

AirLink Quick start

Multifunction 802.11n Access Point

10, rue des Entrepreneurs
ZA Val Joyeux
78450 VILLEPREUX – France

Phone: +33 (0)1 30 56 46 46
 Fax: +33 (0)1 30 56 12 95
 Web: www.acksys.fr
 Hotline: support@acksys.fr
 Sales: sales@acksys.fr

- ✓ WIFI IEEE 802.11 a/b/g/n 2T/2R
- ✓ Access point, router, bridge, MESH, repeater
- ✓ Ethernet 10/100/1000 Base T, RJ45 connector
- ✓ Compact metal housing
- ✓ Wall or optional DIN Rail mounting
- ✓ Power input 9 to 48 VDC
- ✓ 2 RP-SMA female connectors for external antennas

FIRST STEP

Packing list :

- 1 AirLink device,
- This documentation, printed,
- 1 standard cat. 5e straight Ethernet cable,
- 2 external omni-directional dual-band 2.4 GHz and 5GHz antennas.

If any of these items is missing or damaged, please contact your distributor.

Read the user manual ([WaveOS user guide](#)), available online. Check for more recent releases of this quick start user guide and firmware. If yes, download them and install the new firmware (with ACKSYS NDM software or WEB configuration interface).

HARDWARE INSTALLATION

1. Connect and adjust the antennas

Carefully unpack the antennas. Screw it onto the antenna connectors on the access point and hand-tighten them. For maximum range, make sure the antennas are vertical (points straight up or straight down), no matter where the product is mounted. The provided omnidirectional antennas are not advisable for wall mounting, because of radio perturbations induced by the wall.

2. Connect the Ethernet cable from your wired LAN to your product

Use the straight cable provided with the product if you wish to connect the product directly to equipment (a hub, a switch, a router, a PC...). You can use a crossover cable, the product is auto MDI/MDIX.

3. Connect the power supply

The product has provisions for many levels of constant voltage, from 9V to 48V. No power supply is shipped with the product. Plug your power supply into the terminal, and the earth wire if necessary. Notice, the product has no ON/OFF switch. The product turns on automatically when power supply is connected.

SOFTWARE CONFIGURATION

4. Modifying the default IP address 192.168.1.253

From any PC of the network, run the multi-platform application **ACKSYS NDM** application (found on the ACKSYS web site).

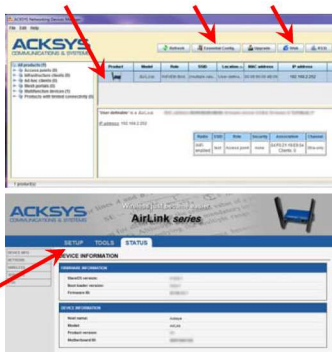
Go directly to step 5 if the default IP address is compatible with your network.

Else, select the device and click on « **Essential Config.** » button. You can configure the IP address or activate the DHCP client.

5. Running the internal web server

Click on the « **Web** » button to access from your web browser to the built-in web-based interface using your web browser. The default page displays the device status. Now select the « **SETUP** » tab.

You will be asked to enter a username and a password. You must choose the **root** user. No password is required by default. You get now access to the setup pages.



On the "wireless overview" page you should first select your country in order to enforce applicable regulation rules. The country selector is located in the global parameters, near the bottom of the page.

- You can select any radio interface to set up its Wi-Fi parameters (alternatively you can navigate to change network and services configuration). Set the following essential parameters:
- Country: after applying this parameter, channel regulation rules are enforced
 - The operating mode: Access point, client (bridge), Mesh
 - Wi-Fi parameters: 802.11 mode, radio channel (take care about legislation), SSID
 - Wi-Fi security parameters (WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, SSID broadcast or not)

You will find a complete description of all modes in the user guide.

Upon delivery, the default factory settings are:

- Radio interface disabled, preset for access point mode ... **It is mandatory to activate the radio during configuration.**
- IP 192.168.1.253



FINAL INSTALLATION

6. Install the device

Place the device in an appropriate place.

7. Install the antennas

Insure that their **position and radiation pattern** allow proper communication with the peer Wi-Fi devices.

Specifically, insure that there are **no obstacles** between the device and its peers ("line of sight" concept).

