



# **KWA-O1850**

## **User Manual**



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## Preface

About this manual

The purpose to use this manual is for install the wireless Access Point. This manual is including disposing course and method and helping the customer to solve the unpredictable problem.

The following typographical conventions are used in this purpose:

\*\*\* Notice:

This indicates an important Note.

!!! Caution:

This indicates a warning or caution.



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## Chapter 1 Introduction

### Introduction

KWA-O1850 is designed for outdoor environment application, the KWA-O1850 work on 5GHz, and is a high-performance outdoor-deployable wireless bridge that provides wireless connectivity among multiple network location. It provides higher reliability and changeable channel bandwidth, for long distance point to point connectivity of up to 40km.

Based on powerful FDD technology, it is the best way to ensure higher quality between multi-media transitions, for example, video, voice and image as well. Also, it is a right solution for telecommunication.

### Appearance of Product



Figure 1 KWA-O1850

### Features and Benefits

- ◆ Support 802.3af PoE (Power over Ethernet)
- ◆ Support 20/40 MHz channel bandwidth
- ◆ Support FDD mechanism, to ensure quality for multi-media application
- ◆ Support friendly WEB-Based interface for management
- ◆ Support SNMP remote management

## Typical Application

Design for long distance point to point connection. Such as ISP, it is the best choice as low cost, short construction time for broadband wireless access of enterprise.

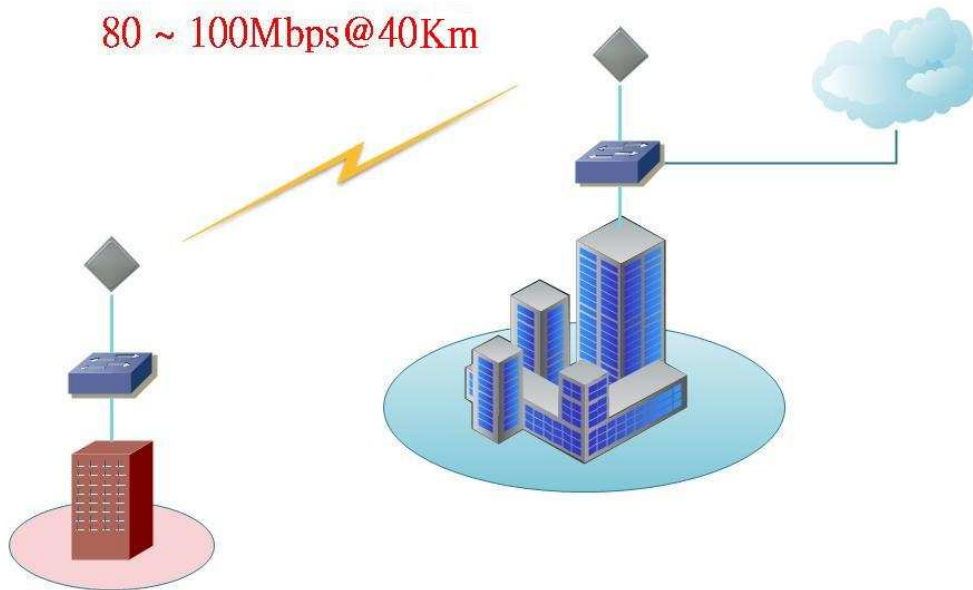


Figure 2 Point-to-Point



## Chapter 2 Hardware Installation

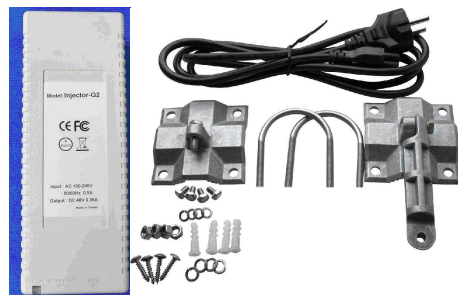
### System Requirement

Installation of outdoor unit of KWA-O1850 system requirement:

- ◆ Two PC with RJ-45 connector NIC supporting the transfer rate of 10/100Mbps data
- ◆ The IP address of NIC should be the same subnet with the AP such as 192.168.1.X , the default IP address of AP is 192.168.1.1
- ◆ Microsoft Internet Explorer 6 or above.

