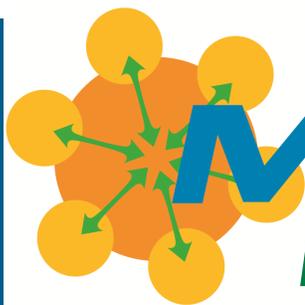


MODBUS  
ORGANIZATION, INC.



# Modbus Newsletter

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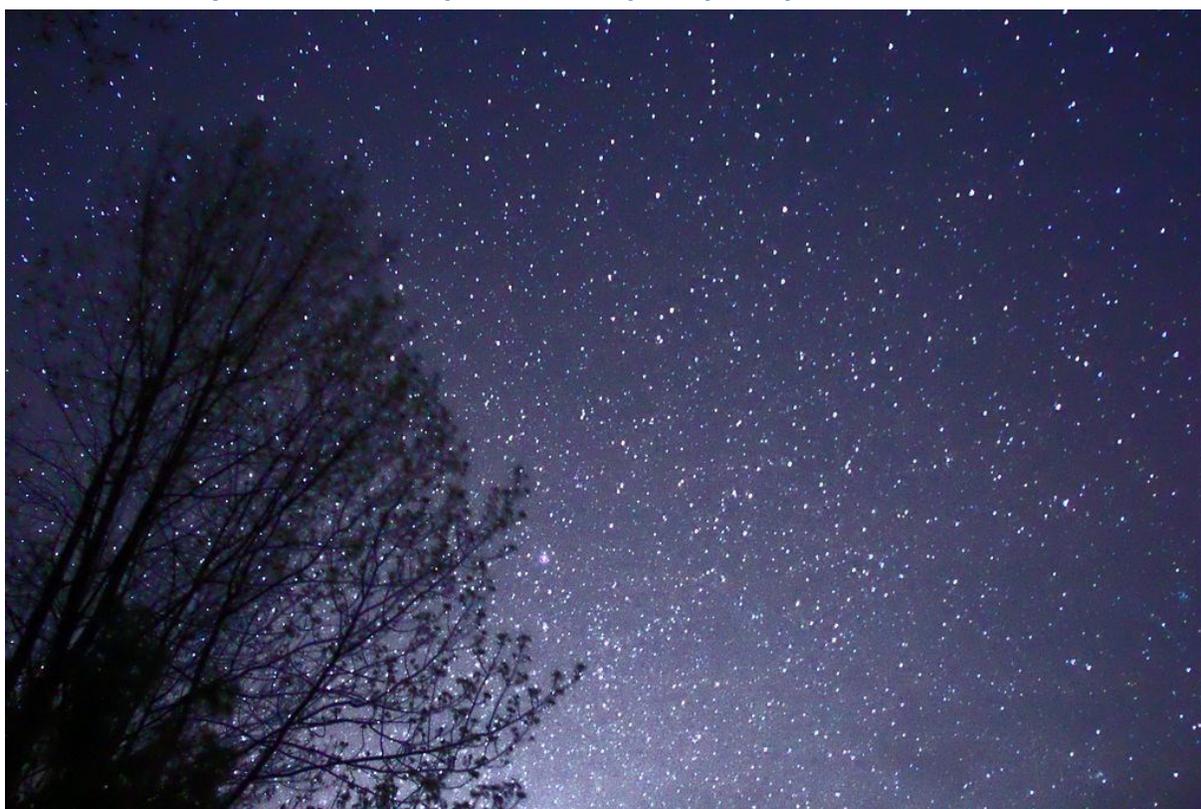
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## To All Our Friends and Supporters...

We wish to extend our best wishes for a joyous  
holiday season and peace and prosperity in the New Year!



*Photo credit Michael J. Bennett, Muskoka, Ontario, Canada, via Wikimedia Commons*

# Meet Our Members...

**NETxAutomation** provides software solutions and project support for home and building automation.

The company offers both Server and Client products for building management systems, with interfaces to accommodate different technologies and applications.



Solutions include OPC and PC- and web-based visualization options.

The NETx BMS Server collects and processes data points from building automation systems, using open technologies, such as Modbus, OPC, KNX, BACnet, and SNMP. Its embedded web server allows users to create web-based visualizations that can be displayed on any devices (including touch-screens).

NETx BMS Server is more than a simple data server - it's a full building management solution.



NETx BMS Server

*Joining the Modbus Organization is easy and affordable. Download the membership application to learn more.*

Based southwest of Paris, France, **AGILiCOM's** offerings include gateways that address network communications between devices using CANopen, Modbus, DeviceNet, and PROFIBUS.

The AGILiPLUG PROFIBUS/Modbus gateway pictured right works as master or slave.



As a master, AGILiPLUG can communicate with up to 20 Modbus slaves. It's designed to be added to a motherboard instead of a traditional RS232/485 driver.



Founded in Michigan in 1957, **Acromag's** products include a wide variety of I/O devices for manufacturing, military, scientific, public utility, and transportation applications.

This includes networked I/O, with analog and discrete I/O modules for Ethernet, Modbus, and Profibus.

The company's signal conditioning line features more than 100 transmitters, isolators, alarms, and computation modules.