QUICKLY EVALUATE AP & BRIDGE MODES

Quickly evaluate the ACKSYS device in AP role

You need a second computer (PC2) with a working Wireless connection.



Set up the PC2 Wireless network interface according to the default no security.

Quickly evaluate the ACKSYS device in client role

You need two ACKSYS devices, and a second computer (PC2) with a wired LAN connection.

Set up the IP addresses according to the picture above and set the device connected to PC2 to Client (infrastructure) role.

From each PC, start a command prompt and run the ping command to verify the link.

From PC1: type **ping 192.168.1.2**, verify the answer returned by PC2
 « Answer from 192.168.1.2: »
 From PC 2: type **ping 192.168.1.1**, verify the answer returned by PC1
 « Answer from 192.168.1.1: »

Notice: The State LED is flashing until the bridge connects to the AP.

TROUBLESHOOTING

Checking radio conditions

Begin with tests at very short distance. Check that the space between antennas is not obstructed, that there are no obstacles nearby which could degrade transmission (concrete, rock, metal). In Bridge mode it is helpful to use the "STATUS->Wireless page which lists the visible access points in the neighbourhoods.

Checking WLAN configuration

If your WiFi device cannot be connected to the product, check your WiFi configuration. SSID must be the same between your device and the product.

If your device is connected to the product, but you can't send data to any devices, check the encryption keys. For other cases disable security options on all devices and product, and try again.

Checking the network topology

You must be sure that the IP address used by the product is not already used on your network. In order to verify, you can « ping » the product.

Disconnect the product from the network and type in a command prompt window:

```
C> arp -d
C> ping 192.168.1.253
```

(Remark: If you have already changed the IP address of the product, ping the newly assigned one)

According to the nature of the message, you can know if the address 192.168.1.253 is already used on your network:

- **Request timeout:** this IP address is not used.
- **Answer from 192.168.1.253:** this IP address is used by another equipment.

"ACKSYS NDM" does not find your equipment

- ACKSYS NDM only scans the local network. Devices located behind a gateway are not seen.
- If you use a firewall on your computer, check if the application is not blocked.

TECHNICAL CHARACTERISTICS

General characteristics	
Dimensions	127 x 67 x 23 mm, w/o antenna connectors (5 x 2.64 x 0.91 inches)
Weight	200g w/o accessories, 228 g with 2 antennas and power supply terminal block
Enclosure	IP30
Operating temperatures	-20°C to +60°C (-4°F to 140°F)
Storage temperatures	-40°C to +85°C (-40°F to 185°F)
Relative humidity	5% to 95% w/o condensation
Reset button (accessible from front panel with a sharp object < 2mm)	Short push, anytime: → Reset Long push (> 2 sec.): → Restore factory settings - while operating: → Restore factory settings - while in emergency upgrade mode: → Restore factory settings - at startup: → Enter emergency upgrade
LEDs	6 LEDs: Power, Diag, LAN Speed, LAN Link/Act., WiFi Act. and WiFi State
Certifications	CE (RED), FCC (ID : Z9W-RMB), IC (ID : 11468A-RMB) RED directive (2014/53/EU) compliant channels 36 to 64 exclusively indoor) For additional information see ACKSYS web site

Software	
Configuration	Automatic discover of the product Built-in web interface with login/password protection
Firmware upgrade	Web browser or ACKSYS NDM software
SNMP	SNMP V2C, V3

Power supply	
Characteristics	9 to 48VDC (5.5W typ., 8.5W peak), with protection against wire inversion; 3 way terminal block connector.

Ethernet interface	
Number of ports	1
Type of ports	Auto MDI/MDI-X, 10 Base T/100 Base Tx/1000 Base T with automatic negotiation (HDX/FDX, 10/100/1000 Mbps), according to 802.3u
Connectors	RJ45
Cable	Ethernet CAT5e UTP, 2x RJ45 connector (straight cable T568B)