### Product Kit

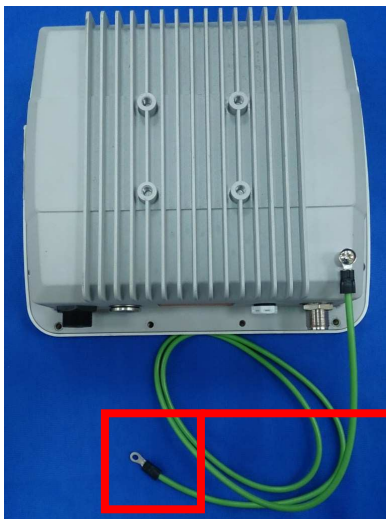
- ◆ KWA-O1850 x 1
- ◆ PoE Injector x 1
- ◆ Power Code x 1
- ◆ Mounting Kit x 1



### Hardware Installation

To keep the KWA-O1850 well while you are installing it, please read and follow these installation precautions.

1. Users **MUST** use a proper and well-installed surge arrestor and grounding kit with KWA-O1850; otherwise, a random lightening could easily cause fatal damage to KWA-O1850.



To ground

**EMD (Lightning) DAMAGE IS NOT COVERED UNDER WARRANTY.**

2. Users **MUST** use the “Power cord & PoE Injector” shipped in the box with the KWA-O1850.
3. Users **MUST** power off the KWA-O1850 first before connecting the external antenna to it; otherwise, damage might be caused to the KWA-O1850 itself.



## LED Descriptions

Definition of LED on the Motherboard:

LED	Status	Description
Power	Blue	Power ON
STATUS	Blue	Power on lights 10 Sec then OFF
Remote RSSI	Blue	CPE : Go around while surveying (not connect yet), Represent strength of RSSI after connected. Low ( 1 LED) → High (4 LEDs)
RST		Push 5 seconds then release to reset device

Figure 3 LED Definition



## Chapter 3 Basic Settings

### Factory Default Settings

We'll elaborate the KWA-O1850 factory default settings. You can re-acquire these parameters by default. If necessary, please refer to the "Restore Factory Default Settings".

Item	Factory default
<b>Login</b>	
User Name	admin
Password	password
<b>System</b>	
Device Name	KWA-O1850
Ethernet Speed / Duplex	Automatic
IP Setting	IP Address / Netmask: 192.168.1.1/24 (=192.168.1.1/255.255.255.0)
	Default Gateway: No
	DNS Server: No
<b>Wireless Setup</b>	
Remote Mac Address	No
TX Radio	A or B
Bandwidth / Freq.(A)	20MHz@5280MHz
Bandwidth / Freq.(B)	20MHz@5560MHz
TX Modulation	16QAM1/2
TX Power	16dBm
<b>Management Setup</b>	
SNMP Setting	SNMP Agent: Disable
	Read Community: public
	Write Community: private
	System Contact: No
	System Location: No
	IP Address to Receive Traps: No
Time Setting	Time Zone: (GMT+08:00)Beijing, Chongqing, Hong Kong, Urumchi,Taipei
	Daylight Saving Time(DST):
	Time Server: pool.ntp.org

Figure 4 Default Settings



## How to Login the WEB-Based Interface

The KWA-O1850 provides you with user-friendly Web-based management tool.

Open IE and enter the default IP address (**Default: 192.168.1.1 and 192.168.1.2**) and Login as below:



Figure 5 Login Interface

Enter the username (Default: **admin**) and password (Default: **password**) and click “Login”

!!! Caution

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IP address of your PC must be the same subnet of device

---

After login, you can check basic information of device, such as MAC address off device, Firmware version, etc.



Figure 6 Device Information

## Basic System Setup

Into System Setup, you can do basic settings of device:

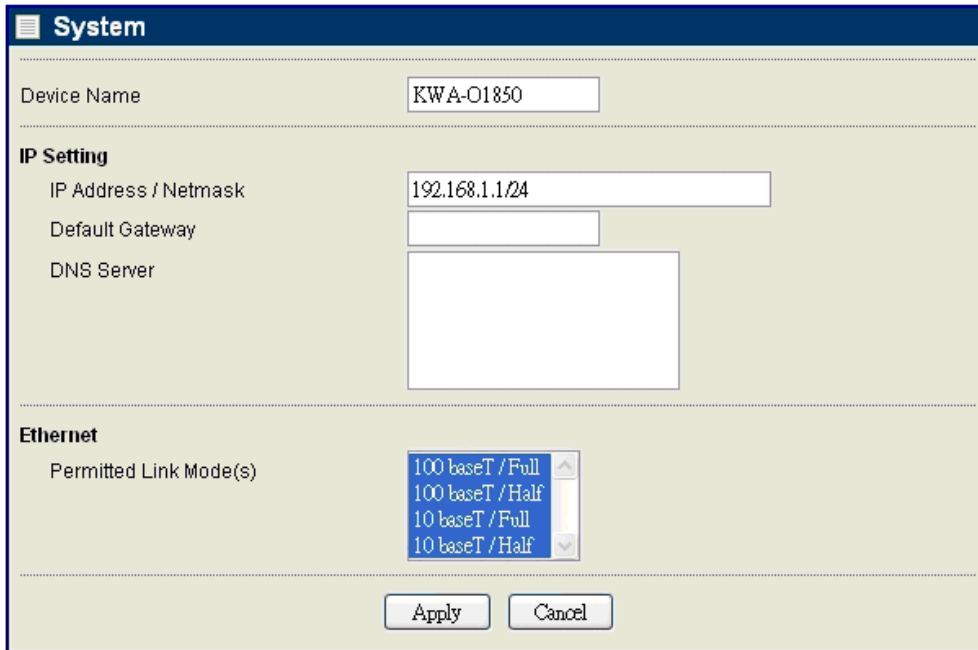


Figure 7 System Settings

### Device Name

Specify the device name, which is composed of no more than 15 characters with (0-9), (A-Z), (a-z) or (-).

### IP Address / Netmask

You have to specify a static IP address, subnet mask. Use subnet mask to ensure two devices in the same network. The /24 is the binary system.

Such as :

192.168.1.1 / 24 = 192.168.1.1 / 255.255.255.0

192.168.1.1 / 25 = 192.168.1.1 / 255.255.255.128

### Default Gateway

Default gateway and DNS server for your local area network which connects to the LAN port.

### Ethernet Data Rate

Specify the transmission rate of data, default is Automatic.

Automatic (T-Base100Mbps Full / T-Base100Mbps Half /T-base10Mbps Full / T-base10Mbps Half )

### DNS Sever

You can set domain name server on the blank area.



# Chapter 4 Wireless Settings

## Basic Wireless Settings

Configure basic settings as following:

Figure 8 parameters of wireless

### Remote MAC Address:

To specify remote device MAC address. Two devices have to assign MAC address of each other. And make sure the same parameters of Security, Radio for connection.

### Tx Radio:

To select Tx Radio on A or B.

### RF Bandwidth / Frequency

Decide radio A and B's RF bandwidth (Including 20 / 40 MHz.) and frequency.

### TX Modulation

Normally choice transmission rate as "Best", system will adapt best rate for real environment.

Including 64QAM 3/4, 64QAM 2/3, 16QAM 3/4, 16QAM 1/2, QPSK 3/4, QPSK 1/2, BPSK 3/4, BPSK 1/2

Data Rate (Mbps)	BPSK 1/2	BPSK 3/4	QPSK 1/2	QPSK 3/4	16QAM 1/2	16QAM 3/4	64QAM 2/3	64QAM 3/4
20MHz	6	9	12	18	24	36	48	54
40MHz	12	18	24	36	48	72	96	108

Figure 9 Data Rate vs. RF Bandwidth



### TX Power

Transmission power is between 9 dBm to 23 dBm.

### Status

In this page, it can show remote bridge RSSI for local bridge and local bridge RSSI for remote bridge.

We can decide the best direction of antenna from following steps:

1. We check the RSSI only in one side. (We call it local side.)
2. Fix remote side antenna, and adjust local side antenna. In local side, check the "RSSI" first, to find a best RSSI and then fix the local antenna.
3. Adjust the Remote antenna, to find the Best Remote RSSI, and then fix the remote antenna.
4. If "RSSI" is changed, and worse than before, adjust local antenna again to get a best one and fix local antenna.
5. If "Remote RSSI" is changed and worse, adjust remote antenna again.
6. Follow the same ways to get a better RSSI and Remote RSSI value. And Fix both side antennas.

Wireless Status		
Remote Mac Address	00:00:00:00:00:00	
Inactive Time	01:41:08.160	LINK-BROKEN
Local Signal / Noise	0 dBm/0 dBm	
Remote Signal / Noise	0 dBm/0 dBm	
	RX	TX
Bandwidth / Freq	40 MHz @ MHz	40 MHz @ MHz
Modulation	BPSK1/2	64QAM3/4
Packets	0	0
Bytes	0	0
Refresh		

Figure 10 Status

## Chapter 5 Management

### Upgrade Firmware

Via WEB interface to upgrade firmware:

**Firmware**

Firmware	Uploaded	Main	Backup
<b>Version</b>	N/A	1.09RC16	1.09RC16
<b>Length</b>		4915200	4915200
<b>Checksum</b>		b526393b	b526393b
<input type="button" value="Upload"/>		<input type="button" value="Download"/>	

**Automatically backup after main firmware upgraded**       Enable    Disable

**Main to Backup (Backup main firmware)**     

**Backup to Main (Recover backup firmware)**     

**Uploaded to Main (Upgrade the uploaded firmware)**

Figure 11 Upgrade Firmware

1. Open "Firmware" page.
2. Click "Upload" to select new "Firmware" and the device will upgrade the firmware automatically
3. Main: It's show current firmware.
- 4.Backup : It can backup the main firmware.

