

# Quick Installation Guide

## Industrial Wireless LAN Access Point

### Introduction

**IGAP-610H+** is a reliable WLAN Access Point with 1 Ethernet Gigabit ports and IEEE 802.11 a/b/g/n wireless module. It can be configured to operate in AP/Client/Repeater Mode. You are able to configure **IGAP-610H+** by WEB interface via LAN port or WLAN interface. In addition, **IGAP-610H+** also provides P.D. feature on Ethernet port which is fully compliant with IEEE802.3af PoE P.D. specification. Therefore, **IGAP-610H+** is one of the best communication solutions for wireless applications on the industrial network.

### Features

- > High Speed Air Connectivity: Dual Band in IEEE 802.11 a/b/g/n and b/g/n WLAN interface selectable and support up to 300Mbps link speed
- > 12~48VDC power input on terminal block
- > 1 Gigabit Ethernet ports with 2KV isolation for PoE P.D.
- > Highly Security Capability: WEP/WPA/WPA-PSK(TKIP,AES)/ WPA2/WPA2-PSK (TKIP, AES)/802.1X Authentication supported
- > Support X-Roaming < 100 ms
- > Support Multiple-SSID to 4 SSID with VLAN
- > Support MAC Filter
- > High transmission power (27 dBm Max.)
- > High data throughput with HT40 2x2 MIMO
- > Support Long Distance Air Connectivity
- > Support AP/Client/Repeater
- > Wireless connecting status monitoring
- > Secured Management by HTTPS
- > Event Warning by Syslog, Email, SNMP Trap, and Relay output
- > Rigid IP-30 housing design
- > DIN-Rail and Wall-mount enabled

### Package Contents

The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

| Contents                    | Pictures                                                                            | Number |
|-----------------------------|-------------------------------------------------------------------------------------|--------|
| IGAP-610H+                  |  | X 1    |
| QIG                         |  | X 1    |
| DIN-rail kit                |  | X 1    |
| Wall-Mount Kit              |  | X 2    |
| 4-pin terminal block        |  | X 1    |
| Power cable with power jack |  | X 1    |
| CD                          |  | X 1    |

