



www.zcom.com.cn

Air access

# ZDC Dual-RF Outdoor Wireless Access

# ZA-5000-D

User's Manual

== CONFIDENTIAL (All right reserved by ZDC) ==





# Copyright

There is no any clear or implicit assurance in the user's manual of our company, including the assurance of selling or installing for the special purpose. There are rival's volumes to carry on the power to alter or revise in our company, if alter and forgive me for not issuing a separate notice. You can't duplicate any content of this manual by the written permission of our company.

# **Registered trademark**

ZDC and Air access are the trademark of Nanjing Z-com Wireless Co., Ltd. All other trade marks appearing copyrights are reserved by other companies in this manual.

# **FCC Information**

This equipment has been tested and found to comply with the limits for Class 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:

Install the antenna in a location where a distance of 20cm from the antenna may be maintained. While installing the antenna in the location, please do not turn on the power of wireless card. While the device is working, please do not contact the antenna.

# About the manual

The purpose to use this manual is for install the Wireless Outdoor Bridge. This manual is including disposing course and method and helping the customer to solve the unpredictable problem.

ZDC ZA-5000-D User's Manual 2005.4

== CONFIDENTIAL (All right reserved by ZDC) ==



# **Table of Contents**

COPYRIGHT	2
REGISTERED TRADEMARK	2
FCC INFORMATION	2
ABOUT THE MANUAL	2
1. ZA-5000-D INTRODUCTION	5
APPEARANCE OF PRODUCT	
FEATURES AND BENEFITS	
REPRESENTATIVE APPLICATION	
System Requirement	
2. HARDWARE INSTALLATION	7
Product Kit	
HARDWARE INSTALLATION	
3. CONFIGURING ZA-5000-D	9
USING THE WEB MANAGEMENT	9
General	
LAN SETUP	
WIRELESS1 SETUP	
WIRELESS1 SECURITY	
WIRELESS2 SETUP	
WIRELESS2 BRIDGE SETUP	
WIRELESS2 SECURITY	
WEP SETUP	
MAC CONTROL SETUP	
LINK TEST	
MANAGEMENT	
CHANGE PASSWORD	
FIRMWARE UPGRADE	
BACKUP/RESTORE	
REBOOT	
INFORMATION	
STATION LIST	
STATISTICS	
4.TROUBLESHOOTING	
FAQ	
TECHNICAL SUPPORT	
APPENDIX	



#### www.zcom.com.cn

TECHNICAL SPECIFICATIONS	
GLOSSARY	32
ASCII	



# 1. ZA-5000-D Introduction

- Appearance of Product
- Features and Benefits
- Representative Application
- System Requirement

The next-generation Broadband Wireless Access device – ZA-5000-D Dual-RF Outdoor Wireless Access Point, Simultaneously works as 5GHz Bridge and 2.4GHz Access Point. The new features and benefits are: support POE (power over Ethernet); support testlink, use this utility, you can place the antenna in the best place. Surface packing is full block out and with waterproof function. The Access Point provides powerful features.

### **Appearance of Product**



### **Features and Benefits**

The Access Point's Wireless 1 works as 5GHz Bridge. The Access Point's Wireless 2 works as 2.4GHz AP. The Access Point has a build-in 23dBi 5GHz antenna and an N type connector. MAC address control Easy to install and friendly to user, just plug and play Provides Web-based configuration utility Tight design with lightweight, compact size, and low power consumption Support power over Ethernet Waterproof and can place into outdoor directly Test-link utility, help you place your antenna at the best place

### **Representative Application**

The Access Point offer a fast, reliable, cost-effective solution for wireless client access to the network in applications like these:

Remote Access to Corporate Network Information
 E-mail, file transfer and terminal emulation.
 == CONFIDENTIAL (All right reserved by ZDC) ==



◆ Difficult-to-Wire Environments

Historical or old buildings, asbestos installations, and open area where wiring is difficult to deploy.

◆ Frequently Changing Environments Retailers, Manufacturers and those who frequently rearrange the workplace and change location.

◆ Temporary LANs for Special Projects or Peak Time

Trade shows, exhibitions and construction sites where a temporary network will be practical; Retailers, airline and shipping companies need additional workstations during peak period; Auditors requiring workgroups at customer sites.

◆ Access to Database for Mobile Workers

Doctors, nurses, retailers, accessing their database while being mobile in the hospital, retail store or office campus.

◆ SOHO (Small Office and Home Office) Users SOHO users need easy and quick installation of a small computer network.

♦ High Security ConnectionThe secure wireless network can be installed quickly and provide flexibility.

### **System Requirement**

Installation of the Access Point requires:

- A RJ-45 connector, supports the transfer rate of 10/100 bps data.
- ♦ A PC of install the following WEB browsers, Microsoft Internet Explorer 6 and fix Service Pack 1 or the newer patch and wrapped up Q323308.

•	Notice: Please use more than Microsoft IE 6. 0!

• One 48V, 1A power module, in order to power supply of the Access Point.



# 2. Hardware Installation

#### Product Kit

Hardware Installation

### **Product Kit**

Before installation, make sure that you the following items: ZA-5000-D\*1 DC Injector\*1 Product CD\*1 Power Adapter\*1 Fixed settings\*1

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

### **Hardware Installation**

Take the following steps to install the Access Point.

