

# R9120-5 ModHopper-ER® Wireless Modbus/Pulse Transceiver

## Now With 256 Bit AES Encryption!



### DESCRIPTION

The new R9120-5 expands on the industry leading Modhopper line by providing an extended range and additional security through 256 bit AES encryption. The R9120-5 is a dynamic addition to the existing line of Modhopper® wireless Modbus/pulse transceivers as it provides a cost effective solution for remote, high security facilities or bases. The Modhopper provides a self optimizing wireless interface between multiple Modbus devices and networks, perfect for:

- Wireless communications between remote buildings
- Adding Modbus RTU devices to any network or base environment without the need for costly communications wiring

Modhopper® is a breakthrough mesh technology design that makes wireless connectivity simple and cost effective:

- Connect up to 128 RS 485 Modbus RTU devices to any Modbus RTU network
- AES encryption means Modhoppers provide the most secure wireless network
- Unique “mesh” technology means optimized routing of communications with **NO PC OR SOFTWARE CONFIGURATION!**
- Accepts standard pulse inputs or Modbus
- Pass through device for any Modbus RTU network

The Extended Range Modhopper is the perfect solution for connecting new or existing Modbus and pulse devices (meters, sensors, etc.) from remote, high security locations without the need for costly wiring runs, core drilling or conduit. Simply connect the Modbus RTU devices to the serial port on the Modhopper and the transceivers will automatically detect the optimum routing to insure reliable and timely data communications. Data from each Modhopper wireless transceiver is passed from one transceiver to another to reach its ultimate destination. 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 with radio signals.

### Benefits of AES Encryption

The Extended Range Modhopper utilizes 256 bit AES encryption to ensure security of wireless transmissions. It requires the same key to be used for encryption and decryption. To utilize the security feature, the users have two options. They can use the web browser interface in the Acquisuite or they can utilize the software configuration tool provided by Obvius, which allows the user to connect each Modhopper directly to their computer and modify the key directly. Once configured, the key will be stored within the Modhopper and only the Modhoppers with the assigned key can access the subnet ensuring the highest security possible.

### Applications

- Military bases
- Tenant submetering
- Campus environments
- Adding Modbus RTU devices to existing networks
- Gathering energy information from remote buildings
- Monitoring performance of building systems (e.g., chillers, boilers, fans)

