

Using the MicroRidge GageWay6 Digital Gage Interface Application Note #21

Overview

The MicroRidge GageWay6 Interface is designed to multiplex RS-232 inputs that can be used for a variety of applications. This application note will detail using the GageWay6 to multiplex GageWaySM cables which are interfaced to digital dial gages. It includes 5 ports, one can be used to “daisy-chain” additional GageWay6 units to expand the channels in increments of 4.



This application note details its use with the CR800 and CR1000, contact Canary Systems regarding use of other control modules.

There are 3 steps to the setup, **Hardware** (the physical interconnection between GageWay6 and control module), **GageWay6 Configuration** (using the supplied GWSetup software) and **MultiLogger Configuration**.

Hardware

The GageWay6 must be connected to the data acquisition system. This is done using the supplied RS-232 cable. Power is also provided on the supplied RS-232 cable. Wiring is shown below.

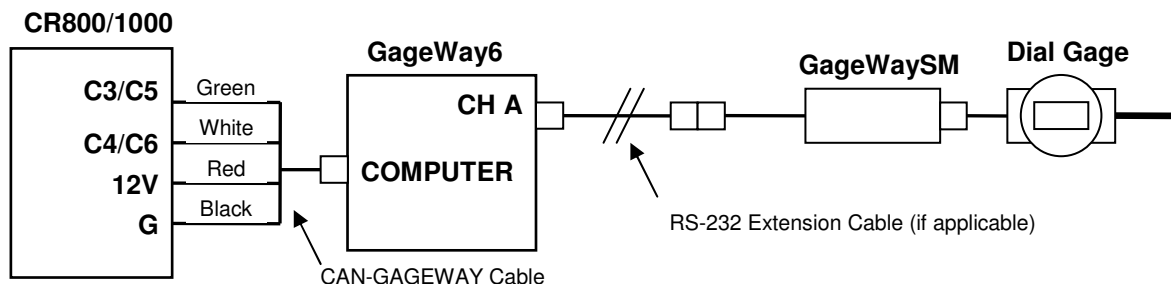
Note: The GageWay6 draws approximately 150mA from the 12V supply. When running from batteries this must be considered as it relates to battery run time. For example, factoring in the control module power drain, a fully charged 7aHr battery will be depleted within approximately 36 hours. It is recommended to have a charger plugged in maintaining the battery charge at all times.

GageWay6 RS-232 Wiring to Control Module

Male DB-9	Color	Function	CR800	CR1000
2	White	TD (Output)	C4	C6
3	Green	RD (Input)	C3	C5
5	Black	Ground	G	G
7	Red	12V (Input)	12V	12V

Alternately the supplied AC adaptor may be used to power the GageWay6 and the 12V connection shown above may be disconnected.

Optical isolation may also be used between the GageWay6 and the control module in the case of noise. Connect the GageWaySM cables with extension cables (if applicable) to the input ports of the GageWay6 and then to the dial gages. A typical configuration is shown below.