#### ♦ Hardware equipment



#### ♦ Fixation

First you should fix the Access Point, the following figure show it:



#### ◆ Connect the Ethernet Cable

The Access Point supports 10/100M Ethernet connection. Attach UTP Ethernet cable to the RJ-45 connector on the Access Point. Then connect the other end of the RJ-45 cable to a hub or a == CONFIDENTIAL (All right reserved by ZDC) ==



www.zcom.com.cn

station.

#### Put UTP cable through the water-joint



Make the RJ-45 connector:

white orange | orange white green | blue white blue | green white brown | brown



Plug water-joint into the Access point, and close the water-joint.



Notice: For protected integrated 23dBi gain antenna of wireless1, Surface of device
was placed plastic protective pellicle, when you use device, please rip away.

Notice: Wireless2 of device need additional high gain antenna, you may select
appropriate antenna by real situation, and suggest that there has long distance
between antenna of wireless1 and antenna of wireless2 for preventing interference.





# 3. Configuring ZA-5000-D

- Using the Web Management
- General
- LAN Setup
- Wireless1 Setup
- Wireless1 Security
- Wrieless2 Setup
- Wireless2 Bridge Setup
- Wireless2 Security
- Link Test
- Management
- Information

### Using the Web Management



#### Picture1 Enter

The built-in Web Management provides you a user-friendly graphical user interface. The Access Point allows you via web browser (MS Internet Explorer 6.0) to monitor and configuration. Run Web Explorer, Enter default IP Address (**192.168.0.228**) of the Access Point in the Address field. Enter default User Name (**admin**) and default Password (**password**), Click Login button. The == CONFIDENTIAL (All right reserved by ZDC) ==



main page will show up.

The Access Point allows configuration only via Web.

## General

D) • (0) http://192	168.0.228/start.htm	◆ 输入中文,直接增加 2 2转	刘 新报" 第4 合 ·
ZDC	Air access	ZA-5000-D Home Jual-RF Outdoor Wireless Access Point	Help Ext
TICOTING	General information		
neral N Setup Mirelocii 1 Setup	Access Point Information Access Point Information Wireless 1 MAC Address	ZDC2236M	
Bridge Setup WEP Mreleos2 Setup Basic Setup	Wireless2 MAC Address Country / Region Firmware Version	00.60/93/22/36/FE China 1.0.4 (Apr 1 2005)	
Bridge Setup WEP MAC Control k Test Management	Current IP Settings IP Type IP Address Subnet Mask Default Gateway	STATIC 192.168.0.228 255.255.255.0 192.168.0.254	
Change Password Fornware Upgrade Backup/Restore Reboot rformation	Current Wireless1 Settings Wireless1 Mode Wireless1 Channel / Frequency Wireless1 WEP	Bridge (Point-to-Point) 149757450Hz Disable	
Station List Statistics	Current Wireless2 Settings Wireless2 Mode Wireless2 Network Name (SSID) Wireless2 Channel / Frequency Wireless2 WEP	Access Point vincent 11 / 2.462GHz Dissble	

Picture2 General

The Access Point General Information page displays current settings and statistics for your Access Point. As this information is read-only, any changes must be made on other pages.

Access Point Information: General information.

#### **Current IP Settings:**

These are the current settings for IP address, Subnet Mask, Default Gateway and DHCP settings.

#### **Current Wireless1 Settings:**

These are the current settings for the Access Point's Wireless1.

#### **Current Wireless2 Settings:**

These are the current settings for the Access Point's Wireless2.



# LAN Setup

2) • (4) http://192.168	1.0.228/start.htm	4 如天中文,直接建立。	19931 1993 " Aller 🖒
ZDC	Air acces	ZA-5000-D Home Dual-RF Outdoor Wireless Access Point	Help Ex
	IP Settings		
noral N Setup Virelecci Setup	Access Point Name	ZDC2239ef	
Pridge Setup WEP Pridleos2 Setup Bridge Setup Bridge Setup WEP MAC Control k Test Assagement Change Password Firmware Upgrade Backup/Restore Reboot Hormation Station List StationList	IP Settings IP Settings IP Type IP Address Subnet Mask Default Gateway	STATIC       192, 168, 0, 228       265, 265, 265, 265, 0       192, 168, 0, 254       Apply       Cancel	
	Nanjing 2559	Mandate Control - Summarian Control - La	

Picture3 IP Settings

The default values are suitable for most users and situations.

#### **Access Point Name:**

This unique name is the access point NetBIOS name. You may modify the default name with a unique name up to 15 characters long.

Default: ZDCxxxxx, where xxxxx represents the last 6 digits of the Access Point card1's MAC address.

#### **IP Type:**

By default, The Access Point is set IP Type to STATIC. The access point will get the IP address, subnet mask and the default gateway settings automatically from the DHCP server if DHCP is enabled.

#### **IP Address:**

Type the IP address of the Access Point (Default: 192.168.0.228).

#### **IP Subnet Mask:**

The Access Point will automatically calculate the subnet mask based on the IP address that you assign. Otherwise, you can use 255.255.255.0 as the subnet mask.

== CONFIDENTIAL (All right reserved by ZDC) ==



#### **Default Gateway Address:**

The Access Point use this IP address as default router gateway for any traffic beyond the local network.

