# VUE-24-IO

## Wireless I/O: Long-Range, Scalable, Industrial I/O in 2.4 GHz



The Intuicom VUE-24-IO Wireless I/O and Gateway is a multiple I/O device that extends communications to equipment, sensors and actuators in local, remote, or difficult to reach locations. Designed with a long range, license-free wireless transceiver, the VUE-24-IO can provide IP-based mesh networking across sprawling environments typical of industrial applications.

**Secure:** AES encryption, advanced IP filtering, multilevel authentication, user access and change event logging features provide the user with the tools to ensure the highest level of data integrity and protection against malicious attacks.

**Flexible:** Ethernet native support provides solutions to connectivity challenges today and in the future. The Intuicom VUE-24-IO also provides Ethernet and serial gateway support for industrial protocols including Modbus TCP/RTU.

**Reliable:** The Intuicom VUE-24-IO utilizes several Mesh protocols which operates reliably with the challenges of obstructed paths by allowing the communications network to adapt to changes easily with redundancy. The Intuicom VUE-24-IO delivers with industry-leading transmit power and industrial ratings including a hazardous area rating of Class 1, Division 2.
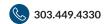
## Features

- 2.4 GHz, WPA-2 AES Secure (802.11 b/g) Operation
- Hazardous Area Rating of Class 1, Division 2
- Self-healing IP-based Wireless Mesh Networking
- End-Point, Repeater and Gateway Functionality
- Expand I/O with VUE Series Expansion Modules
- 8 digital I/O, User Configurable
- 4 Analog Inputs
- 2 Analog Outputs
- 10/100Base-T IEEE 802.3 Ethernet
- Secure 256-bit AES Encryption
- Modbus RTU and TCP Support
- Over-the-air Network Diagnostics and Configuration

## Applications

- Traffic and Transportation Control
- Energy Production
- Water and Wastewater Systems
- Agriculture
- Pipeline Monitoring and Leak Detection
- Electrical Utility Applications
- Automation and Control Solutions

## SPECIFICATIONS

| Specification | Description |
|---|---|
| **Transmitter And Receiver** | |
| Frequency[1] | 2.401–2.483 GHz 802.11 b/g |
| Transmit Power[1] | 200 mW (+23dBm) |
| Modulation | Direct sequence spread spectrum (DSSS) |
| | Orthogonal frequency-division multiplexing (OFDM) |
| Receiver Sensitivity | –94 dBm (11 Mbps) 802.11 b |
| | –75 dBm (54 Mbps) 802.11 g |
| Channels[1] | 13 Channels, 20 MHz |
| Data Rate | 1–54 Mbs (selects fastest connection rate available) |
| Typical Range (LoS) | 1300 ft (400 m) |
| Antenna Connector | SMA female |
| **Input And Output** | |
| Discrete Input[2] | 8 digital I/O (1-4 configurable as PI or PO) On-state voltage <2.1 VDC Wetting current: 5 mA Max. I/P pulse rate–DI 1/2: 50 kHz, DI 3/4: 1 kHz Min. I/P pulse width–DI 1/2: 10µs, PI 3/4: 0.2 ms |
| Discrete Output[2] | 8 digital I/O (1-4 configurable as PI or PO) Working voltage maximum: 30 VDC Working current maximum: 200 mA Maximum O/P pulse rate–PO max. rate: 1 kHz |
| Analog Input | 4 AI (2 differential, 2 single ended) Current range: 0–24 mA Voltage input range: AI 1/2: 0–25 V, AI 3/4: 0–5 V Accuracy (Voltage): 0.1% Resolution: 14 bits |
| Analog Output | 2 AO (sourcing) Current range: 0–24 mA Current resolution: 13 bits Accuracy (current): 0.1% |
| Analog Loop Supply | 24 Vdc at 100 mA maximum (current limited) |
| **LED Indication And Diagnostics** | |
| LED Indication | Power/OK, Radio TX/RX/Link, RS-232, RS-485, digital I/O, analog I/O status |
| **Reported Diagnostics** | |
| Radio Diagnostics | RSSI measurements (dBm), connectivity information/ statistics through Web page, dashboard, or local Modbus registers for SCADA |
| **Operation** | |
| Modes | Base, mesh node, or manual setup for advanced configuration |
| Repeater And Base | Maximum of 6 total remote/repeater/base/hot spot connections |
| Remote | Mesh node or fixed |

| Specification | Description |
|---|---|
| **Connections** | |
| LAN | 1 x 10/100 BASE-T autoMDIX RJ-45 |
| Serial | 1 x RS-232,1 x RS-485, 1200-230400 bps |
| **Protocols And Configuration** | |
| System Address | ESSID; 1- to 31-character text string |
| Protocols Supported | TCP/IP, UDP, ARP, DHCP, ICMP, HTTP, FTP, VLAN, 802.1Q, Modbus RTU, Modbus TCP |
| Configurable Parameters | Unit details, I/O mappings and parameters, Radio settings (refer to the user manual for details) Modbus TCP/RTU gateway Embedded Modbus master/slave for I/O transfer Ethernet mode, bridge (default), or router Prioritization of traffic flows, bandwidth efficiency features, bandwidth utilization, bridging, VLAN |
| User Configuration | Via HTTPS Web server Network access: USB or Ethernet Remote access: over the air |
| Security | Data encryption, 802.11i with CCWP 128-bit AES Support for 802 .1x radius server Secure HTTP protocol |
| Address Filtering | Easy mode automatic filtering or advanced IP address, whitelist/blacklist MAC address, whitelist/blacklist ARP filtering, whitelist/blacklist |
| **Compliance** | |
| EMC | FCC Part 15; EN 301 489-17; AS/NZS CISPR22 |
| RF (Radio) | FCC part 15.247; IC RSS 210; EN 300 328; AS/NZS 4268 |
| Safety | EN/IEC 60950 |
| Hazardous Area | UL® Class 1, Division 2; Pending IEC EX Zone 2; ATEX Zone 2 |
| **General** | |
| Size | 5.91" x 7.09" x 1.38" (150 mm x 180 mm x 35 mm) |
| Housing | IP20 rated high-density thermoplastic |
| Terminal Blocks | Removable, maximum conductor 12 AWG |
| Mounting | DIN rail |
| Temperature Rating | –40 to +158 °F (–40 to +70 °C) |
| Humidity Rating | 0–90% RH noncondensing |
| Weight | 1.1 lb (0.5 kg) |
| **Power Supply** | |
| Nominal Supply | 10.8–30 Vdc, under/overvoltage protection Sealed lead acid backup battery can be charged by main power supply input |
| Average Current Draw | 200 mA at 12 VDC (idle), 100mA at 24 VDC (idle) |
| Transmit Current Draw | 200 mA at 12 VDC, 100mA at 24 VDC |

*SPECIFICATIONS SUBJECT TO CHANGE*

1: Frequency range, number of channels, RF power specification may value depending on the country of application.
2: Discrete input and output function shared for total of 8 discrete inputs and outputs.

**Notes:** Available RF power and frequency many vary depending on country of application. Please check user manual for your application