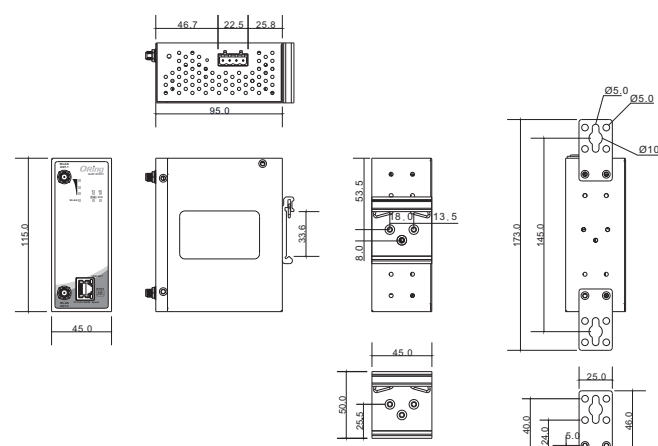
### Preparation

Before installation, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

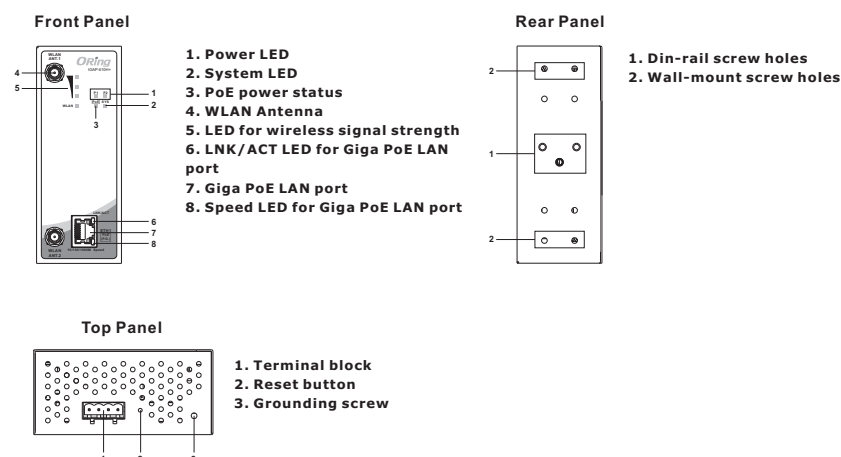
#### Safety & Warnings

- Elevated Operating Ambient:** If installed in a closed environment, make sure the operating ambient temperature is compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- Reduced Air Flow:** Make sure the amount of air flow required for safe operation of the equipment is not compromised during installation.
- Mechanical Loading:** Make sure the mounting of the equipment is not in a hazardous condition due to uneven mechanical loading.
- Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

#### Dimension Unit =mm (Tolerance ±0.5mm)



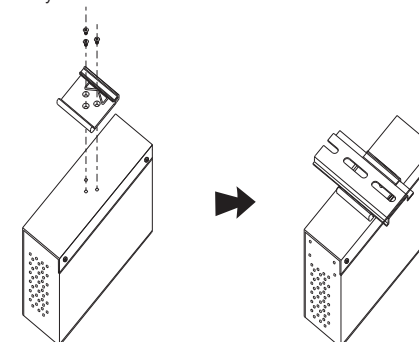
#### Panel Layouts



### Installation

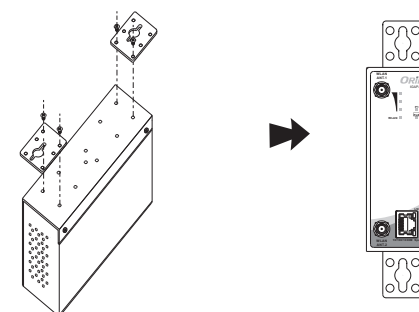
#### DIN-rail

- Step 1:** Slant the device and screw the Din-rail kit onto the back of the device, right in the middle of the back panel.  
**Step 2:** Slide the device onto a DIN-rail from the Din-rail kit and make sure the device clicks into the rail firmly.



#### Wall-mount

- Step 1:** Screw the two pieces of wall-mount kits to the top and bottom panels of the device. A total of eight screws are required, as shown below.  
**Step 2:** Use the device, with wall mount plates attached, as a guide to mark the correct locations of the four screws.  
**Step 3:** Insert a screw head through middle of the keyhole-shaped aperture on the plate, and then slide the device downwards. Tighten the screw head for added stability.



#### Wiring

##### Power inputs

The device supports dual redundant power supplies, Power Supply1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1, PWR2 are located on the terminal block.

- STEP 1:** Insert the negative/positive wires into the V-/V+ terminals, respectively.  
**STEP 2:** To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.



#### Network Connection

The device has three standard Ethernet ports. According to the link type, the device uses CAT 3,4,5,6 UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

| Cable      | Type                       | Max. Length        | Connector |
|------------|----------------------------|--------------------|-----------|
| 10BASE-T   | Cat. 3, 4, 5 100-ohm       | UTP 100 m (328 ft) | RJ-45     |
| 100BASE-TX | Cat. 5 100-ohm UTP         | UTP 100 m (328 ft) | RJ-45     |
| 1000BASE-T | Cat. 5/Cat. 5e 100-ohm UTP | UTP 100 m (328ft)  | RJ-45     |

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## IGAP-610H+

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### RJ-45 Pin Assignment

| 10/100 Base-T(X) RJ-45 port |            | 1000Base-T RJ-45 port |            |
|-----------------------------|------------|-----------------------|------------|
| Pin Number                  | Assignment | Pin Number            | Assignment |
| 1                           | TD+        | 1                     | BI_DA+     |
| 2                           | TD-        | 2                     | BI_DA-     |
| 3                           | RD+        | 3                     | BI_DB+     |
| 4                           | Not used   | 4                     | BI_DC+     |
| 5                           | Not used   | 5                     | BI_DC-     |
| 6                           | RD-        | 6                     | BI_DB-     |
| 7                           | Not used   | 7                     | BI_DD+     |
| 8                           | Not used   | 8                     | BI_DD-     |

Note: “+” and “-” signs represent the polarity of the wires that make up each wire pair.