# Wireless1 Setup

181E(D) - (D) http://192.3	8.0.228/start.htm	÷ 1	a大中文,直加增索 🚬 24%	1 新班 " Sha 🗇 ·
ZDC	Airoccess	ZA-5000-D Dual-RF Outdoor Wireless Access Point	Home	Help Exit
	Wireless1 Settings			
LAN Setup Umelace1 Setup Umelace1 Setup	Country / Region Channel / Frequency Data Rate Output Power RTS Threshold (0-2346) Fragmentation Threshold (258-2346) Preamble Type Remote MAC Address	China 149 / 1 Best 2346 2346 (? Long	C Auto	
Fornware Upgrade     Dackup/Restore     Reboot		Apply Cancel		
<ul> <li>Station List</li> <li>Statistics</li> </ul>				

Picture 4 Wireless1 Settings

#### **Country/Region:**

Select your country or region from the drop-down list. This field displays the region of operation for which the wireless interface is intended. It may not be legal to operate the Access Point in a country/region other than the country/region shown here. If your country or region is not listed, please check with your local government agency or check our website for more information on which channels to use.

Default: China

۲

#### **Channel/Frequency:**

Select the channel you wish to use on your wireless LAN. Default: 149

Note: If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels to see which is the best.



#### **Data Rate:**

Shows the available transmit data rate of the wireless network. The possible data rates supported are: 6 Mbps, 9 Mbps, 12 Mbps, 18 Mbps, 24 Mbps, 36 Mbps, 48 Mbps and 54 Mbps. Default: Best.

#### **Output power:**

Shows the available transmit power of the access point. The possible Tx power options are: Full, 50%, 25%, 12.5%, minimum. The transmit power may varies depends on the local regulatory regulations.

Default: Full.

#### **RTS Threshold:**

Request to Send Threshold. The packet size that is used to determine if it should use the CSMA/CD (Carrier Sense Multiple Access with Collision Detection) mechanism or the CSMA/CA mechanism for packet transmission. With the CSMA/CD transmission mechanism, the transmitting station sends out the actual packet as soon as it has waited for the silence period. With the CSMA/CA transmission mechanism, the transmitting station sends out an RTS packet to the receiving station, and waits for the receiving station to send back a CTS (Clear to Send) packet before sending the actual packet data.

Default: 2346

#### **Fragmentation Threshold:**

This is the maximum packet size used for fragmentation. Packets larger than the size programmed in this field will be fragmented. The Fragment Threshold value must be larger than the RTS Threshold value.

Default: 2346

#### **Preamble Type:**

A long preamble may provide a more reliable connection or slightly longer range. An auto preamble gives better performance.

Default: Long

#### **Remote MAC Address:**

You must enter the MAC address of the other Bridge-mode Wireless Station in the field provided.



# Wireless1 Security

tt (D) •	68.0.228/start.htm	€ MA4	文,直接開始,文,	特如 新班 " 界。	
ZDC	Air occess	ZA-5000-D Jual-RF Outdoor Wireless Access Point	Home	Help	Exit
	Security Settings				
General LAN Satup Mineless1 Satup • Bridge Satup • WEP	WEP Authentication Type Encryption Strength	Open System Nation			
Wreless2 Setup Basic Setup Bodge Setup WEP MAC Control Link Tost Management Change Pasaward Firmware Upgrade	Security Encryption (WEP) Knys Passphrase: Key 1: @ Key 2: @ Key 3: @ Key 3: @ Key 4: @	cute Keyu			
Backup/Resture     Rebott     Reformation     Station List     Statistics		Apply Cancel			
	Naning 2-50M	Verdage Co. 144	8		

Picture5 Wireless1 WEP

#### WEP:

Enable or Disable the Wired Equivalent Privacy for data encryption.

#### **Encryption Strength:**

Select the desired option. If enabled (64 bit, 128 bit or 152 bits) the keys must be entered, and other wireless stations must use the same keys. Note that 64-bit and 128-bit are the standard encryption strength options. 152-bit key length is a proper mode that will only work with other wireless devices that support this mode.

Default: None

#### Security Encryption(WEP) Keys:

To use the "passphrase" to generate the keys, enter a character and click the "Generate Keys" button. You can also enter the keys directly. These keys must match the other wireless stations. Key 1 Key 2 Key 3 Key 4

Select the key to be used as the default key. Data transmissions are always encrypted using the default key. The other keys can only be used to decrypt received data.



# Wireless2 Setup

(D) • 10 http://192.1	68.0.228/start.htm	· · · · · · · · · · · · · · · · · · ·
ZDC	Air occess Dual-BF Outd	00-D Home Help Exit poor Wireless Point
	Wireless2 Settings	
eneral AN Satup Wireless1 Setup Bridge Setup	Access Point Mode Wirelets Network Name (SSID)	Bridge Mode
Weeless2 Setup Basic Setup Bodge Setup WEP MAC Control mk Test	Operating Mode Channel / Frequency Data Rate Output Power	11a Only • 149 / 5.745GHz • Best • Full •
Management Change Password Fernwere Upgrede Backup/Resture Reboot Information Station List Statistics	RTS Threshold (0-2346) Fragmentation Threshold (256-2346) Beacon Interval (20-1000) DTIM Interval (1-255) Wireless Separator Broadcast Wireless Network Name (SSID) Preamble Type	2346 2346 100 ms 1 C Yes C No C Yes C No C Long C Auto
	Insk	v Cancel

#### **Picture6 Wireless1 Settings**

#### **Access Point Mode:**

You may select Access Point Mode of wireless2 in drop list. The device support AP Mode, Bridge Mode, AP + Bridge Mode.

