

USI FlankerPro2 Wireless Access Point User Guide (Model : AP-AG-AT-02)

Draft Version V0.1

Corporate Headquarters

Universal Scientific Industrial Co., Ltd.

<http://www.usi.com.tw>

Tel: 886-59-2350876

Fax: 886-49-2351093

Published OCT, 2003

FCC Information

This equipment has been tested and found to comply with the limits for a Class A digital devices pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable , protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at this own expense.

The user should not modify or change this equipment without written approval from company name. Modification could void authority to use this equipment.

For the safety reason, people should not work in a situation which RF Exposure limits be exceeded. To prevent the situation happening, people who work with the antenna should be aware of the following rules:

- 1). In case the accesspoint is operating with its integral antenna, or when operating with range extender model AIN-WB-OD-B, position the system in such a way, that 20cm separation can be secured between antenna and human body.
- 2). When using any other antenna, which is not mentioned under 1), special measures have to be taken: the antenna must be installed by a professional and situated in a location where a distance of 1m can be secured towards any human body. Read the external antenna intallation documentation for essential details regarding conditions and operation.
- 3). While installing the antenna in the location, please always turn off the power of the accesspoint.
- 4). While the device is working, please do not contact the antenna.

Product variants that support 5.15 ~ 5.25 GHz frequency range, are not equipped with external antenna connector and are restricted for indoor use only!

The transmitter must not be co-located or operate in conjunction with any other antenna or transmitter.

We declare that AP-AG-AT-01 (Flanker Pro Single Radio AP) is limited in the 2.4GHz band on CH1~11 by specified firmware controlled in USA.

Copyright

Copyright © 2003 all rights reserved. No part of this publication may be reproduced, adapted, stored in a retrieval system, translated into any language, or transmitted in any form or by any means without the written permission of the supplier.

About This Manual

The purpose of this manual is for the setup of the 802.11a/g switchable Wireless LAN Access Point. This manual includes procedures assisting you in avoiding unforeseen problems.

Technical Support

Universal Scientific Industrial Co., Ltd.

Address : 141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

Tel : + 886-49-2350876, 2325876

Fax : +886-49-2329561, 2337360

E-mail : usi@ms.usi.com.tw

Technical Support in the US

Address : 3590 Peterson Way, Santa Clara, CA 95054, USA

Tel : +1-408-986-6589

Fax : +1-408-432-0440

E-mail : alex_lee@ms.usi.com.tw ; altliao@ms.usi.com.tw

Contents

1.Introduction.....	3
1.1 Feature and Benefits	
1.2 Applications	
1.3 System Configurations	
2. Content of Product Kit.....	
2.1 Before You Start	
2.2 System Requirements	
2.3 Mechanical Description	
2.4 Hardware Installation	
3. Configure The Access Point	
3.1 Using the Access Point Utility	
3.2 Using the Web Management	
3.3 Using the Telnet	
4. TroubleShooting	
Appendix A Glossary	

Chapter 1 Introduction

The next-generation wireless LAN device – 54Mbps Wireless Access Point, are specially designed for Enterprise applications, offering campus-wide connections between buildings at a speed of up to 54Mbps.

With simply one or two Access Points and wireless adaptors, users can build a clean and neat wireless network in offices without too much effort. With a wireless networking environment, everyone can get the access to the Internet anytime, anywhere in offices.

Going wireless has advantages: It relieves you of the chore of drilling holes and snaking Ethernet wires through walls and floors. Going wireless has advantages for desk-bound purchase, too: It relieves you of the chore of drilling holes and snaking Ethernet wires through walls and floors. In the wireless environment, you can pick up your notebook with a wireless PC Card installed, and get free to read e-mail, download files or surf the Web while sitting anywhere.

With several Access Points, users can solve the problem to build LANs in frequently changed environments, such as open space, show rooms, meeting rooms, and manufacturing sites that are frequently rearranged. With embedded Mini-PCI cards, and wireless PC cards, it is convenient for mobile workers such as doctors, nurses, and sales to get access to existed databases and networks anytime anywhere.

Fully compliant with IEEE802.11a/g standard, the Wireless Access Point provides powerful features such as the Windows-based configuration utility, MAC address filtering, WEP security and more.