Acromag's Modbus TCP I/O products offer solutions for remote I/O, distributed process control, and factory automation applications. Analog and discrete Ethernet I/O modules interface sensors and actuators to controllers with Modbus TCP or Ethernet/IP CIP protocol network communication.



# Q&A from the Modbus Discussion Forum

## Multi Baud Rate on the Same RS485 Modbus RTU Bus...

### Denaize asked:

Is it possible to have different baud rates (and parity) for each slave on a RS485 MODBUS RTU bus?

For example:

- 1 slave ID=25 Bd=9600
- 3 slaves ID= 32,33,34 Bd=38400 parity=even
- 1 slave ID=125 Bd=38400 parity=none

As the slave must check parity error and frame error (CRC), a slave cannot respond to an order sent to another slave with another baud rate, can it?

I find nothing in the specification that talks about this.

### David 2 responded:

You need a separate serial port for each unique set of serial settings.

In your case, three ports, unless you can change the parity on ID 125 to "even" and run ID 125 with the ID 32, 33, and 34 where the baud rate and parity are common to all four IDs.

Then you'd need only two serial ports.

### Denaize asked for clarification:

Thank you for answer.

I made a test; it works well! (mix 9600 and 38400 bd slaves) and it seems logical to me because slave must stay quiet if [it] cannot understand (parity error, frame error, or timing t1.5 t3.5 error).

Today I have one old device to connect to a new bus with several modern devices (38400 bd needed). The old is a 9600 bd one and nobody knows how to reconfigure it.

### David 2 added:

Wow, different slaves at different serial settings work on the same RS-485 network/bus.

I can only speak from experience, and my experience is that slaves are fussy and refuse to communicate when the

serial settings don't match those used by the master.

I have never tested a slave for functionality at a baud rate or parity setting other than that expected, but dozens of times I've encountered "no comm" only to discover that the master and slave serial settings did not match and that when the settings were changed to match, comm was established.

If your test shows that your slaves with different serial settings work on the same network/bus at different settings; that's great, run with it.

I'm not sure whose master you use that automatically switches between serial settings between polls to the various slaves, but I noted that the futuristic date, Oct 21, 2015 from the "Back to the Future" movie (1989) recently transpired, with all the attendant fuss over the dated movie versus reality.

Although there are no Mr. Fusion engines commercially available, apparently your Magic Mark XXXVIII Modbus Master handles serial change settings, or not; at least the bus works.

If the network works OK, what's the concern?

### Denaize replied:

My slaves don't work at different settings. But the master can work with one slave at 9600 bd OR work with another slave at 38400 bd. Master and slave are always with the same settings.

I made my first master Modbus electronic card. Naturally I wrote code to set the baud rate and parity for each slave. It works but I find that it surprises a lot of people. I want to know what the specifications says on this point.

### SCADAmetrics shared this:

I ran into a situation one time where several of my Modbus slave devices had hardwired serial settings that could not be changed, and I needed to read them from a single Modbus master --- which

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- Technical discussions
- Knowledge aggregation
- Contact with Modbus users

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sounds a lot like the problem you are facing.

My solution was to use a Digi One IAP protocol converter. In this case I didn't really convert protocols, but rather baud rate only. The conversion went like this: Modbus/RTU/9600 - Modbus/RTU/19200. Extra hardware, yes --- but a much cleaner solution than hoping the slave devices don't complain loudly on the bus about framing and/or parity errors.

-Jim Mimitz,

[Add your comments](#) to this thread.

### OPC Communication...

Looking for information about OPC communication and Modbus?

[This recent discussion](#) on the Modbus Discussion Forum includes links to helpful information, such as tutorials and videos.

### Posting Messages on the Modbus Discussion Forum is Easy ...

[Post your question](#) on the Forum and connect with other Modbus users and developers. Check out the [guidelines](#) for asking and answering questions, and you're on your way.





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### The Modbus Organization Mission

The Modbus Organization, Inc. is a group of independent users and suppliers of automation devices that seeks to drive the adoption of the Modbus communication protocol suite and the evolution to address architectures for distributed automation systems across multiple market segments. Modbus Organization also provides the infrastructure to obtain and share information about the protocols, their application, and certification to simplify implementation by users resulting in reduced costs.

# Modbus Resources

## Modbus Q&A...

The Modbus Community is the premier on-line engineering discussion forum. Sponsored by the Modbus Organization and supported by Control.com, check out Q&A from the [Modbus Community](#) website or log-in and have the threads you want emailed directly to you.

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## Modbus conformance certification...

The Modbus Conformance Testing Program provides independent verification that a broad array of qualifications has been met in compliance with Modbus specifications. It provides verification that a device's design and configuration process will proceed smoothly and that products were developed in accordance with key Modbus criteria. [Learn more...](#)

## Looking for the Modbus specifications and implementation guides?

The Modbus specifications and guides for implementing Modbus over serial line or Modbus TCP can be downloaded freely from the Modbus.org [Technical Resources page](#).

## Order the Modbus TCP Developer Toolkit

The Modbus TCP Toolkit provides all the necessary pieces to develop a Modbus TCP/IP-compliant device, including documentation, diagnostic tools, sample source code, and pre-test software to prepare for Modbus conformance certification.

[Learn more...](#)