Default: Bridge Mode.

#### Wireless Network Name (SSID):

Enter a 32-character (maximum) service set ID in this field; the characters are case sensitive. When in infrastructure mode, this field defines the service set ID (SSID). The SSID assigned to the wireless node is required to match the SSID in order for the wireless node to communicate with the Access Point.

Default: ZDC

#### **Country/Region:**

Select your country or region from the drop-down list. This field displays the region of operation for which the wireless interface is intended. It may not be legal to operate the Access Point in a country/region other than the country/region shown here. If your country or region is not listed, please check with your local government agency or check our website for more information on which channels to use.

== CONFIDENTIAL (All right reserved by ZDC) ==



#### Default: China

#### **Operating Mode:**

You may select Operating Mode of wireless2 in drop list. The device support 802.11a, 802.11g, 802.11b. Default: 802.11a.

#### **Channel/Frequency:**

Select the channel you wish to use on your wireless LAN. Default: 149



Note: If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels to see which is the best.

#### Data Rate:

Shows the available transmit data rate of the wireless network. The possible data rates supported are: 1 Mbps, 2 Mbps, 5.5 Mbps, 11 Mbps, 6 Mbps, 9 Mbps, 12 Mbps, 18 Mbps, 24 Mbps, 36 Mbps, 48 Mbps and 54 Mbps.

Default: Best.

#### **Output power:**

Shows the available transmit power of the access point. The possible Tx power options are: Full, 50%, 25%, 12.5%, minimum. The transmit power may varies depends on the local regulatory regulations.

Default: Full.

#### **RTS Threshold:**

Request to Send Threshold. The packet size that is used to determine if it should use the CSMA/CD(Carrier Sense Multiple Access with Collision Detection)mechanism or the CSMA/CA mechanism for packet transmission. With the CSMA/CD transmission mechanism, the transmitting station sends out the actual packet as soon as it has waited for the silence period. With the CSMA/CA transmission mechanism, the transmitting station sends out an RTS packet to the receiving station, and waits for the receiving station to send back a CTS (Clear to Send) packet before sending the actual packet data.

Default: 2346

#### **Fragmentation Threshold:**

This is the maximum packet size used for fragmentation. Packets larger than the size programmed in this field will be fragmented. The Fragment Threshold value must be larger than the RTS Threshold value.

Default: 2346

#### **Beacon Interval:**



The Beacon Interval, Specifies the interval time between 20ms and 1000ms for each beacon transmission.

Default: 100

#### **DTIM:**

The Delivery Traffic Indication Message, Specifies the data beacon rate between 1 and 255. Default: 1

#### Wireless Separator:

The remote aps will not be able to communicate with each other if this feature is enabled. Default: No

#### **Broadcast Wireless Network Name (SSID):**

If set to Yes, The Access Point will broadcast its SSID, allowing wireless stations which have a "null" (blank) SSID to adopt the correct SSID. If set to No, the SSID is not broadcast. Default: Yes

#### **Preamble Type:**

A long preamble may provide a more reliable connection or slightly longer range. An auto preamble gives better performance.

Default: Long



# Wireless2 Bridge Setup

ZA-S000-D Dual-RF Outdoor Wireless Access Point       Home       Help       Exit         Welcome       Bridge Settings       Image: Statup       Image: Statup	(D) * 10 http://192.16	0.0.226/start.htm		← 加入中文:	直接投票 医	(>转到 新报 **	Stre B .
Bridge Settings         Semeral LAN Sytup         Wireless1 Setup         Wireless1 Setup         Wreless2 Setup         Wireless2 Setup         Wireless2 Setup         Bodge Setup         Remote MAC Address 3         Remote MAC Address 5         Remote MAC Address 7         Remote MAC Address 8         Remote MAC Address 8         Bodge Setup         Bodge Set	ZDC	Air occess	ZA-5000-D Dunl-RF Outdoor Wireless Access Point		Home	Help	Exit
Herreral AN Sytup     Remote MAC Address 1     Mbps       Witeless1 Satup     Remote MAC Address 2     Mbps       Witeless2 Sutup     Remote MAC Address 3     Mbps       Bissic Satup     Remote MAC Address 4     Mbps       Bissic Satup     Remote MAC Address 5     Mbps       Bissic Satup     Remote MAC Address 4     Mbps       Bissic Satup     Remote MAC Address 5     Mbps       Remote MAC Address 6     Mbps     Mbps       Remote MAC Address 7     Mbps       Remote MAC Address 8     Mbps       Remote MAC Address 8     Mbps       Remote MAC Address 8     Mbps       Primeware Upgrade     Mbps       Remote MAC Address 8     Mbps       Apply     Cancel		Bridge Settings					
Backup/Restore     Reboot     Apply     Cancel     Information     Station Last     Station	eneral NN Sytup Witeless1 Setup Bridge Setup WEP Datic Setup Bridge Setup Bridge Setup Witeless2 Setup Bridge Setup WEP MAC Control nok Tent Managament Change Password Firmware Upgrade	Remote MAC Address 1 Remote MAC Address 2 Remote MAC Address 3 Remote MAC Address 4 Remote MAC Address 5 Remote MAC Address 6 Remote MAC Address 8		Mbps Mbps Mbps Mbps Mbps Mbps Mbps Mbps			
	Backup/Restore Reboot Information Station Last Statistics		Apply Cancel	1			

