Modbus-Stick Data Mirror Mode

At the center of each SignalFire network is a single SignalFire Gateway where all data from the remote nodes is collected. The data is then available via a local Modbus connection. A limitation of this topology is that a network can only have one Gateway, and thus a node is only available at one location. There may be instances in which the data needs to be available via Modbus at multiple locations. The Modbus Stick’s Mirror Mode can accomplish this by pulling data wirelessly from a Gateway.

**Mirror Mode Operation**

In Mirror Mode, the Modbus Stick wirelessly pulls a limited amount of data from the primary location (Gateway) and makes it available locally at a secondary location for polling over RS485 by a Modbus master. The Modbus Stick in Mirror Mode can read up to 34 standard 16bit Modbus registers over the air. Note that a 32-bit register counts as two 16-bit registers.

**Configuration**

1. From the Settings menu in the Modbus-Stick ToolKit window, select “Mirror Function” and click Enable.
2. Assign a unique slave ID to the Modbus Stick for the network.
3. Configure the radio parameters (network, network group, encryption) to match the Gateway from which to mirror the data.
4. Set the Checkin Interval to control how often the Modbus Stick will wirelessly poll the mirrored registers. This will affect the Gateway’s packets/minute count.
5. Set the baud rate and UART mode to match that of the Modbus master that will be polling the mirror stick.
6. Configure the registers to mirror in the Mirrored Register table and click the “Write New Mirror Register List to Device” button.
POLLING THE MIRRORED DATA

The mirror data is polled from the Mirror stick exactly as if it were being polled directly from the Gateway. That is the same Slave ID and register addresses are polled. In the example configuration screenshot, register addresses 4005-4007 will be requested from Slave ID 1, while register addresses 4000-4001 will be requested from Slave ID 5, all using function code 3.