Application Note

Controlling the QuadTech 1865 and IET Labs 1865 Plus Megohmmeter via the RS-232 serial interface and NI Max

Summary

The QuadTech 1865 and IET 1865 Plus is designed for applications requiring automation of a megohmmeter. The 1865 and 1865 Plus feature a standard RS-232 interface for communication to a PC or similar controller.

This application note gives a simple example of using NI Max to communicate with the 1865 Megohmmeter.

This application note will deal with the RS-232 interface. NI Max can easily be used with USB to RS-232 Adapters and the 7000-23 GPIB to RS-232 Control Device that convert the RS-232 on the 1865 to GPIB.

This example will use NI Max Measurement and Automation Explorer version 2022 Q3 to communicate with the megohmmeter.

Installing the NI-488.2 driver from the link below will also install the latest version of NI Max. NI Max is useful in that you can explore RS-232, USB, LAN and GPIB communications all from one program. NI-488.2 driver can be found at https://www.ni.com/en-us/support/downloads/drivers/download.ni-488-2.html#467646

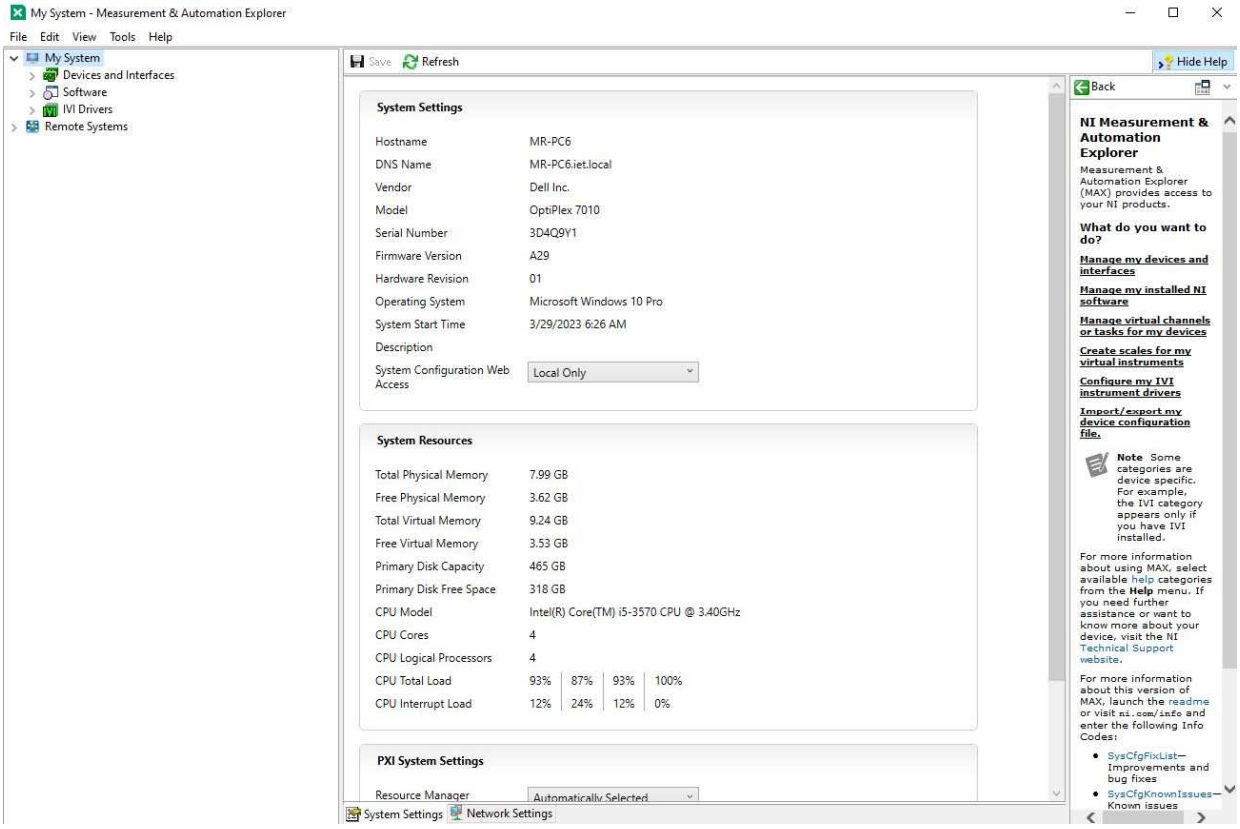
Example

This example uses a PC with a Windows 10 operating system and NI Max Measurement and Automation Explorer version 2022 Q3.