**Picture7 Wireless1 Bridge Settings** 

You must enter the MAC address of the other Bridge-mode Wireless Station in the field provided. The remote Bridge must be set to Point-to-Point Bridge mode, using this central Bridge MAC address. They then send all traffic to this Master, rather than communicate directly with each other



# Wireless2 Security

### **WEP Setup**

m. Heliumpatraste	58.0.228/start.htm	• 航天中文,直	「「「「「」」」「「「「」」」」」「「」」」」」」」」」」」」」」」」」
ZDC	Air acces Dual-	ZA-5000-D RF Outdoor Wireless Access Point	Home Help Exit
	Security Settings		
meral N Setup Wirelass1 Setup Dridge Setup WEP	WEP Authentication Type Encryption Strength	🕫 Open System Nene 📃	© Shared Key
Wireleus2 Setup Besic Setup Pridge Setup WEP MAC Control ik Tout Management Change Pasaword	Security Encryption (WEP) Keys Passphrase: Key 1: © Key 2: © Key 3: ©	Jayr	
Formware Upgrade Backup/Restore Reboot Mormation	Key 4: C	@ NO	Cives
Station List Statistics		Apply Cancel	

Picture8 Wireless2 WEP

#### WEP:

Enable or Disable the Wired Equivalent Privacy for data encryption.

#### Authentication Type:

Specifies the Authentication type used: Open System or Shared Key. If "Shared Key" is selected, you need to enable WEP and enter at least one shared key. Default: Open System

#### **Encryption Strength:**

Select the desired option. If enabled (64 bit, 128 bit or 152 bits) the keys must be entered, and other wireless stations must use the same keys. Note that 64-bit and 128-bit are the standard encryption strength options. 152-bit key length is a proper mode that will only work with other wireless devices that support this mode.

Default: None

#### Security Encryption(WEP) Keys:

To use the "passphrase" to generate the keys, enter a character and click the "Generate Keys" button. You can also enter the keys directly. These keys must match the other wireless stations.

== CONFIDENTIAL (All right reserved by ZDC) ==



#### Key 1 Key 2 Key 3 Key 4

Select the key to be used as the default key. Data transmissions are always encrypted using the default key. The other keys can only be used to decrypt received data.

#### Wireless Client Security Separator:

The associated wireless station will not be able to communicate with each other if this feature is enabled.

Default: Disable.

### **MAC Control Setup**

Arccess     ZA-5000-0 Dual-RF Outdoor Wireless Access Point     Home     Holp       Normal Normation Statupo     Access Control List     Access Control On     Image Statup       Mac Address     Image Statup     Image Statup     Image Statup       WEP     MAC Address     Image Statup       MAC Address     Image Statup       WEP     Image Statup     Image Statup       MAC Address     Image Statup       WEP     Image Statup       MAC Address     Image Statup		A MOTO RAMA TO PARA	.u.220()6010.000	) • [40] http://192.168	
Access Control List  Access Control List  Turn Access Control On  Trusted Wireless Stations  MAC Address Mac Control  Available Wireless Stations  MAC Address  Available Wireless Stations  MAC Address  Available Wireless Stations  Available Wireless  Available  A	Ex	Dual-RF Outdoor Wireless Access Point	Airo	Icome	
Arail 4 Setup Vereles Setup WEP Weekess Stations MAC Address MAC Address Vereless Stations MAC Address MAC Control V Text Annagement Change Password Fermination Station List MAC Address MAC Address Add Add new Station Manually MAC Address Add MAC Address Add Add Add Add Add Add Address Add Add Add Add Address Add Add Add Add Add Add Address Add Add Add Add Add Add Add A			Access Control List		
Bindge Setup WEP     Trusted Wireless Stations       MAC Address     Delete       Basic Setup WEP     MAC Address       Basic Setup WEP     Available Wireless Stations       MAC Control < Tout			Turn Access Control On	oral I Setup Arelacia I Setup	
MAC Address       MAC Address       Bridge Setup       Bindge Setup       MAC Control       K Tost       Anagement       Change Password       Ferrware Upgrade       Back upRestore       Reboot       MAC Address       Add new Station Menually       MAC Address       Add ress			Trusted Wireless Stations	Dridge Setup	
Basic Setup Endge Setup WEP MAC Control Station ID MAC Address Station ID MAC Address MAC Control Station ID MAC Address Add Mac Address Add Mac Address Add Mac Address Add Mac Address Add Mac Address Add Add Mac Address Add Mac Address Add Add Add Add Add Add Add Add Add A			MAC Address	Vireleos2 Setur	
ACC Control ACE Available Wireless Stations ACC Control Tost Tost Tost Tost ACC Address Add Add new Station Manually Add new Station Manually MAC Address Add Add new Station Manually Add Add new Station Manually Add Add new Station Manually Add Add Address Add	Delete				
MAC Control Tost Station ID MAC Address Tost Add Add new Station Manually MAC Address Add new Station Manually MAC Address Add Add new Station Manually Add Address Add			Available Wireless Stations	wee	
Tost Internation Station List Internation Internatio Internation Internation Internation I			Station ID MAC Add	MAC Control	
Anage Password Add Change Password Add Firmware Upgrade Eachup/Restore Raboot MAC Address MAC Address Add			D 1 00:60:B3	Tout	
Increase Opprode Jackup/Restore Add new Station Manually Add new Station Manually MAC Address MAC Address Station List Add		Add	2-1	anagement Dange Password	
			Add new Station Manually MAC Address	omware Opgrade Jackup/Restore Ieboot Jomiabon Station List	
Apply Cancel		Apply Cancel		itations	

Picture9 Wireless2 MAC Control

The optional Access Control window lets you block the network access privilege of the specified stations through the Access Point. This provides an additional layer of security.

