VUE Series Wireless Ethernet Gateway

Long-Range, Scalable, High Speed, Industrial Wireless Communications for Secure Connectivity

OVERVIEW

Intuicom's VUE Series extends communications to equipment, sensors and actuators in local, remote, or difficult to reach locations. Designed with a long-range, high data speed wireless transceiver and standards-based native Ethernet protocol over the air, the VUE Series has the power and flexibility to perform reliably in 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 Series provides Ethernet and serial gateway support for industrial protocols including Modbus TCP/RTU and DNP3 I/O.

Reliable: The Intuicom VUE Series utilizes ProMesh™, which operates reliably with the challenges of obstructed paths by using automatic path selection and frequency agility to allow the communications network to adapt to changes easily with redundancy. The Intuicom VUE Series delivers with industry-leading transmit power and industrial ratings including a hazardous area rating of Class 1, Division 2.

Features

- 10 mW to 10 W RF power configurable
- Frequency Options: 148-174 MHz, 340–520 MHz, 894-960MHz
- +140 kbps data throughput
- Secure data protection with WPA and AES-256 encryption
- End-Point, Repeater and Gateway functionality
- Supports multiple data rates simultaneously for high performance over short and long communication links
- ProMesh automatic path selection and network formation
- Internal Web dashboard for immediate view of local I/O and diagnostics
- Frequency agility roaming provides reliability and flexibility within the network architecture
- Modbus RTU and TCP I/O Gateway
- DNP3 I/O gateway, including internal status registers
- Over-the-air network diagnostics and configuration
- Integrated digital I/O for alarms
- Expandable I/O for local alarms and inputs/outputs

Applications

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

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Technical Data: VUE Series

SPECIFICATIONS

Specification	Description			
Transmitter And Receiver				
Frequency [a]	148 - 174 MHz, 340 - 400 MHz, 400 - 480 MHz 470 - 520 MHz, 894 - 902 MHz, 928 - 960 MHz			
Transmit Power-Peak [a]	10 mW-10 W (+40 dBm) configurable			
Transmit Power	QPSK	4 W (+36 dBm)		
	16-QAM, 64 QAM	2.5 W (+34 dBm)		
	2-FSK, 4-FSK	10 W (+40 dBm)		
Modulation	QPSK, 16-QAM, 64-QAM 2-FSK or 4-FSK (compatibility mode)			
Receiver Sensitivity 6.25/12.5/25 kHz	QPSK-FEC	–116 dBm		
	QPSK	–113 dBm		
	16-QAM	–104 dBm		
	64-QAM	–97 dBm		
	2-FSK	–110 dBm		
	4-FSK	–102 dBm		
Channel Spacing	6.25, 12.5, 25.0 kHz (software configurable)			
Data Rate Raw No Compression [b]	Encoding	Channel		
		6.25 kHz	12.5 kHz	25. 0 kHz
	QPSK-FEC	4 kbps	8 kbps	16 kbps
	QPSK	8 kbps	16 kbps	32 kbps
	16-QAM	16 kbps	32 kbps	64 kbps
	64-QAM	24 kbps	48 kbps	96 kbps
	2-FSK		4.8 kbps	9.6 kbps
	4-FSK		9.6 kbps	19.2 kbps
Typical Data Throughput	64-QAM	45 kbps	80 kbps	140 kbps
Typical Range (LoS QPSK-FEC)	62 miles (100 km) at 4 W 10 miles (16 km) at 0.5 W			
Antenna Connector	SMA Female			
Protocols And Configuration				
System Address	ESSID; 1–31 character text string			
Networking Protocols	TCP/IP, UDP, ARP, DHCP, DNS, ICMP, HTTP, VLAN 802.1Q, IPv6 pass through			
Industrial Protocols	Gateway: Modbus RTU, Mudbus TCP, DNP3 I/O Pass through: EtherNet/IP, Profinet, DNP, IEC 61850, and others			
Configurable Parameters	Unit details, radio settings, dashboard, IO Plus logic DNP3 I/O and gateway (level 2+) Modbus TCP/RTU gateway Embedded Modbus master/slave for I/O transfer Frequency agility parameters for automatic selection of radio paths, prioritization of traffic flows, bandwidth efficiency features, bandwidth utilization, redundancy, routing, bridging, VLAN			
User Configuration	Network access: USB or Ethernet Remote access: over the air			
Security	WPA2-PSK, AES 256 bit, multilevel password protected configuration			
IP Filtering	IP address, MAC address, ARP filtering whitelist/ blacklist			
LED Indication And Diagnostics				
LED Indication	Power/OK, Radio TX/RX/Link, RS-232, RS-485, digital I/O, analog I/O status			

Specification	Description
Reported Diagnostics	
Network Diagnostics	Diagnostic capture to Wireshark™ format file
Radio Diagnostics	Channel utilization, RSSI measurements (dBm), background noise, connectivity information/ statistics available Web/Modbus reg
Logging	Optional internal data logging for I/O and events. Logging memory 1 MB
Connections	
LAN	1 x 10/100Base-T auto -MDIX RJ-45
Serial	1 x RS-232, 1 x RS-485, 1200-230400 bps Serial over IP modem support
Operation	
Modes-topology	Point to multipoint Base, repeater, remote unit types ProMesh automatic path selection or fixed links Manual mode for advanced configuration
Input And Output	
Discrete Input [c]	2 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 Max. I/P pulse width-DI 1/2: 10 µs
Discrete Output [c]	2 digital I/O configurable as PI or PO Working voltage maximum: 30 VDC Working current maximum: 200 mA Max. O/P pulse rate–PO max. rate: 1 kHz
Expansion	VUE-EX series I/O modules
Compliance	
EMC	FCC CFR47 Part 15; EN 301 489-3; EN 301 489-5
RF (Radio)	FCC CFR47 Part 90; IC RSS 119; EN 300 113; EN 300 220; AS/NZS4295; AS/NZS4268
Hazardous Area	Class I, Division 2 IEC EX Zone 2; ATEX Zone 2
Safety	EN/IEC 62368
Power Supply	
Nominal Supply	10.8-30 VDC, under/overvoltage protection
Battery Charge	Lead-acid or gel cell backup, 500 mA charge
Average Current Draw	220 mA at 13.8 V (idle), 130 mA at 24 V (idle)
Transmit Current Draw	2.5 A at 13.8 V (10 W RF), 1.5 at 24 V (10 W RF) 0.9 A at 13.8 V (500 mW RF), 0.5 A at 24 V (500 mW RF)
General	
Size	7.20 x 1.38 x6.20 inches (183 x 35 x 156 mm)
Housing	Powder-coated aluminum and high-density thermoplastic, IP20 rated
Mounting	DIN rail
Terminal Blocks	Removable, max. conductor 12 AWG
Temperature Rating	–40 to +158 °F (–40 to +70 °C)
Humidity Rating	0–90% RH noncondensing
Weight	1.6 lb (0.7 kg)

SPECIFICATIONS SUBJECT TO CHANGE

a: Available RF power and frequency may vary depending on country and model selected. Please confirm with local regulatory body.
b: Data compression will provide an improvement in over-the-air data throughput of up to 50%, depending on data content.
c: Discrete input and output function shared for total of 2 discrete inputs and outputs.