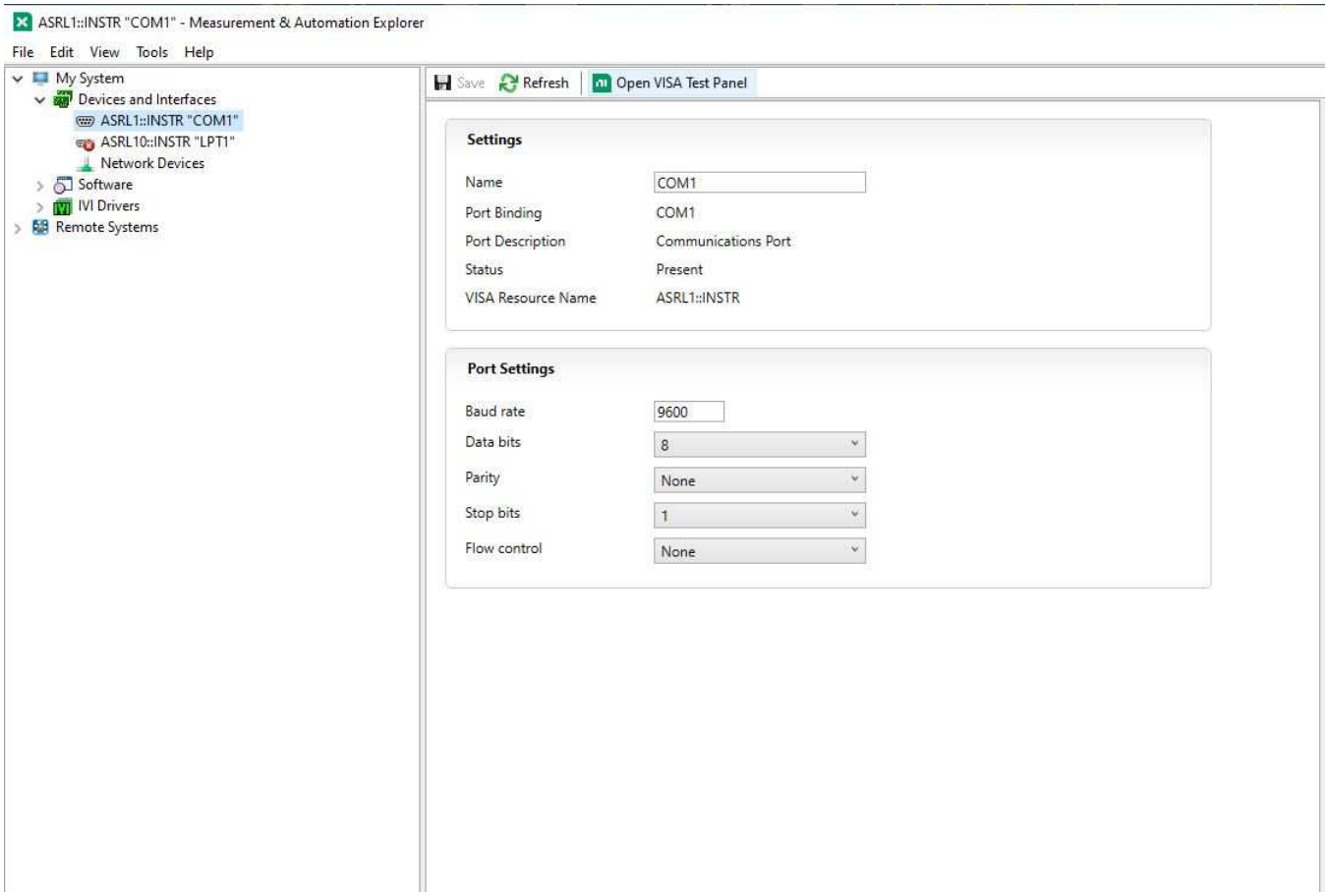
The serial cable must be a null model cable. Plug the null modem cable into the back of the 1865 Plus Megohmmeter.

On the 1865 go to I/O>>RS-232, verify that RS-232 is enabled, 9600 baud, parity:None, Data Bits: 8, and Stop Bits: 1.