Choose the Turn Access Control On to enable Access Control feature.

#### **Trusted Wireless Stations:**

This lists any wireless stations you have entered. If you have not entered any wireless stations this list will be empty.

To delete an existing entry, select it and then click the "Delete" button.

#### **Available Wireless Stations:**

```
== CONFIDENTIAL (All right reserved by ZDC) ==
```



Select the stations from the wireless station list and click Add button to add to the Trusted Wireless Stations list.

#### Add new Station Manually:

Use this to add the MAC address of the wireless stations to the Trusted Wireless Stations list.

### Link Test

500) * 10 http://192.	168.0.228/start.htm			(4) (4)	中文。直接提出	合約到 難援 "	She B .
ZDC	Air	occess	ZA Dual-RF O Acc	-5000-0 utdoor Wireless ess Point	Home	Help	Ext
	Link Test						
eneral AN Control							
Winders1 Satup Bildge Satup	Local MAC :		00:60:83:22	: 36:FD 💌			
WEP	Remote MAC :		5000				
Basic Setup	DE Cable Less/0.1/0	·	5000 m				
Bridge Setup	Level Antenno Coindo 000						
MAC Control	Covar Antenna Valin(V-26)		len (BH				
nk Test	Remote America Gam(0-99)		2.3 dBi				
Management Channe Paseword							
Firmware Upgrade	Trans Pkt Num:	1		0 Rev Pkt Num:			0
Backup/Restore	Rov/Trans Rate:			0% Time Elapsed(s):			0
Rebool	Local Signal Level(dBm):	£		-91 Remote Signal Lev	vel(dElm):		-91
Station List	Local Signal Level: (PERCENT)	+		0% Remote Signal Lev (PERCENT)	NOC		0%
Statistics							
	-			I and the second			
			-Dfart	atop Apply			

#### **Picture10 Link Test**

Select MAC Address of wireless1 in Local MAC list, then input the parameters of Space Between AP, RF Cable Loss, Local Antenna Gain and Remote Antenna Gain, click "Apply" button, then click "Start" button, test wireless1 chain.

Select MAC Address of wireless2 in Local MAC list, then select Remote MAC Address in Remote MAC list, input the parameters of Space Between AP, RF Cable Loss, Local Antenna Gain and Remote Antenna Gain, click "Apply" button, then click "Start" button, test wireless2 chain.



Notice: In Bridge Mode, the value of Space Between AP should close to the real distance.

-

Warning: The value of Space Between AP must be input.



View the intensity of signal, and adjust the positions and angles of the antenna according to the intensity of signal. Adjust the antenna from side to side from head to foot, observe the number value of dBm at the same time, when the number value of dBm is the greatest, the antenna is in the best positions and angles promptly.

Notice: Two kinds of expression methods that equipment has offered the intensity of signal to compare with intensity of signal, the intensity of signal than only generally consults the meaning, is subject to number value of the intensity of signal (dBm) while adjusting the antenna!

If wireless2 work In Point-to-Multipoint mode, then must test every chain.



# Management

Change Password



#### Picture11 Change password

You can use the Change Password page to change the Access Point administrator's password for == CONFIDENTIAL (All right reserved by ZDC) ==



accessing the Settings pages.

To change the password:

- 1. Type the old password. The default password for the Access Point is: password.
- 2. Type a new password and type it again in the Repeat new password box to confirm it.



3. Click Apply to have the password changed or click Cancel to keep the current password.

#### Firmware Upgrade

b(D) * 💽 http://192.16	ð.0.228jstart.hkm				+ 加入中文。	直接提出 医	(249到 181	e ** 🛒	B .
ZDC		Air acce	<b>5</b> 5 <sup>3</sup> Du	ZA-5000-D al-RF Outdoor Wireles: Access Point		Home	Help		Exit
eneral	Upgrade Fir	mware							
AN Setup Wireless1 Setup Bridge Setup	Browse to locate	the firmware file:	浏览						
Wireless2 Setup Basic Setup Bodge Setup WEP MAC Control				Upload					
Management Change Password Firmware Ubarade Backup/Restore Reboot									
Information Station List Statistics									

Picture12 Upgrade Firmware

You can install a new version of the Access Point's software using the Firmware Upgrade page.



To upgrade the Access Point software:

- 1. Download the new software.
- 2. If not done automatically, uncompress the downloaded file. If included, read the Release Notes before continuing.

== CONFIDENTIAL (All right reserved by ZDC) ==



- 3. Click Browse.
- 4. Locate and select the file you just downloaded and uncompressed from your local hard disk.
- 5. Click Upload to send the software to the Access Point. This loads the new software into the Access Point and causes the Access Point to restart.



