obvius

Energy Information Made Obvius

PRODUCT DATASHEET

ModHopper

Wireless Modbus/Pulse Transceiver

MODHOPPER R9120-5 AND R9120-5T

The ModHopper is a breakthrough mesh technology design that makes connecting Modbus and pulse devices simple and cost effective. Our "smart" ModHopper transceivers eliminate the need for costly wiring runs allowing users to capture meter data in the most challenging retrofit and campus environments. Collect meter points in existing buildings with minimum down-time or disruption of day-to-day operations.

WHY USE MODHOPPERS FOR WIRELESS METERING

- Designed specifically for wireless metering
- 256Bit AES, FIPS-197 certified, J/F-12 8306
- No software or programming required
- Devices automatically configure when powered
- Wireless "mesh" network self-healing, self-optimizing
- Frequency hopping, spread spectrum (FHSS)
- Connect up to 32 Modbus and 2 pulse devices per ModHopper (expandable)
- Long distance communication (3000ft indoor / 14 miles LOS)
- Visual display of signal strength (LEDs)
- Multiple independent network capability
- Reliable, constant two-way communication and packet verification
- Point to multi-point communication
- Field upgradable firmware

WIRELESS COMMUNICATION

Obvius developed a wireless Modbus/Pulse transceiver to capture remote meter points. Our high-powered radios allow you to easily collect meter data from multiple buildings over long distances. Our unique "mesh" technology provides optimized routing of communications with no pc or software configuration, meaning the ModHopper works immediately "out of the box." This self-managed mesh network means that the system will function with high reliability where other wireless systems fail due to short- or long-term interference. ModHoppers can be used with any Modbus Master or gateway making them an ideal solution for any project. Ask us about international frequency options.

COMPATIBILITY

The ModHopper is compatible with virtually any PLC or Modbus RTU device, allowing customers the flexibility to use the ModHopper in existing Modbus applications. The ModHopper is a "smart" device, which requires no programming. If used with the Obvius AcquiSuite, users can take advantage of numerous diagnostic tools, including a graphical display of the wireless mesh network.

PARTNERS

Obvius' outstanding integration and software partners supplement our products and services to ensure you receive the very best energy monitoring solution.

APPLICATIONS

- Utility submetering (electric, gas, water, etc.)
- Metering in existing buildings (retrofit)
- Metering on campus environments
- Government advanced metering projects (256Bit AES, FIPS-197 certified, J/F-12 8306)
- Multi-tenant submetering projects
- Industrial / Manufacturing facilities
- Demand Response
- Renewable Energy – PV projects (inverters, string monitoring)

ABOUT OBVIUS

Obvius manufactures data acquisition and wireless connectivity products specifically for energy management. We deliver cost-effective, reliable hardware designed to speed up installation. Our products are based on an open architecture allowing our customers to collect and log energy information from virtually any meter or sensor. The ability to support multiple communication options provides remote access to all your energy information. Founded in 2003, Obvius is located in Tualatin, Oregon. We serve a global clientele and continue to drive innovation by simplifying data collection.

SOLUTIONS

- Data Acquisition
- Wireless Communication
- Meters & Sensors
- Custom Packaged Solutions
- Integration & Software Partners

Modhopper R9120-5

Obvius wireless solutions help customers collect and distribute energy information in the most challenging environments. Used as a wireless conduit for Modbus and pulse meters, users can eliminate costly wiring runs and eliminate integration headaches. If used with our AcquiSuite, Obvius can truly deliver a plug-and-play metering solution.

Specifications	
Processor	60MHz ARM7 embedded CPU
LEDs	3 x RF, 2 x RS-485, 2 x Pulse, Alive, Alarm
Power	
North America	110-120VAC, 60Hz, primary, 9-12VDC class 2 power supply included
CE/Europe	100-240VAC, 50-60Hz, primary (power supply not included)
R9120-5T	9-30VDC, 900mA Required
Communication	
Protocols	Modbus RTU, 2-wire
Addressing	Modbus address may be set from 1 to 247 via dipswitch
Baud Rate	9600/19200 baud, N, 8, 1
RF	Frequency hopping, spread spectrum (FHSS), ISM band (see table)
Inputs	
I/O	2x Pulse, dry contact, standard or KYZ, closure threshold 100Ω to 2.5Ω user selectable
Pulse Rate	User selectable to 10Hz, 50Hz, 100Hz, 250Hz • Pulse rate option 10Hz, minimum pulse width 50ms • Pulse rate option 50Hz, minimum pulse width 10ms • Pulse rate option 100Hz, minimum pulse width 5ms • Pulse rate option 250Hz, minimum pulse width 2ms
Storage	Pulse counts stored in non-volatile memory
Modbus	Modbus RTU, 2-wire, hard-wire connect up to 32 devices (expandable)
Range	
R9120-5	900MHz, 1W, 3000ft (900m) indoor, 14 miles (22km) line of sight
Physical	
Weight	1.25lbs (0.67 kg)
Size	6.5" x 4.5" x 2" (260mm x 64mm x 45mm)
Environment	
North America	-30 to 70C, 0-90% RH, non-condensing (-T version only, R9120-5T)
North America	0 to 50C, 0-90% RH, non-condensing
CE/Europe	5 to 40C, 0-90% RH, non-condensing
Altitude	2000M max
Pollution	Degree 2
Codes and Standards	
FCC ID	FCC ID OUR-9XTEND
IC (Industry Canada)	IC 4214A-9XTEND; FCC CFR 47 Part 15, Class A
Encryption	256Bit AES
Additional Notes	
NEMA enclosures available upon request. Manufactured in the USA. CE	

The R9120-5 is not cross-compatible with R9120-3 models. For use with any Modbus RTU device/server.

As per SIPCO LLC, this product may be used in a system and employ or practice certain features and/or methods of one or more of the following patents: U.S. Patent No. 7,103,511, U.S. Patent No. 6,914,893, U.S. Patent No. 6,891,838, U.S. Patent No. 5,714,931, U.S. Patent No. 6,233,327, U.S. Patent No. 7,397,907, U.S. Patent No. 6,618,578, U.S. Patent No. 7,079,810, U.S. Patent No. 7,295,128, U.S. Patent No. 7,263,073, U.S. Patent No. 7,480,501, U.S. Patent No. 6,437,692, U.S. Patent No. 7,468,661, U.S. Patent No. 7,053,767, U.S. Patent No. 7,650,425, U.S. Patent No. 7,739,378