1.) On the PC open NI Max and expand Devices and Interfaces

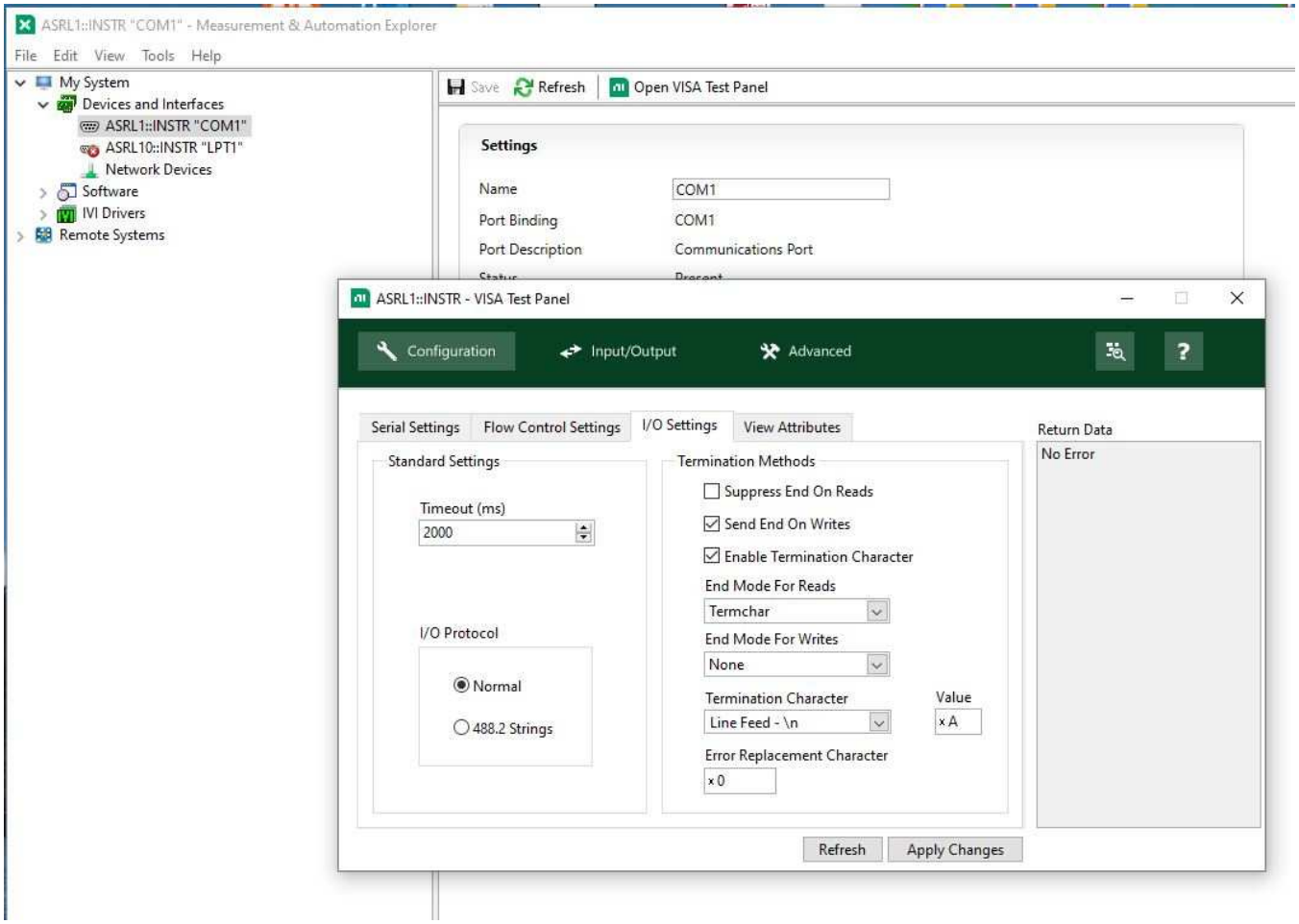


2.) Under Devices and Interfaces>>select ASRL1::INST “COM1” or the ASRL device associated with your COMport or USB to serial adapter. See screenshot below.