6. Click General and check the Firmware Version to verify that the Access Point now has the new software installed.



#### Backup/Restore

Wireless Outdoor Bridg 文件(の) 偏振(の) 査希(の)	e 2A-5000-D - Microsoft Internet Explorer
-> £18 - → - ② ② : 1812(□) - ▲ 100 31 (0)	과 이번호 비사제로 양해져 3월 년·3월 전·1월 전·1월 월 후 76 1월 8월 19 1월 12월 5년 58.0.228/stat.htm
ZDC	Air OCCESS Dual-RF Outdoor Wireless Access Point
General LAN Seliup Wireleast Seliup Wireleast Seliup Wireleas2 Selup Basic Selup Basic Selup MAC Control Link Tost Management Change Password Firmware Upgrade Backup/Restore Backup/Restore Station List Station List Station List	Backup / Restore Settings         Backup a copy of the current settings to a file         Backup         Retrieve backed up settings from a file         File:         BACKUP / Retrieve         Restore factory default settings         Restore
	Naming 2-1744 Windows 127, 124
1 元中	🖉 Internet

#### **Picture13 Backup/Restore Settings**

This page allows you to back up the Access Point's current settings and restore the factory default settings.

```
== CONFIDENTIAL (All right reserved by ZDC) ==
```



Once you have the Access Point working properly, you should back up the information to have it available if something goes wrong. When you backup the settings, they are saved as a file on your computer. You can restore the Access Point's settings from this file.

#### Backup a copy of the current settings to a file

To create a backup file of the current settings:

- 1. Click Backup.
- 2. If you don't have your browser set up to save downloaded files automatically, locate where you want to save the file, rename it if you like, and click Backup.
- 3. If you have your browser set up to save downloaded files automatically, the file is saved to the your browser's download location on the hard disk.

#### Retrieve backed up settings from a file

To restore settings from a backup file:

- 1. Click Browse.
- 2. Locate and select the previously saved backup file (by default, ZA5000D.cfg).
- 3. Click Retrieve. A window appears letting you know that the Access Point has been successfully restored to previous settings. The Access Point will restart. This will take about one minute.
- 4. Close the message window.

#### **Restore factory default settings**

To erase the current settings and reset the Access Point to the original factory default settings: Click Restore.

Notice: Do not try to go online, turn off the Access Point, shutdown the computer or
do anything else to the Access Point until it finishes restarting! When the Test light
turns off, wait a few more seconds before doing anything with the Access Point.

#### Reboot

You may select Yes on Reboot page the Access Point and then click on Apply button to reboot the Access Point.





Picture14 Reboot AP



# Information

### Station List



**Picture15 Wireless Station List** 

This page shows the Station ID, and MAC (Media Access Control) address for each Access Point or client node associated with the Access Point.



# Statistics

(D) • (D) http://192.36	58.0.228/start.htm	÷	大中文,直接推案 : 2時刻 桥段" 深。合			
ZDC	Air acce	ZA-5000-D Dual-RF Outdoor Wireless Access Point	Home Help Exit			
11	Statistics					
meral W Setup	Wired Ethernet					
Wirelacs1 Setup		Received	Transmitted			
Dridge Setup	Packets	1302	3113			
WEP	Bytes 130901 1137899					
Wireleos2 Setup  Basic Setup	Wreless 1					
Bridge Setup	[	Received	Transmitted			
WER (SILE)	Unicast Packets	0	0			
Here's Continent	Broadcast Packets	0	0			
Management	Multicast Packets	0	0			
Change Deseared	Total Packets	0	0			
Firmware Upprade	Total Bytes	0	0			
Backup/Restore Reboot	Wireless2					
information:	1	Received	Transmitted			
Station List	Unicast Packets	0	1629			
Statistics.	Broadcast Packets	0	198			
	Multicast Packets	0	1676			
	Total Packets	0	3503			
	Total Dube	0	250948			

#### **Picture16 Statistics**

This page displays both wired and wireless interface network traffic. Click Refresh to update the current statistics.

#### Wired Ethernet:

This section displays traffic statistics for the wired Ethernet interface.

#### Wireless1:

This section displays traffic statistics for the Wireless1 interface.

#### Wireless2:

This section displays traffic statistics for the Wireless2 interface.



# 4. Troubleshooting

- ► <u>FAQ</u>
- Technical support

# FAQ

# **Technical support**

You can access the web page: <u>http://www.zcom.com.cn/chinese/download.asp?styleid=1</u>. Upgrade latest version software to download, if meet difficulty and please contact our supplier in the course of installing and using the Access Point.



# Appendix

- > <u>Technical Specifications</u>
- ➢ <u>Glossary</u>
- > <u>ASCII</u>

# **Technical Specifications**

ZA-5000-D Product Specifications							
Description	The next-generation Wireless LAN device – ZA-5000-D 802.11a/b Wireless Outdoor Bridge, Unique double RF design can work 2.4GHz and 5.8GHz at the same time, and concert some operation mode (Bridge Repeater mode, Bridge + AP mode), then agilely setting and performance was be smart improve.						
	Wireless1	Wireless2					
Feature							
Standards	IEEE 802.11a	IEEE 802.11a/b/g					
Data Rate Selection	Best、54、48、36、24、18、 12、9、6Mbps	Best、54、48、36、24、18、12、9、 6Mbps 11、5.5、2、1Mps					
AP Mode	Yes	Yes					
Bridge Mode	PTP	PTMP、Repeater					
DHCP Client	Yes						
Spanning Tree Yes							
Link Test Yes							
Security							
WEP	Yes	Yes					
MAC Control	Yes	Yes					
SSID Broadcast	No	Yes					
STA Separator	No	Yes					
WDS Separator	No	Yes					
Management	-						
Web	Yes						
F/W Upgrade	Yes (Web/TFTP)						
Backup/Retrieve	Yes						
Physical		1					
Antenna	Integrated 23dBi flab antenna	N type interface					
LAN	1个10/100-BaseTX RJ-45 Ethe	rnet Interface					
Default Button	Yes						
Power	100-240V AC, 50/60Hz~48V DC	C/1A					
Channel	5GHz:	5GHz:					