1-1 Features and Benefits

- Detachable antenna allows you for the use of external high gain antenna.
- With a data rate of 54 Mbps, the system is faster than an E1/T1 data link.
- Fully IEEE 802.11a/g compatible. Allow inter-operation among multiple vendors.
- Technique operating in the unlicensed 2.4GHz & 5GHz ISM band.
- Seamless roaming within the 802.11a & 802.11g wireless LAN

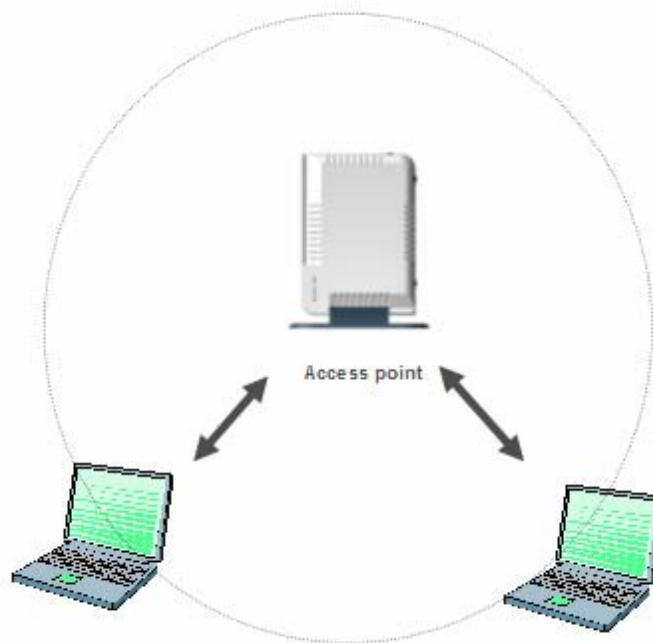
infrastructure.

- Provides user authentication to enforce tight security.
- MAC address control.
- Highly efficient antenna provides a range of operation up to 800 feet in free space.
- Easy to install and friendly to user, just plug and play!
- Provides Window-based configuration utility.
- Tight design with light weight, compact size, and low power consumption.

1-2 Applications

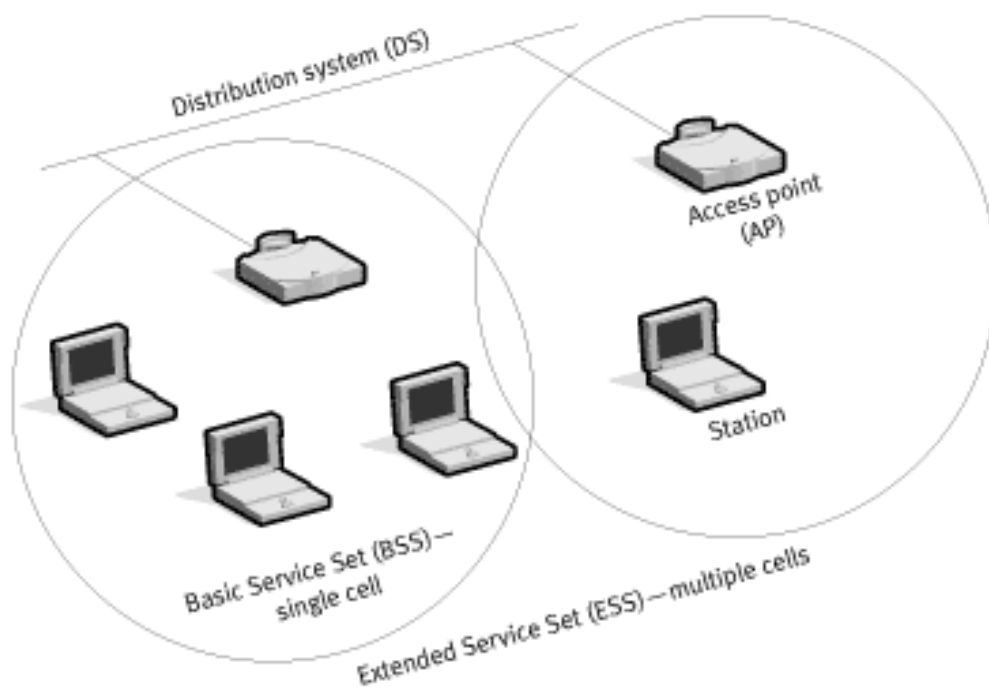
Wireless Infrastructure

In a wireless infrastructure, the access point acts as a bridge. The access point connects the wireless clients together. The Access Point acts as a center point for all wireless communications. This would increase efficiency of the communications since the wireless adapters do not need to be within direct range of each other.



