

DESCRIPTION

The ModHopper R9120-5 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 downtime or disruption of day-to-day operations.

Why Use ModHoppers for Wireless Metering

- Designed specifically for wireless metering
- 256 Bit 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 (3000 ft 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

Badger Meter 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 functions with high reliability where other wireless systems fail due to short-term 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.

Partners

Badger Meter's outstanding integration and software partners supplement our products and services so you receive the very best energy monitoring solution.



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 that requires no programming. If used with the Badger Meter Model 3700, the ModHopper offers numerous diagnostic tools, including a graphical display of the wireless mesh network.

Applications

- Utility submetering (electric, gas, water and other services)
- Metering in existing buildings (retrofit)
- Metering on campus environments
- Government advanced metering projects (256 Bit AES, FIPS-197 certified, J/F-12 8306)
- Multi-tenant submetering projects
- Industrial/manufacturing facilities
- Demand response
- Renewable energy—PV projects (inverters, string monitoring)

SPECIFICATIONS

Processor	60 MHz ARM7 embedded CPU
LEDs	3 x RF, 2 x RS-485, 2 x Pulse, Alive, Alarm
Power	North America: 110...120V AC, 60 Hz, primary, 9...12V DC class 2 power supply included CE/Europe: 100...240V AC, 50...60 Hz, primary (power supply not included)
Communication	
Protocols	Modbus RTU, 2-wire
Addressing	Modbus address may be set from 1...247 via DIP switch
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 100 Ω...2.5 Ω user selectable
Pulse Rate	User selectable to 10 Hz, 50 Hz, 100 Hz, 250 Hz Pulse rate option 10 Hz, minimum pulse width 50 ms Pulse rate option 50 Hz, minimum pulse width 10 ms Pulse rate option 100 Hz, minimum pulse width 5 ms Pulse rate option 250 Hz, minimum pulse width 2 ms
Storage	Pulse counts stored in non-volatile memory
Modbus	Modbus RTU, 2-wire, hard-wire connect up to 32 devices (expandable)
Range	R9120-5: 900 MHz, 1 W, 3000 ft (900 m) indoor, 14 miles (22 km) line-of-sight
Weight	1.25 lb (0.67 kg)
Size	6.5 in. × 4.5 in. × 2 in. (260 mm × 64 mm × 45 mm)
Environmental	North America: 0...50° C, 0...90% RH, non-condensing CE/Europe: 5...40° C, 0...90% RH, non-condensing
Altitude	2000 m maximum
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	256 Bit AES

Additional Notes

The R9120-5 is not cross-compatible with the Badger Meter 345WT. 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

Control. Manage. Optimize.

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