 119 x 29mm
Weight	200g
Emission	FCC Class B, CE-mark

Appendix B Frequently Ask Question

This chapter provides answers to problems usually encountered during the *installation* and operation of the *Wireless Network Access Point*. Read the description below to solve your problems.

Q. Can I run an application from a remote computer over the wireless network?

A. This is depending on whether or not the application is designed to be used over a network. Consult the application's user guide to determine if it supports operation over a network.

Q. Can I play games with other members of the cordless network?

A. Yes, as long as the game supports multiple plays over a LAN (local area network). Refer to the game's user guide for more information.

Q. What is the IEEE 802.11g standard?

A. The IEEE 802.11g Wireless LAN standards subcommittee, which is formulating a standard for the industry. The objective is to enable wireless LAN hardware from different manufactures to communicate.

Q. What IEEE 802.11 features are supported?

- A. The product supports the following IEEE 802.11 functions:
 - CSMA/CA plus Acknowledge protocol
 - Multi-Channel Roaming
 - Automatic Rate Selection
 - RTS/CTS feature
 - Fragmentation
 - · Power Management

Q. What is Infrastructure?

A. An integrated wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

Q. What is Roaming?

A. Roaming is the ability of a portable computer user to communicate continuously while moving freely throughout an area greater than that covered by a single Wireless Network Access Point. Before using the roaming function, the workstation must make sure that it is the same channel number with the Wireless Network Access Point of dedicated coverage area.

Q. When WAP-4036 works with AP+WDS mode, can wireless clients connect to it?

A. Yes, this mode is acting as an AP and Bridge at the same time, so the wireless client can access to AP+WDS mode WAP-4036 without problem. When wireless client connect to the remote site via AP+WDS mode, the performance will be 50%, just like connect to main AP via a repeater.

Q. How much wired client can connect to Client mode WAP-4036?

A. Only 1 wired client can connect to a WAP-4036 in Client mode. If the local network has more than 1 wired PC need to connect via wireless, please set WAP-4036 to WDS mode. The WDS mode is designed for connecting multiple wired LANs.

Q. Is WAP-4036 WDS mode compatible with other WDS (Bridge) mode device?

A. It only can work with PLANET WRT-416 since they are using the same chipset. Because there is no wireless standards define for this special operating mode (WDS) so far, it is suggested to use the same devices to construct a WDS network.

Q. I cannot access the Web-based Configuration Utility from the Ethernet computer used to configure the AP.

A. Please check the following conditions to verify the correct operation of the AP:

- Check that the LAN LED is on. If the LED is not on, verify that the cable for the LAN connection is firmly connected.
- Check whether the computer resides on the same subnet with the AP's LAN IP address.
- If the computer acts as a DHCP client, check whether the computer has been assigned an IP address from the DHCP server. If not, you will need to renew the IP address.
- Use the ping command to ping the AP's LAN IP address to verify the connection.
- Make sure your browser is not configured to use a proxy server.
- Check that the IP address you entered is correct. If the AP's LAN IP address has been changed, you should enter the reassigned IP address instead.

Q. My wireless client cannot communicate with another Ethernet computer.

A. Please check the follow settings:

- Ensure the wireless adapter functions properly. You may open the Device Manager in Windows to see if the adapter is properly installed.
- Make sure the wireless client uses the same SSID and security settings (if enabled) as the Wireless Access Point.
- Ensure that the wireless adapter's TCP/IP settings are correct as required by your network administrator.
- If you are using an 802.11b wireless adapter, and check that the 802.11b Mode item in Wireless Basic Setting page, is not configured to use 802.11g Performance.

• Use the ping command to verify that the wireless client is able to communicate with the AP's LAN port and with the remote computer. If the wireless client can successfully ping the AP's LAN port but fails to ping the remote computer, then verify the TCP/IP settings of the remote computer.