Wireless Infrastructure with Stations Attaching to a Wired LAN

The 802.11a/g WLAN Access Point will provide an access to the local LAN. LAN integration of wireless and wired LAN is called an Infrastructure configuration. A group of wireless LAN PC users and an Access Point construct a Basic Service Set (BSS). Each wireless PC in this BSS can talk to each other on your network via the Access Point.



1-3 System Configurations

The 802.11a/g Access Point can be configured in a variety of network system configurations.

Chapter 2 Hardware Installation.

This chapter describes initial setup of the Access Point.

2-1 Content of Product Kit

Before installation, make sure that you the following items:

-
- **One FlankerPro2 Wireless Access Point**
 - **One quick installation guide**
 - **One power adapter**
 - **One product CD**
-

Caution: Please verify the power adapter is correct according to the country. If there is any missing or improperly functioning item, please contact your local supplier.

If any of the above items are not included or damaged, please contact your local dealer for support.

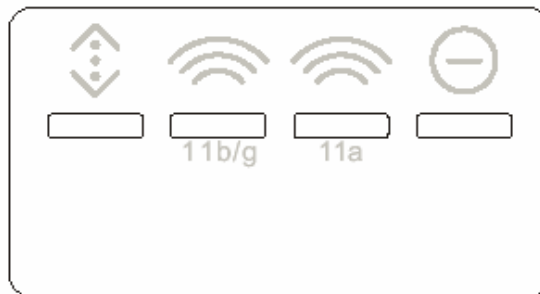
2-2 System Requirements

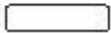
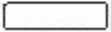
Installation of the Wireless LAN Access Point requires:

1. An AC power outlet (100~240V, 50~60Hz) which supplies the power for the Access Point.
2. A 10/100 Base-T (UTP) Ethernet cable drop.

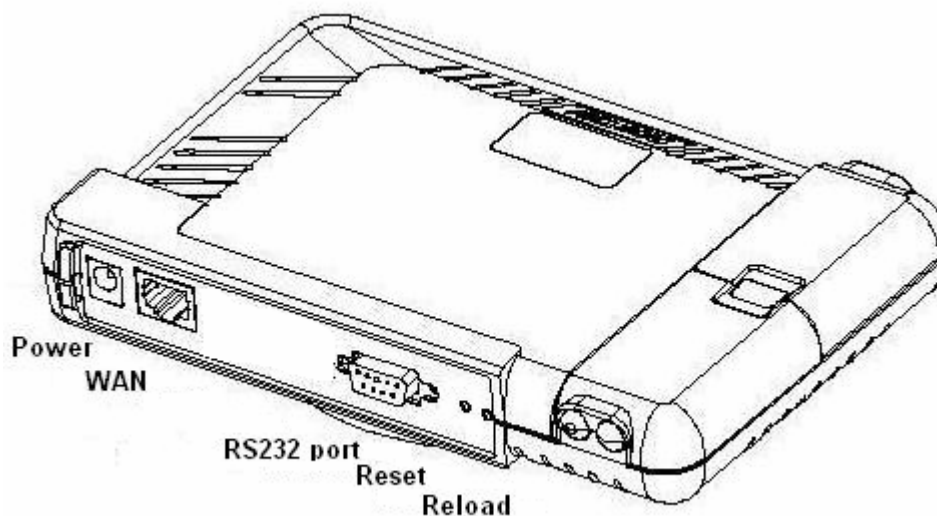
2-3 Mechanical Description

Top panel of FlankerPro2 Access Point:



LED Icon	Port	State	Indicator
 	Power	On*	Green
 	WAN Port	Link Active (combined with 10/100 status)	Flash Yellow per 10 Mbps packet, Green per 100 Mbps packet
 	Wireless LAN (Gateway only)	Link Active (combined with 10/100 status)	Flash Yellow per 10 Mbps packet, Green per 100 Mbps packet

Back panel of the Access Point:



Power

The power adapter plugs into the socket labeled “POWER”.