Wi-Fi interface																
Radio mode	IEEE 802.11a/n, 802.11b, 802.11g & 802.11n															
Chipset	QCA955X QUALCOMM															
	802.11n : up to 300 Mbps (2T/2R)															
Radio bitrates	802.11a/n : 6 to 54 Mbps 802.11b : 1 to 11 Mbps 802.11g : 1 to 54 Mbps															
Operating modes	AP (Access Point), Router, Bridge/Client, Mesh (802.11s), Repeater, WDS															
Security (AP mode)	WEP, WPA-PSK/WPA2-PSK, WPA/WPA2 with authentication 802.1x, hidden SSID or not.															
Security (Bridge/Client mode)	WEP, WPA-PSK, WPA2-PSK, 802.1x supplicant, AES/TKIP/WEP encryption.															
Security (Mesh mode)	SAE/AMPE															
Frequency range 802.11a/n	5 GHz; 5.150 to 5.850 GHz															
Frequency range 802.11b/g/n	2.4 GHz; 2.412 to 2.484 GHz															
Antenna socket connector	2 female RP-SMA															
Antenna	2 omnidirectional dual band, 3dBi, RP-SMA															
	<table border="1" style="width: 100%; text-align: center; font-size: x-small;"> <tr> <td></td> <td>802.11n HT20 2.4GHz band</td> <td>802.11n HT40 2.4GHz band</td> <td>802.11n HT20 5GHz band</td> <td>802.11n HT40 5GHz band</td> </tr> <tr> <td>Max. RF output power (1 chain) (add 3dBm for 2 chains)</td> <td>20.5 dBm @ 7.2 Mbps (MCS 0) 18 dBm @ 72.2 Mbps (MCS 7)</td> <td>20.5 dBm @ 15 Mbps (MCS 0) 18 dBm @ 150 Mbps (MCS 7)</td> <td>18 dBm @ 7.2 Mbps (MCS 0) 15 dBm @ 72.2 Mbps (MCS 7)</td> <td>18 dBm @ 15 Mbps (MCS 0) 15 dBm @ 150 Mbps (MCS 7)</td> </tr> <tr> <td>Rx sensitivity</td> <td>-92 dBm @ 7.2Mbps (MCS 0) -76 dBm @ 72.2 Mbps (MCS 7)</td> <td>-90 dBm @ 15 Mbps (MCS 0) -73 dBm @ 150 Mbps (MCS 7)</td> <td>-96 dBm @ 7.2Mbps (MCS 0) -75 dBm @ 72.2 Mbps (MCS 7)</td> <td>-91 dBm @ 15 Mbps (MCS 0) -72 dBm @ 150 Mbps (MCS 7)</td> </tr> </table>		802.11n HT20 2.4GHz band	802.11n HT40 2.4GHz band	802.11n HT20 5GHz band	802.11n HT40 5GHz band	Max. RF output power (1 chain) (add 3dBm for 2 chains)	20.5 dBm @ 7.2 Mbps (MCS 0) 18 dBm @ 72.2 Mbps (MCS 7)	20.5 dBm @ 15 Mbps (MCS 0) 18 dBm @ 150 Mbps (MCS 7)	18 dBm @ 7.2 Mbps (MCS 0) 15 dBm @ 72.2 Mbps (MCS 7)	18 dBm @ 15 Mbps (MCS 0) 15 dBm @ 150 Mbps (MCS 7)	Rx sensitivity	-92 dBm @ 7.2Mbps (MCS 0) -76 dBm @ 72.2 Mbps (MCS 7)	-90 dBm @ 15 Mbps (MCS 0) -73 dBm @ 150 Mbps (MCS 7)	-96 dBm @ 7.2Mbps (MCS 0) -75 dBm @ 72.2 Mbps (MCS 7)	-91 dBm @ 15 Mbps (MCS 0) -72 dBm @ 150 Mbps (MCS 7)
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Dimensions and LEDs		LED	Color	Description
	Power	Green	ON : Power supply is connected OFF : No power supply Status of the product:	
	Diag	Red / Green	OFF : No power supply RED : 1min during startup RED at least 2 minutes : Boot failed GREEN : Boot successful BLINKING (RED/GREEN) : The firmware is downloading or invalid firmware (Reload it with ACKSYS NDM)	
	LAN Link/Act.	Green	ON : LINK OK BLINKING : Tx/Rx OFF : LINK NOK	
	LAN Speed	Yellow	ON : 1000 Base T mode OFF : 10/100 Base T mode	
	WiFi Act.	Blue	OFF : No Tx/Rx Blinking : Tx/Rx	
	WiFi State	Green	OFF : Radio card disabled BLINKING : not associated ON : associated	