After checked Firmware by system, it starts to upgrade firmware, and will back to Login page after firmware upgrade successful, otherwise system will show you the reason why it failed.

**!!! Caution**

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**Do NOT cut the power off during upgrade, otherwise the system may crash!**

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## Backup/Restore

It would be better to backup settings of device after it work fine, so that you can recover settings quickly when something go wrong.



The screenshot shows a web interface titled "Backup / Restore Settings". It is divided into three main sections:

- Restore factory default settings:** Contains a "Default" button.
- Backup current settings to a file:** Includes an "Encryption Key" field with two input boxes, a text box showing "Version: 1.09RC16" and "Mac Address: 00:1c:24:27:02:49", a "Memo" text area, and a "Backup" button.
- Upload a backup file to recover settings:** Includes a file selection field with a "瀏覽..." (Browse) button and an "Upload" button.

Figure 12 Backup/Restore

Open "**Backup/Restore**" page, click "**Default**", device will back to factory settings, or push "**RST**" button as device active, then it will back to factory settings after Alarm LED stop flash.

Open "**Backup/Restore**" page, click "**Backup**", it will pop up a dialog for input path and filename, such as **C:\**, and it will save "**config.hfm**" in the local disk after that.

Open "**Backup/Restore**" page, click "Browser", It will pop up a dialog to choice what file you want to restore, such as "**C:\config.hfm**", then click "**Upload**", the settings of the file will be restored back to device, and it will active for the device after auto reboot.



## Change Password

Via “HTTP Setting”, you can modify password for WEB management.

The screenshot shows a web interface titled "HTTP Setting". Under the "Authentication" section, there are three input fields: "User Name" (containing "admin"), "New Password", and "Confirm Password". At the bottom of the form are "Apply" and "Cancel" buttons.

Figure 13 Password

You have to enter new password and confirm password then click apply it will change the password. (Maximum length of password is 63 character.)

## Remote Management

The screenshot shows a web interface titled "Remote Management". Under the "Remote Console" section, "Secure Shell (SSH)" is set to "Enable". Under the "SNMP" section, "SNMP" is set to "Enable". There are input fields for "Read Community" (public), "Write Community" (private), "System Contact", "System Location", and "IP Address to Receive Traps" (0.0.0.0). A "Download" button is next to "Enterprise MIB". At the bottom are "Apply" and "Cancel" buttons.

Figure 14 Remote Management

## Remote Console

The KWA-O1850 supports CLI management, which could be accessed by Secure Shell (SSH). It is recommended PuTTY be used to login. Download it from <http://www.putty.org/> for free. The minimum system requirement for using PuTTY is Windows 95, 98, ME, NT, 2000, XP and Vista on Intel x86.



Follow the steps below to implement:

Once the program is downloaded, open up by double-clicking. Note that before using PuTTY, be sure you are able to connect to the WiFD2 bridge.

Enter IP Address of KWA-O1850 (Default: 192.168.1.1), Port (22) and check SSH as connection type;

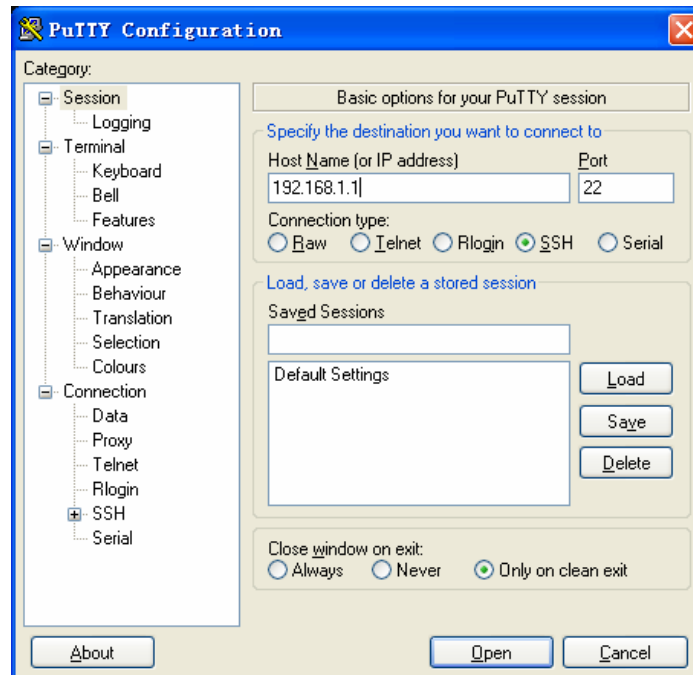


Figure 15 PuTTY Configuration

Click “Open”, a window as below will popup:

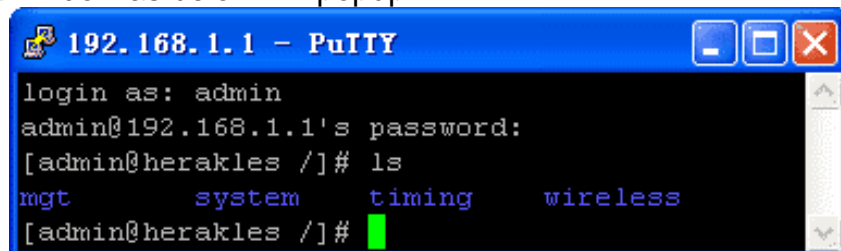


Figure 16 SSH

Enter the user name and password (Default user name/ password: admin/password) respectively, After login it will show “**admin@herakles/**” and you can enter “help” to get more information.

## Time Server

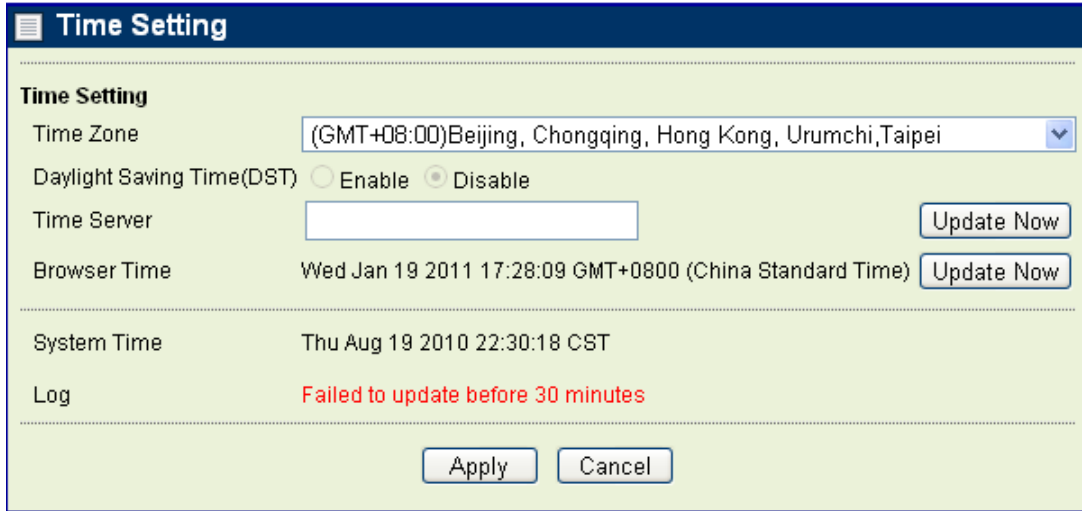


Figure 17 Time Setting

### Time Zone

Select your time zone, default is (GMT+08:00)Beijing, Hong Kong, Urumchi, Taipei.

### Daylight Saving Time

Select adjust for daylight saving time or not, default is disabled.

### Time Server

Follow NTP protocol, and synchronize with Time Server.

### Reboot

When you click the “reboot” then the device will pop up a reboot message. Click “yes” to reboot the system.



Figure 18 Reboot



## Chapter 6 Troubleshooting

### FAQ

How to know MAC address of device?

- ◆ The MAC address is written in a label which is in the bottom of device
- ◆ From the General page of WEB configuration, you also can get the MAC address of device.

Why two Access Points can not build connection after setting?

- ◆ Check "Remote Mac Address" which is correct.
- ◆ Check "Tx Radio" whether is different.
- ◆ Check the "Bandwidth/Freq.(A)" whether is same.
- ◆ Check the "Bandwidth/Freq.(B)" whether is same.

How to adjust output power?

- ◆ In the Wireless Settings page, you can do it.

What if forget IP address after setting?

- ◆ Press Rest button about 6~9 seconds (Status flash rapidly), release the button. Device will back to factory settings, default IP address is 192.168.1.1。

Why can not open WEB page of remote wireless device in local network?

- ◆ Because this kind of settings will slow the response of remote AP WEB Server, just waiting for several minutes or restarting remote wireless bridge is a way to solve problem. We suggest you set AP in local wired Ethernet network.

### Service Support

If you have any questions, please contact us.