	America: 5.15GHz~5.25GHz;	America: 5.15GHz~5.25GHz;		
	5.25GHz~5.35GHz;	5.25GHz~5.35GHz		
	5.725GHz~5.825GHz	5.725GHz~5.825GHz		
	Europe: 5.47GHz~5.725GHz	Europe: 5.47GHz~5.725GHz		
	China: 5.725GHz~5.850GHz	China: 5.725GHz~5.850GHz		
		2.4GHz:		
		America: 2.412GHz~2.462GHz		
		Japan: 2.412GHz~2.484GHz		
		Europe: 2.412GHz~2.472GHz		
		China: 2.412GHz~2.472GHz		
RF Max Output		18dBm±2dBm(802.11a/g)		
Power	тойын(тайын)+азиы	21dBm±2dBm (802.11b)		
	-65dBm@54Mbps;	-65dBm@54Mbps;		
	-66dBm@48Mbps;	-66dBm@48Mbps;		
	-70dBm@36Mbps;	-70dBm@36Mbps;		
	-74dBm@24Mbps;	-74dBm@24Mbps;		
	-77dBm@18Mbps;	-77dBm@18Mbps;		
Consitivity	-79dBm@12Mps;	-79dBm@12Mps;		
Sensitivity	-81dBm@9Mps;	-81dBm@9Mps;		
	-82dBm@6Mbps	-82dBm@6Mbps;		
		-80dBm@11Mbps		
		-83dBm@5.5Mbps;		
		-84dBm@2Mbps;		
		-87dBm@1Mbps		
Power	TBD			
Consumption				
Environment				
Operating	-15∼60°C			
temperature	<b>-5∼60</b> ℃			
Storage	20~80℃			
temperature				
Humidity	5~95%			



# Glossary

AP	The abbreviation of Access Point, refer in particular to the wireless access point.				
DWA	The abbreviation of Broadband Wireless Access, does not have the network bridge				
BWA	to refer in particular to broadband.				
IEEE 802.11	Include IEEE 802.11a/b/g.				
	Show that there is important information that reminds you with better using the				
•Notice	equipment.				
-	It have potential dangerous operation will do harm to hardware of the equipment or				
warning	make data not to lose or make equipment not to can be used normally all to show.				
	It distributes to may make wireless users can connect to the network name of AP to				
SSID	use for. It is different from the access point name of AP, it was used for				
	distinguishing AP that that is only available for AP.				
	If has not used DHCP server in the network, has needed to assign a legal IP address				
AP IP address	for AP, used to land to AP through HTTP. IP address of acquiescence is http://192.				
	168. 0. 228.				
HTTP	Used for landing admin password or password of user name of acquiescence to AP				
User's name/password	from WEB page.				
Enorupt sotting	Which kind of encryption ways are not needed to decide to set up for AP with you				
	according to the environment.				
L ink test	When AP is chosen as mode of bridge graft, this function can be used for				
	determining the connection state with a purpose MAC address.				
MAC control	This function is only valid under AP mode, invalid under the mode of bridge graft.				
	Used in MAC address to filter.				
Trusted STA	Wireless STA when should only tabulate when MAC controls the function to open				
	could be connected to AP.				
Available STA	MAC address connected to STA of AP all show in should be tabulatedding, when				
Available SIA	can add to and can believe wireless STA is tabulated according to the need .				





### ASCII

You can dispose sexadecimal number system counting or ACSII one yard of keys encrypted as WEP.Sexadecimal number system is made up by 0-9 and A-F (letter does not distinguish capital and small letter ); ACSII yard is by 0-9 figures , A-F , a-f (letter distinguishes capital and small letter), and the punctuation mark makes up . Each ACSII yard can is it says to count by one sexadecimal number system of two. One-one ASCII yard of all and sexadecimal number system are counted to make forms and list all.

ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex
Character	Equivalent	Character	Equivalent	Character	Equivalent	Character	Equivalent
!	21	9	39	Q	51	i	69
"	22	:	3A	R	52	j	6A
#	23	;	3B	S	53	k	6B
\$	24	<	3C	Т	54	1	6C
%	25	=	3D	U	55	m	6D
&	26	>	<b>3E</b>	V	56	n	6E
6	27	?	<b>3</b> F	W	57	0	6F
(	28	a	40	X	58	р	70
)	29	Α	41	Y	59	q	71
*	2A	В	42	Z	5A	r	72
+	2B	С	43	[	5B	S	73
,	2C	D	44	\	5C	t	74
-	2D	Е	45	]	5D	u	75
•	<b>2</b> E	F	46	٨	5E	v	76
/	<b>2</b> F	G	47	_	5F	w	77
0	30	Н	48	`	60	X	78
1	31	Ι	49	a	61	У	79
2	32	J	4A	b	62	Z	7A
3	33	K	4B	c	63	{	7B
4	34	L	4C	d	64		7C
5	35	М	4D	e	65	}	7D
6	36	Ν	<b>4</b> E	f	66	~	<b>7</b> E
7	37	0	4F	g	67		
8	38	Р	50	h	68		