### Configurations

After installing the device and connecting cables, the green power LED should turn on. Please refer to the following tablet for LED indication.

| LED                                      | Color | Status   | Description                             |
|------------------------------------------|-------|----------|-----------------------------------------|
| P.O.E                                    | Green | On       | PoE power on                            |
| P1/ P2                                   | Green | On       | DC power 1/2 is activated.              |
| SYS                                      | Green | On       | System is ready                         |
|                                          |       | Blinking | System is booting up                    |
| WLAN                                     | Green | On       | WLAN activated                          |
|                                          |       | Blinking | Transmitting wireless data              |
| WLAN Strength                            | Green | On       | WLAN signal strength.                   |
|                                          |       |          | 1<25%, 2<50%, 3<75%, 4<100%             |
| 10/100/1000Base-T(X) Fast Ethernet ports |       |          |                                         |
| LNK/ACT                                  | Green | On       | Port is activated                       |
| Speed                                    | Green | On       | Port is linked and running at 1000Mbps. |
|                                          | Amber | On       | Port is linked and running at 100Mbps.  |
|                                          |       | Off      | Port is linked and running at 10Mbps.   |

Follow the steps to set up the card:

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.2**



2. Log in with default user name and password (both are admin).

Please enter your user ID and password

ID 
 Password

Apply Cancel

3. After logging in, you should see the following screen. For more information on configurations, please refer to the user manual.

#### Resetting

To restore the device configurations back to the factory defaults, press the Reset button for a few seconds. Once the power indicator starts to flash, release the button. The device will then reboot and return to factory defaults.

