

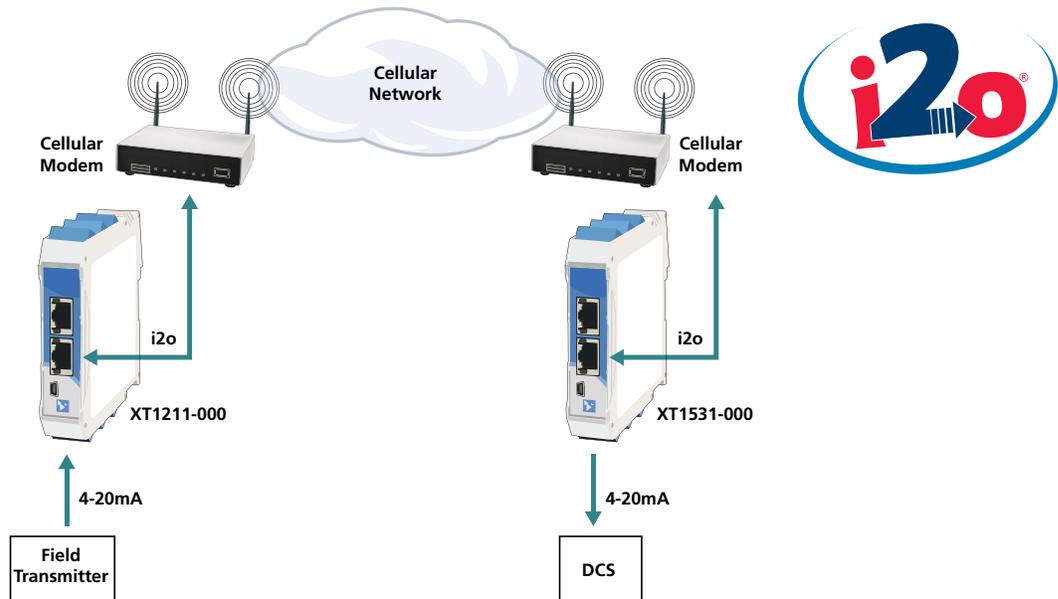
Application Note: Save Money When Using i2o Over Cellular Networks

Defining the Problem:

Many customers use [Acromag's peer-to-peer i2o network protocol](#) to send analog or discrete signals over long distances. For example, a 4-20mA signal can be sampled by an analog input network module, and then using i2o technology, transmit that information to a companion analog output network module at a remote location. The network (Ethernet) interface can be transmitted wirelessly by using radio or cellular modems. These modems are transparent to the Ethernet signal and merely forward the Ethernet packets to the far end. When using a cellular modem, it is important to minimize the connection time and amount of data being sent, since cellular service providers charge by the amount of data being sent.

System Requirements:

The application below shows an XT1211-000 current input module sampling a 4-20mA signal from a field transmitter and sending the data out over the Ethernet interface. Using i2o protocol, the XT1211's inputs are mapped to an XT1531-000 at the far end which has 4-20mA outputs that connect to the analog inputs of a DCS. The network interfaces are connected to cellular modems at each end so that the data can be transported over a long distance using the cellular network.



Featured Products:

[XT1211-000](#): 8-channel differential analog current input module

[XT1531-000](#): 4-channel analog current output, 4-channel digital I/O module, Modbus/TCP and i2o protocol.

Implementing the Solution:

See the next page

Why Acromag:

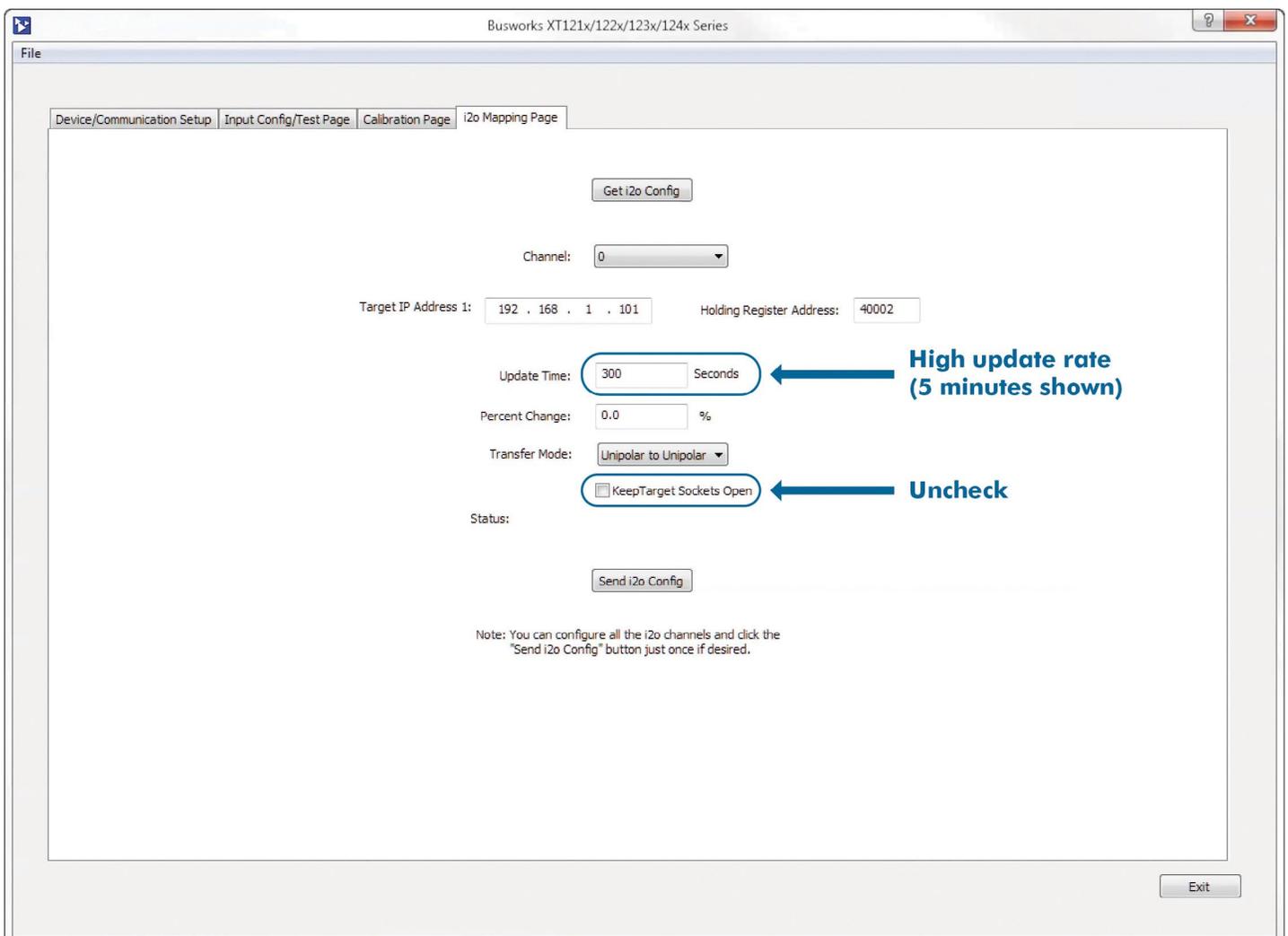
Acromag is known in the Process industry for the accuracy and reliability of its products. Acromag's Busworks XT series products support a variety of network protocols such as Modbus TCP/IP, Ethernet IP, Profinet, and i2o.

Application Note Continued: Save Money When Using i2o Over Cellular Networks

Implementing the Solution:

On the i2o mapping page, the XT1211-000 input module is configured to map up to four of its analog input channels to the four analog output channels of the XT1531-000 output module. This configuration is shown below (only Channel 0 is shown)

By setting the output update rate to a relatively high value (in this case 5 minutes), the amount of data being sent is minimized. Also, by unchecking the "Keep target sockets open", you are telling the XT1211 to only open the network connection when it's ready to send data and then to close the connection. These settings will minimize network traffic and keep cellular data charges down.



Notes:

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