### Easy installation saves time and money

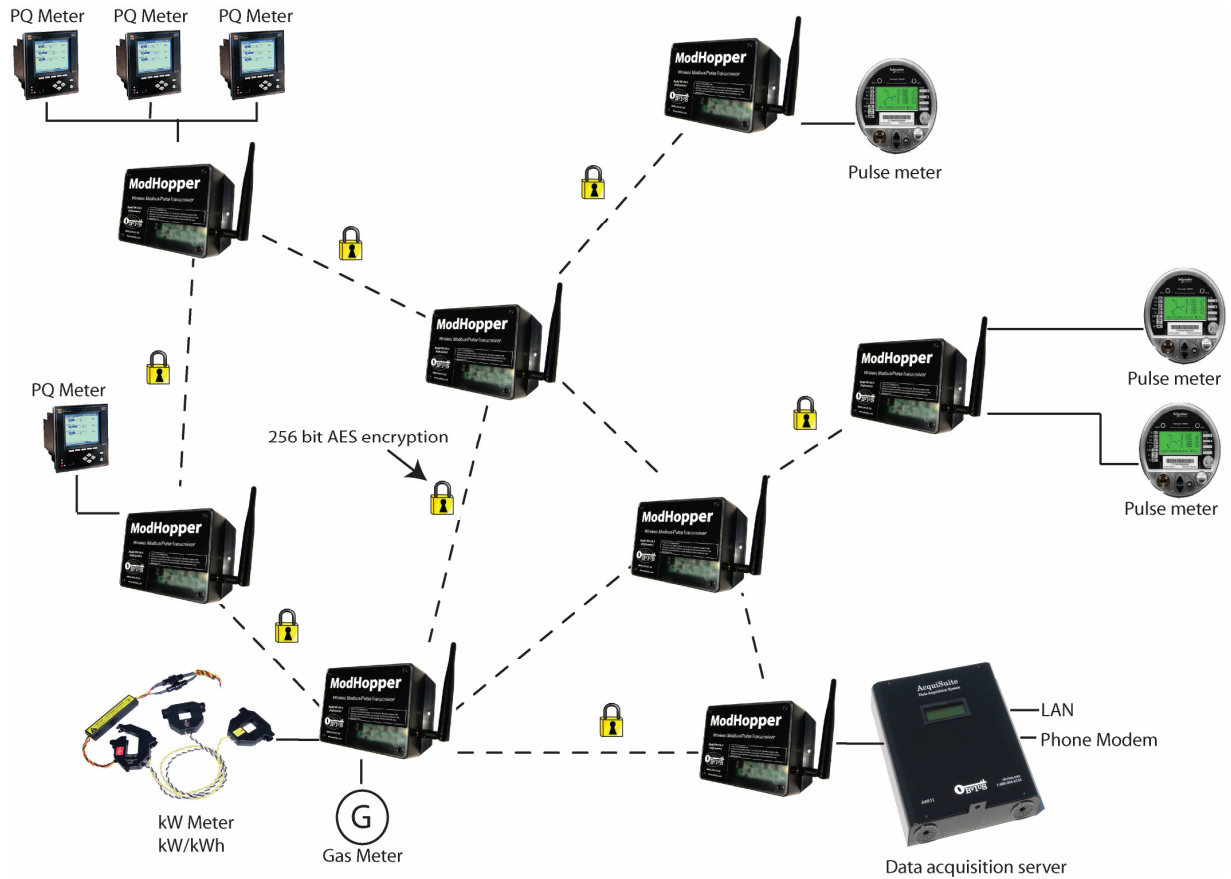
- Self-optimizing hopping technology makes installation easy and cost effective
- Intelligent Modhopper transceivers eliminate the need for costly PC's and software
- Customized design for Modbus RTU device interface provides optimized performance with minimal overhead
- Pulse inputs allow connection to existing meters for electricity, gas, water, steam or BTU's
- Wireless communications up to 3000 ft indoors per hop allows monitoring of remote transformers and meters without expensive trenching
- Wall mount design makes installation a snap and assures high system reliability

### Mesh network design makes adding devices simple and inexpensive

- Intelligent Modhopper nodes continuously monitor wireless traffic to optimize routing
- Modhopper nodes and devices can be added at any time and are automatically added to the routing
- Scalable design means that projects can be completed in stages as resources become available

### AcquiSuite, Modhopper and Buildingmanageronline.com (BMO) provide a complete system solution

- The AcquiSuite data acquisition server from Obvius provides plug and play connectivity to meters from most meter manufacturers using any
- Industry standard protocols provide flexible communications using either existing LAN's or phone lines to BMO or other software



## SPECIFICATIONS

<b>Processor</b>	ARM
<b>Firmware</b>	Field upgradeable
<b>Inputs</b>	2x dry contact Modbus RTU
<b>Modbus input</b>	2 wire RS485 (9600 or 19200 baud)
<b>LED</b>	2 x RF, 2 x RS 485, 2 x pulse, Alive, Alarm
<b>Power requirement</b>	110 – 120 VAC or 9-30 VDC
<b>Ordering Information</b>	

**R9120-5** – Barrel jack power supply with power supply included  
**R9120-5T** – Screw terminal, requires 9-30VDC

Model:	R9120-3	R9120-3AU	R9120-5	R24120-3
Encryption	No	No	256 bit AES	No
Max Range (indoor)	1500ft (450m)	1500ft (450m)	3000ft (900m)	300ft (90m)
Max Range (line of sight)	7 miles (11km)	7 miles (11km)	14 miles (22km)	3 miles (5km)
RF	900MHz, 100mW	900MHz, 100mW Australia/NZ	900MHz, 1000mW	2.4GHz, 100mW
Input Power	9-30VDC, 200mA	9-30VDC, 200mA	9-30VDC, 900mA	9-30VDC, 200mA

## COMPATIBILITY

\*Modhoppers must be the same model (see above) to ensure compatibility.