GageWay6 Configuration

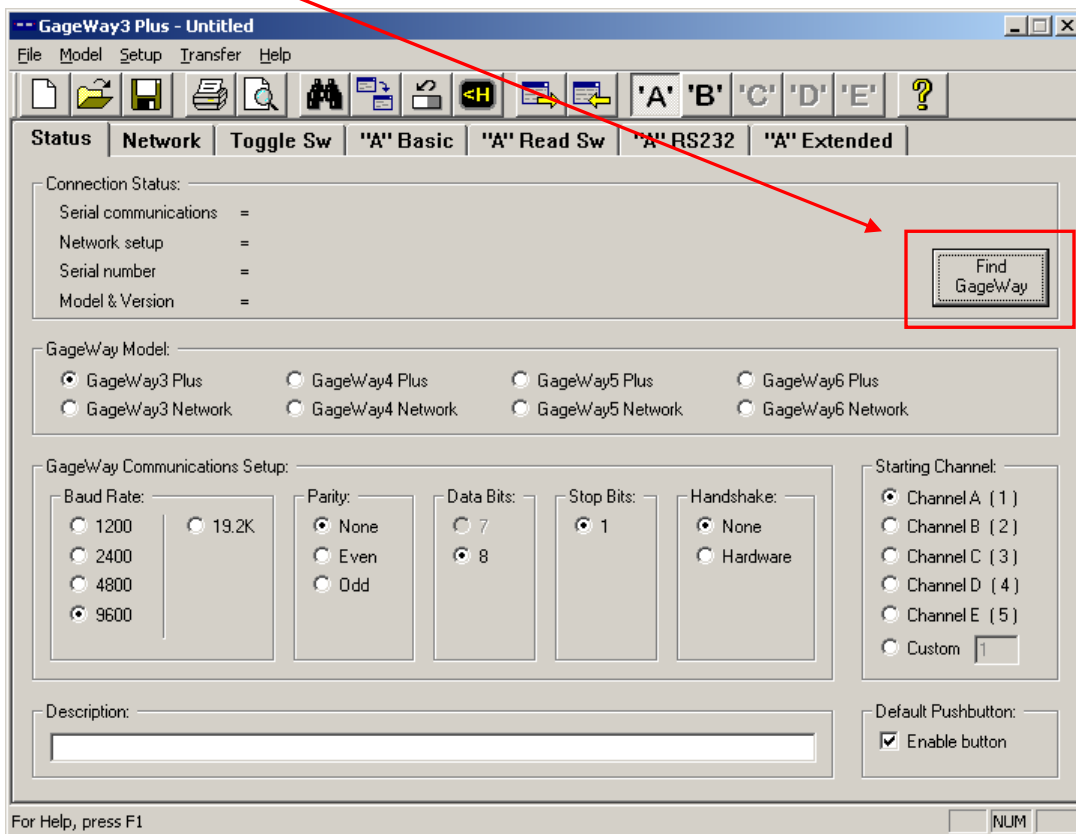
Install the **GWSetup** software from the supplied MicroRidge CD. This software is designed to allow configuration and testing of the GageWay6.

Note: You must configure the GageWay6 prior to using it with the Campbell control modules!

Connect power to the GageWay6 using the supplied AC adaptor. Use a standard RS-232 cable between the GageWay6 RS-232 port and the PC.

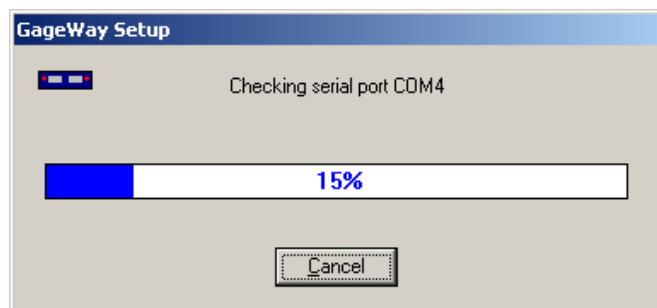
Launch the software using the **GWSetup** icon placed on your desktop or in the GageWay Setup group.

Notice the **Find GageWay** button, click it to attempt finding the interface.



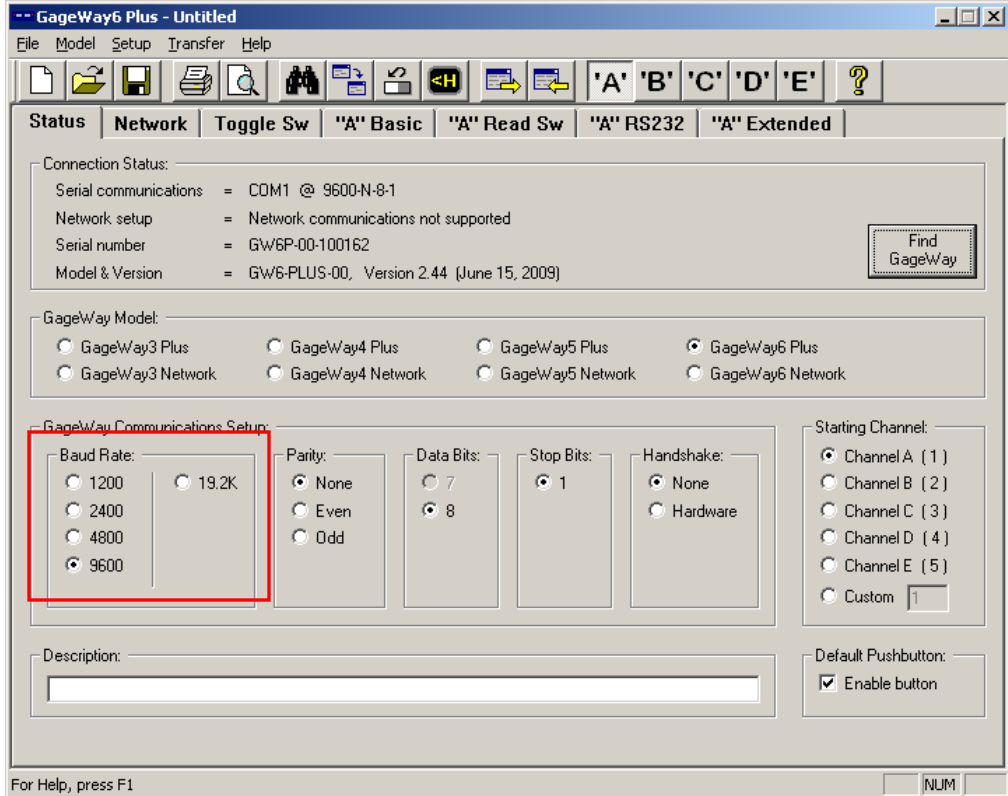
The software will then start scanning all the COM ports on your computer and testing various baud rates to find the GageWay6.