Ethernet Ports (WAN port)

The WLAN Access Point supports one Ethernet port: RJ-45 MDI daisy-chain port ,also labeled “MDI”. You may connect the Access Point either to a hub or a PC. Please note that, use the cross-over cable when you desire to connect the Access Point to a PC. The two LEDs (10/100/Link) next to the Ethernet ports indicate the Ethernet physical link status. The ‘Link’ LED is a good indicator to see if you have proper Ethernet connection.

RS232 Port

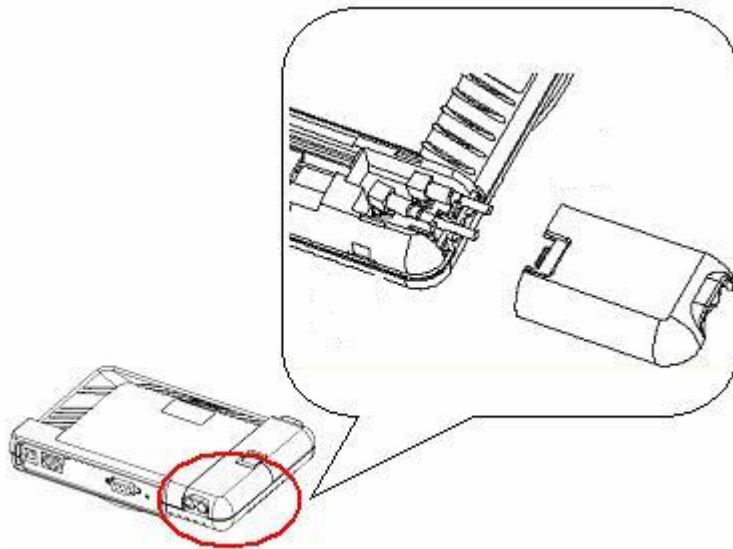
Users may connect a RS232 cable to a server to configure the server console.

Reload

NOTE: The button labeled “Reload” enables you to restore the Access Point’s default setting. This is used when you forget the password. Please detach the DC power plug and press the “**Reload**” button on the back panel of the Access Point. Reconnect the power and keep holding the button in for a few seconds until the “**AP**” LED indicator blinks. This will restore the Access Point’s default settings and enable you to configure the Access Point via utility, telnet or Web again.

Reset

NOTE: The button labeled “Reset” enables you to restart the Access Point. This is used when the system is Halt. Please press the “**Reset**” button on the back panel of the Access Point.
of the Access Point.



Antenna Connector

The Wireless LAN Access Point supports extension range antennas. To connect the extension antennas, please open the case and install the hardware.

2-4 Hardware Installation

Take the following steps to set up your Access Point.

Site Selection

Before installation, determine the Access Point location. Proper placement of the Access Point is critical to ensure optimum radio range and performance. You may use the Site Survey and Access Points Browser utility (The utilities came with the wireless PC Card) to choose a proper placement for your Access Point. Typically, the best location to place your Access Point at your site is the center of your wireless coverage area. Try to place your mobile stations within the line of sight. Obstructions may impede performance of the Access Point.

Connect the Ethernet Cable

The 802.11a/g WLAN Access Point supports 10/100M Ethernet

connection. Attach your UTP Ethernet cable to the RJ-45 connector on the Access Point and then connect the other end of the RJ-45 cable to a hub or a station. Please use a cross-over cable when you desire to connect the Access Point to a PC.

Connect the Power Cable

Connect the power adapter to the power socket on the 802.11a/g Access Point, and plug the other end of the power into an electrical outlet. The Access Point will be powered on and all 6 indicators on the top panel will flash in sequence to test the functionality of the indicators.

NOTE: ONLY use the power adapter supplied with the Access Point. Otherwise, the product may be damaged.

Chapter 3 Configuring the Access Point

The 54Mbps Wireless LAN Access Point is shipped with default parameters, which will be suitable for the typical **infrastructure wireless LAN**. Just simply install the Access Point, power it on, and it is now ready to work. Nevertheless, you can still adjust configuration settings depending on how you would like to manage your wireless network. The 54Mbps Wireless Access Point allows for configuration either via the configuration utility, known as Access Point Manager, TCP/IP (Telnet) connection or Web Management.

