

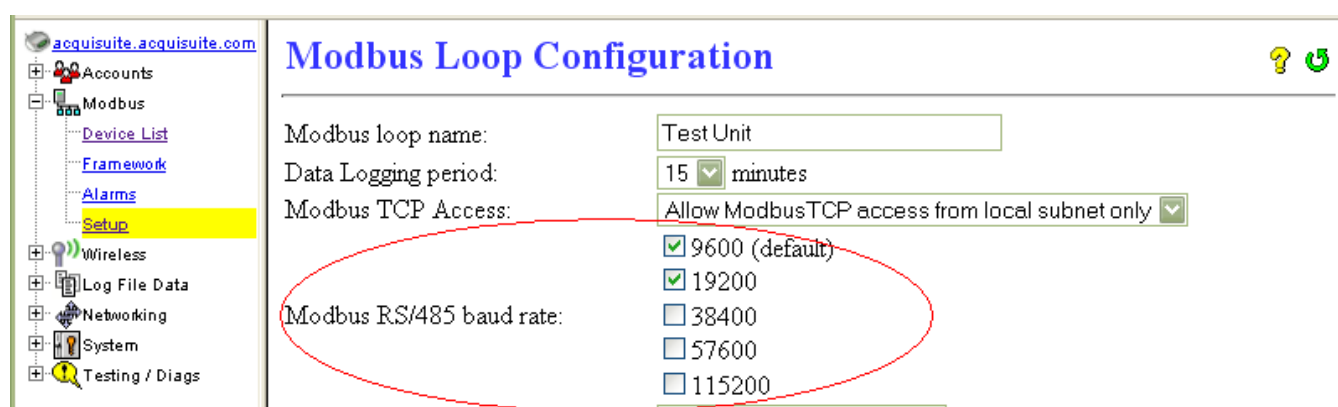
Technote 10 – ModHopper Install Questions

Author: Brett Westin

Time-out issues – what do they mean?

“I connected my ModHoppers and then checked the status with my AcquiSuite to verify comms, and now I have error messages - what causes this?”

More than likely one of the ModHoppers has its baud rate selected to the 19200 baud rate, and the AcquiSuite is set to its default 9600. Log into your AcquiSuite and click on the Modbus Setup page. Select the 9600 and 19200 speeds for the baud rate, as shown here:



Baud Rate interoperability (I/O Modules, H8xxx, etc.)

Baud rate selection is important and its selection depends on a few import issues. The ModHopper allows selection of either 19200 or 9600 baud rate. Most of the time unless you are *absolutely* sure all of your devices are communicating at 19200, it's best to place the switch in the 9600 baud rate selection, and leave it there. This still provides plenty of speed for any data you are monitoring. A good example of this would be the following: a ModHopper connected to several Veris Enercept Modbus data meters, and perhaps an additional mix of more complex data meters, and an assortment of A8332-8F2D Flex I/O Modules as well. Although many of the devices could be capable of transmitting at 19200, some may only be able to transmit at 9600 baud. This is why it's a good idea to “test bench” all of your connections and confirm functionality before deployment to the customer site. This may not always be possible or feasible to do. Connect everything up, and verify that all units can be “seen” from the AcquiSuite browser interface.

Timeout

The ModHopper introduces delay in the modbus query cycle as the data is passed over the wireless link to another ModHopper. The AcquiSuite Modbus RS485 Timeout should be adjusted upwards, such as 500mS, up to 1.5 or 2 seconds, to allow the ModHopper time to relay the query and response between locations.

Channel Selections

When should you use the other radio channels? Ideally in a busy industrial control network, you may have the need to have multiple wireless Modbus networks. It may also be necessary to have units separated from each others' network. So switching channels would allow multiple separate Modbus networks to operate in the same area. Placing each group on its own channel would help keep traffic moving without inference from the other separate ModHopper networks on the Modbus network. The channel selector is rarely needed. Most of the time leaving all of the switches in the off positions will work just fine. The feature is there only for very special situations. The three switch settings allow you to choose up to six possible channels.

Adding higher gain antennas

In some special installations some customers may want to have a directional antenna used to improve radio reception. If you decide to add another antenna, these basic specs should help you to order the right kind of antenna:

- 900 MHz ISM band
- 50 ohms nominal impedance
- 2:1 VSWR
- RP-SMA connector type

Be careful when selecting another antenna. If you are uncertain about what type of antenna you need, or what type of application might need an additional antenna, please call Obvius Technical Support.

Adding additional devices (up to 32)

Up to 32 devices can be added to just one ModHopper. In the Modbus loop, the ModHopper acts just like a run of cable or wire for Modbus communications. So really any Modbus RS-485 device you want to connect with, you can. Where you might normally spend the time and labor to run a wire communication wire drop, you could have your remote Modbus devices communicating in less than an hour with ModHoppers. Something else to consider is that although you can place up to 32 Modbus devices on one ModHopper, an individual device may itself have multiple inputs. A good example of this is the A8332-8F2D Flex I/O Module. It has 8 configurable inputs (such as 4 pulse inputs and 4 analog inputs), all in a very small form factor.