### Specifications

| ORing WLAN Access Point Model               | IGAP-610H+                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical Ports                              |                                                                                                                                                                                                                                                                                                                            |
| 10/100/1000Base-T(X) Ports in Auto MDI/MDIX | 1                                                                                                                                                                                                                                                                                                                          |
| Antenna Connector                           | 2                                                                                                                                                                                                                                                                                                                          |
| PoE P.D Port                                | Present at ETH1<br>Fully compliant with IEEE 802.3af Power Device specification<br>Over load & short circuit protection<br>Isolation Voltage: 2000VDC min.<br>Isolation Resistance: 10 <sup>9</sup> ohms min                                                                                                               |
| WLAN Feature                                |                                                                                                                                                                                                                                                                                                                            |
| Antenna Connector                           | Reverse SMA Female                                                                                                                                                                                                                                                                                                         |
| Operating Mode                              | AP/Client/Repeater                                                                                                                                                                                                                                                                                                         |
| Modulation                                  | IEEE802.11a: OFDM<br>IEEE802.11b: CCK/DQPSK/DBPSK<br>IEEE802.11g: OFDM<br>IEEE802.11n: BPSK, QPSK, 16-QAM, 64-QAM                                                                                                                                                                                                          |
| Frequency Band                              | America / FCC : 2.412~2.462 GHz (11 channels)<br>5.180~5.240 GHz & 5.745~5.825 GHz ( 9 channels )<br>Europe CE / ETSI : 2.412~2.472 GHz (13 channels)<br>5.180~5.240 GHz (4 channels)                                                                                                                                      |
| Transmission Rate                           | 802.11b: 11, 5.5, 2, 1 Mbps<br>802.11g: 54, 48, 36, 24, 18, 12, 9, 6Mbps<br>802.11n: up to 300Mbps                                                                                                                                                                                                                         |
| Transmit Power                              | 802.11a: 23dBm ± 1.5dBm@6Mbps, 21dBm ± 1.5dBm@54Mbps<br>802.11b: 23dBm ± 1.5dBm@1Mbps, 23dBm ± 1.5dBm@11Mbps<br>802.11g: 23dBm ± 1.5dBm@6Mbps, 21dBm ± 1.5dBm@54Mbps<br>802.11gn HT20: 20dBm ± 1.5dBm@MCS7, 802.11gn HT40: 20dBm ± 1.5dBm @MCS7<br>802.11an HT20: 20dBm ± 1.5dBm@MCS7, 802.11an HT40: 20dBm ± 1.5dBm @MCS7 |
| Receiver Sensitivity                        | 802.11a : -93dBm ± 2dBm@6Mbps, -74dBm ± 2dBm@54Mbps<br>802.11b : -90dBm ± 2dBm@1Mbps, -90dBm ± 2dBm@11Mbps<br>802.11g : -90dBm ± 2dBm@6Mbps, -77dBm ± 2dBm@54Mbps<br>802.11gn HT20:-74dBm ± 2dBm@MCS7, 802.11gn HT40:-71dBm ± 2dBm@MCS7<br>802.11an HT20:-71dBm ± 2dBm@MCS7, 802.11an HT40:-68dBm ± 2dBm@MCS7              |
| Encryption Security                         | WEP: (64-bit, 128-bit key supported)<br>WPA/WPA2 PSK: TKIP and AES encryption (802.11i)<br>802.1X Authentication supported                                                                                                                                                                                                 |
| Wireless Security                           | SSID broadcast disable and enable                                                                                                                                                                                                                                                                                          |
| Protocol Support                            |                                                                                                                                                                                                                                                                                                                            |
| Protocol                                    | ARP,BOOTP, DHCP, DNS, HTTP, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, STP, RSTP                                                                                                                                                                                                                                              |
| Power                                       |                                                                                                                                                                                                                                                                                                                            |
| Redundant Input power                       | Dual DC inputs. 12~48VDC on 4 pin terminal block                                                                                                                                                                                                                                                                           |
| Power Consumption(Typ.)                     | 7 Watts                                                                                                                                                                                                                                                                                                                    |
| Overload current protection                 | Present                                                                                                                                                                                                                                                                                                                    |
| Reverse polarity protection                 | Present on terminal block                                                                                                                                                                                                                                                                                                  |
| Physical Characteristic                     |                                                                                                                                                                                                                                                                                                                            |
| Enclosure                                   | IP-30                                                                                                                                                                                                                                                                                                                      |
| Dimension (W x D x H)                       | 45 (W) x 95 (D) x 115(H)mm (1.77x3.74x4.53 inch.)                                                                                                                                                                                                                                                                          |
| Weight (g)                                  | 375g                                                                                                                                                                                                                                                                                                                       |
| Environmental                               |                                                                                                                                                                                                                                                                                                                            |
| Storage Temperature                         | -40 to 85°C (-40 to 185°F)                                                                                                                                                                                                                                                                                                 |
| Operating Temperature                       | -10 to 70°C (14 to 158°F)                                                                                                                                                                                                                                                                                                  |
| Operating Humidity                          | 5% to 95% Non-condensing                                                                                                                                                                                                                                                                                                   |
| Regulatory Approvals                        |                                                                                                                                                                                                                                                                                                                            |
| EMC                                         | CE EMC (EN 55024, EN 55032), FCC Part 15B                                                                                                                                                                                                                                                                                  |
| EMI                                         | EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15B class A                                                                                                                                                                                                                                                        |
| EMS                                         | EN 55024 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8 (PFMF), IEC/EN 61000-4-11(DIP))                                                                                                                                         |
| Shock                                       | IEC60068-2-27                                                                                                                                                                                                                                                                                                              |
| Free Fall                                   | IEC60068-2-31                                                                                                                                                                                                                                                                                                              |
| Vibration                                   | IEC60068-2-6                                                                                                                                                                                                                                                                                                               |
| Safety                                      | EN60950-1                                                                                                                                                                                                                                                                                                                  |
| MTBF                                        | 211477 hrs                                                                                                                                                                                                                                                                                                                 |
| Warranty                                    | 5 years                                                                                                                                                                                                                                                                                                                    |



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