3-1 Using the Access Point Utility

Installed on your Windows 95/98/NT/ME/2000 desktop computer, the Windows-based utility “**Access Point Manager**” provides a user-friendly interface. The Access Point Manager enables you to configure all of your Access Points on the network more easily than ever before. The following gives instructions guiding you through the installations of the Access Point Manager utility.

1. Insert the Software and Documentation CD into the CD-ROM drive, or the floppy disk that came with your product kit into the floppy drive on your computer.
2. From the Start menu on the Windows desktop, choose **Run**.
3. In the Run dialog box, type the path where the utility is located, then click **OK**. For floppy installation: **A:\setup**.
4. Follow the on-screen instructions to install the Access Point Manager.
5. Upon completion, go to **Program Files** and execute the Access Point Manager. It will begin to browse all the Inter-Building Access Points available on the network.

3-2 Using the Web Management

The built-in Web Management provides you with a user-friendly graphical user interface (web pages) to manage your Access Points. An AP with an assigned IP address (e.g. <http://192.168.1.1>) will allow you via web browser (e.g., Netscape Navigator 3.0 ~ 4.5 or MS Internet Explorer 4.0) to monitor and configure the Access Point.

1. Open your web browser.
2. Enter the IP address of your Inter-Building Access Point in the Address field (e.g. <http://192.168.1.1>). You will have access to the **Access Point Web Pages** of the Access Point.

3. Enter the password to login to the Inter-Building Access Point. The default password is **default**. The main page will show up.

3-3 Using the Telnet

Chapter 4 Troubleshooting

If you have trouble using the Wireless LAN Access Point, the starting point to troubleshoot the problem you're your Access Point is looking at the LED activity of the Access Point. The following is "LED Error Table" provided to assist you in diagnosing and solving operational problems.

PWR	LAN	WLAN	Description	Action	Note

If you are still unable to solve the problem by checking the LED activity, the error may be caused from configuration mismatch, which prevents the Access Point from establishing a wireless connection with the network. You may check the following to ensure normal operation of the Inter-Building Access Point.

- . *WEP keys*: If data encryption is activated, always remember to set WEP keys exactly the same on the Access Point as are on the wireless stations.
- . *Access Control*: Make sure that the MAC address of your Inter-Building Access Point is not included in the Access Control table of other wireless devices.

Appendix A Glossary

Access Point - An internetworking device that seamlessly connects wired and wireless networks.

Ad-Hoc - An Ad-Hoc wireless LAN is a group of computers each with wireless adapters, connected as an independent wireless LAN.

Backbone - The core infrastructure of a network. The portion of the network that transports information from one central location to another central location where it is off-loaded onto a local system.

Base Station - In mobile telecommunications, a base station is the central radio transmitter/receiver that maintains communications with the mobile radio telephone sets within range. In cellular and personal communications applications, each cell or Inter-Building cell has its own base station; each base station in turn is interconnected with other cells' base.

Bridge - An internetworking function that incorporates the lowest 2 layers of the OSI network protocol model.

BSS - Stands for "Basic Service Set," an Inter-Building Access Point and all the wireless clients that associated with it.

ESS - Stands for "Extended Service Set." More than one BSS can be configured as an Extended Service Set. Mobile users can roam between BSS in an ESS.

Ethernet - A popular local area data communications network, originally developed by Xerox Corp., which accepts transmission from computers and terminals. Ethernet operates on 10 Mbps baseband transmission over shielded coaxial cable or over shielded twisted pair telephone wire.

Infrastructure - An integrated wireless and wired LAN is called an Infrastructure configuration.

PCMCIA - Personal Computer Memory Card International Association, which develops standards for PC cards, formerly known as PCMCIA cards, are available in three "types" which are about the same length and width as credit cards, but range in thickness from 3.3 mm (Type I) to 5.0 mm (Type II) to 10.5 mm (Type III). These cards can be used for many functions, including memory storage, landline modems and wireless modems.

Roaming - A wireless clients around an ESS and get the continuous connection to the Infrastructure network.

RTS Threshold – Transmitters contending for the medium may not hear each other. RTS/CTS mechanism can solve this "Hidden Node Problem". If the packet size is smaller than the preset RTS Threshold size, the RTS/CTS

mechanism will NOT be enabled.

Web Management - Network management by using web browser connecting to the target devices.