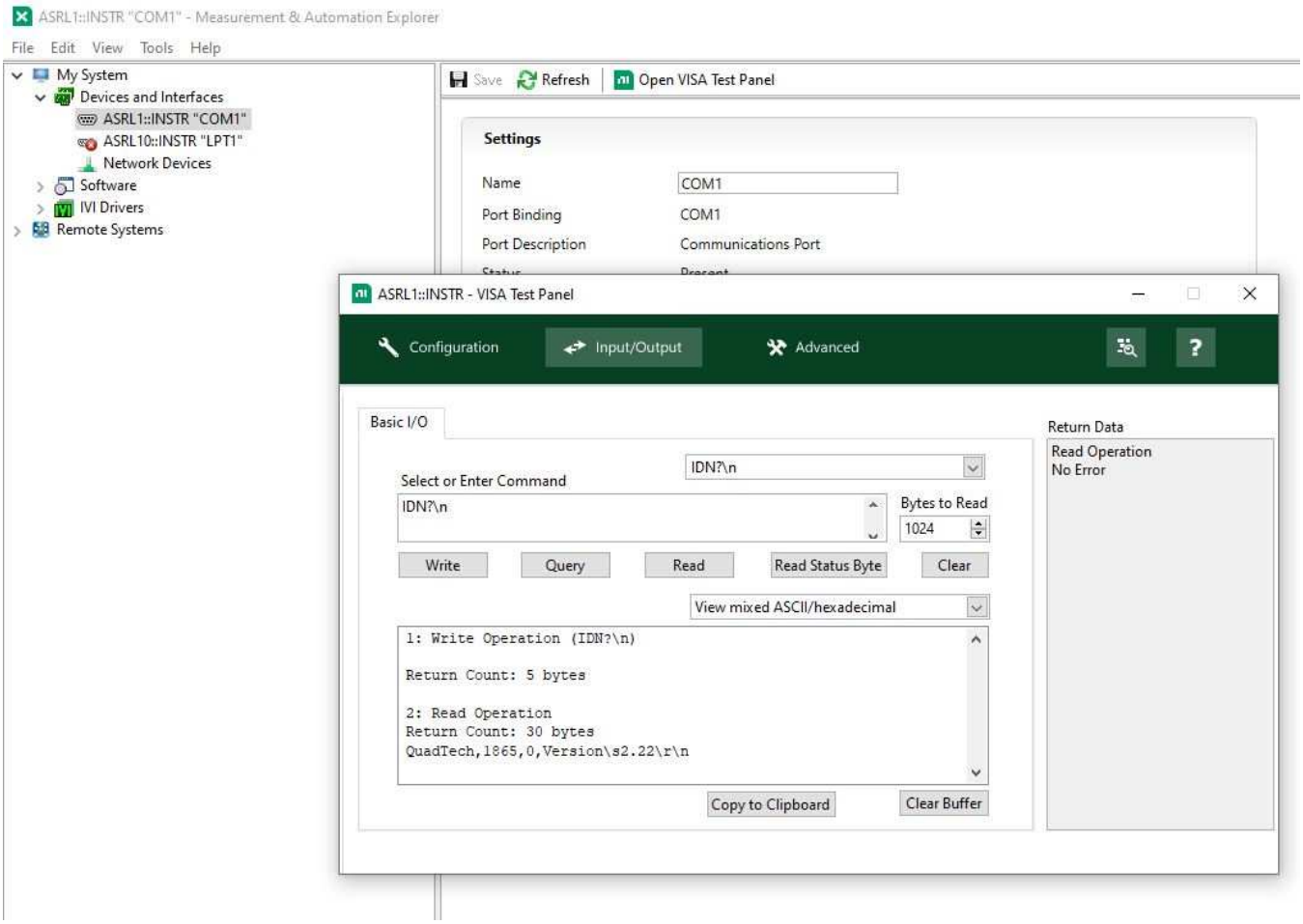
3.) Click on Open VISA Test Panel

On the Configuration menu, go to the I/O Settings Tab and configure the Termination Methods settings as shown below. Pay particular attention to Enable Termination Character and that the Termination Character is Line – Feed.

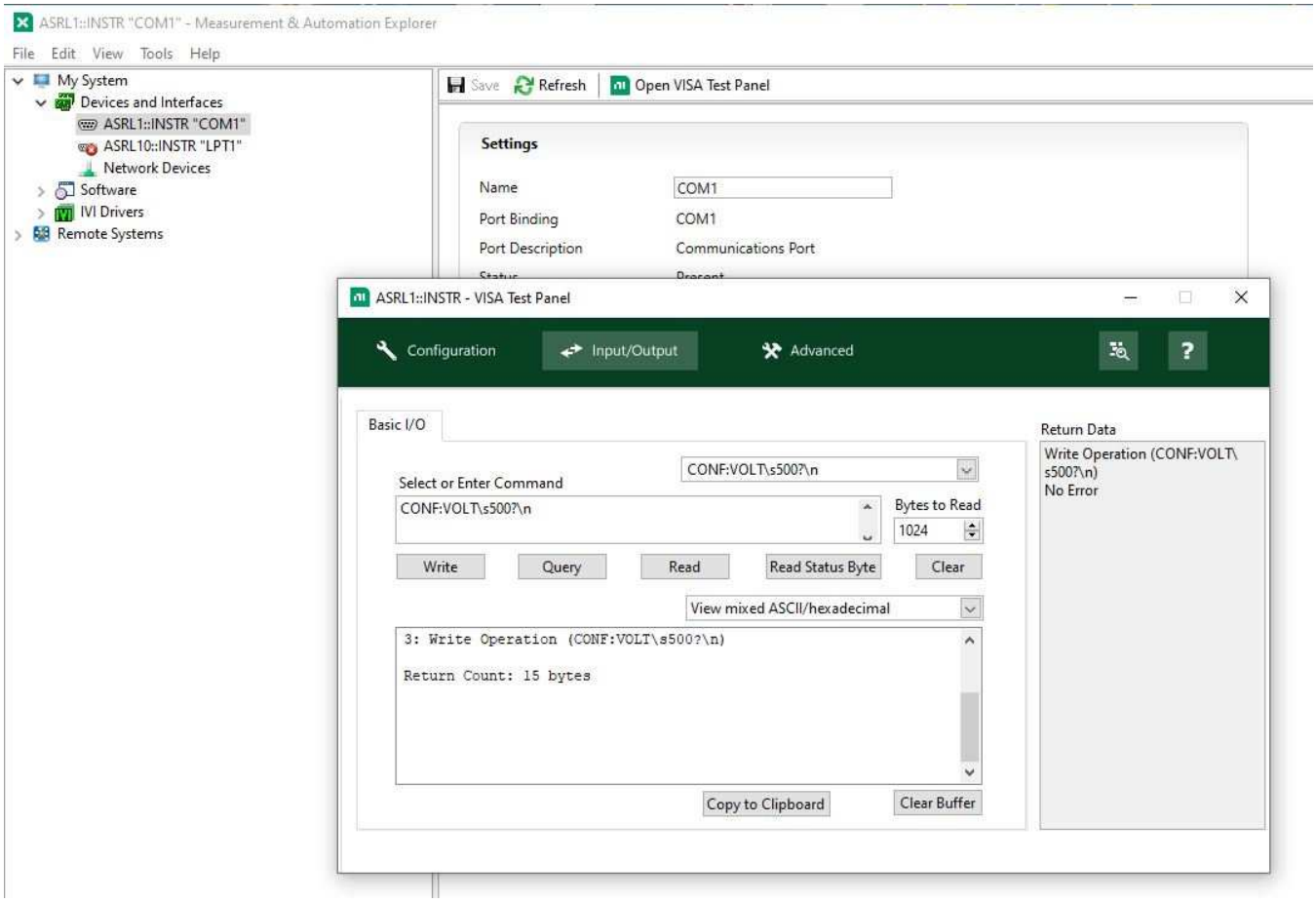


4.) Click on the Input/Output menu, Under Select or Enter Command enter “IDN?\n”. Note that the “\n” indicates to send the termination character. Click on the Write button and then the Read button. The response will be shown in the text box. See screenshot below. The RS-232 communications is slow, so I recommend clicking on Write and then Read rather than Query.

The IDN? on the screenshot below shows this is a QuadTech 1865 Megohmmeter.



5.) Additional commands can be sent in the same format. For example to change the voltage the command "CONF:VOLT 500\n" can be entered and then click on Write button. The display on the 1865 should change to indicate 500 V.



Conclusion

The application note has hopefully shown that the 1865 can easily be controlled via the RS-232 interface and NI Max.

NI Max and the 1865 Megohmmeter can easily be used with USB to RS-232 Adapters and the 7000-23 GPIB to RS-232 Control Device that convert the RS-232 on the 1865 to GPIB.

This should give you a starting point to create your own program to control the QuadTech 1865 or IET 1865 Plus.