Please wait while this process completes.



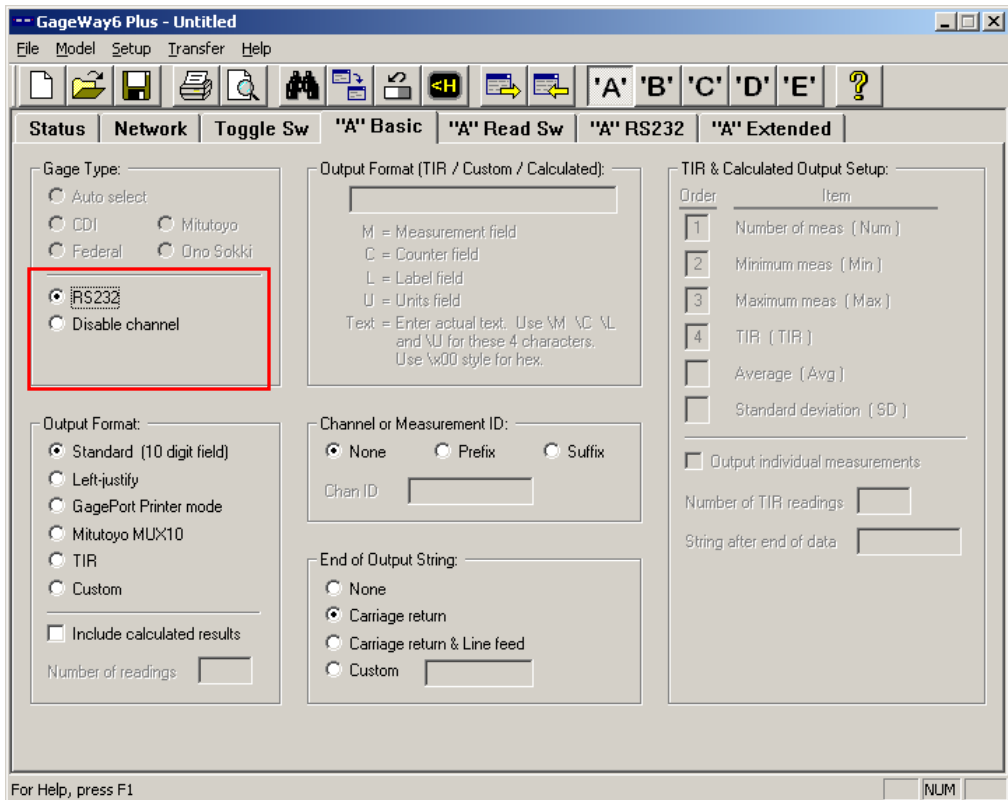
Once the GageWay6 is found the parameters will be read and shown on the various tabs. The default settings for the Status panel are shown and should be verified.

Check the **Baud Rate** in particular, it should be set to the default of **9600**.



Each channel must now be configured, channel configuration is accessed by clicking on the 'A', 'B', etc. buttons shown on the toolbar. Click on 'A', then the "A" Basic tab, verify the defaults shown at right.

Make sure **RS232** is selected as the **Gage Type**.

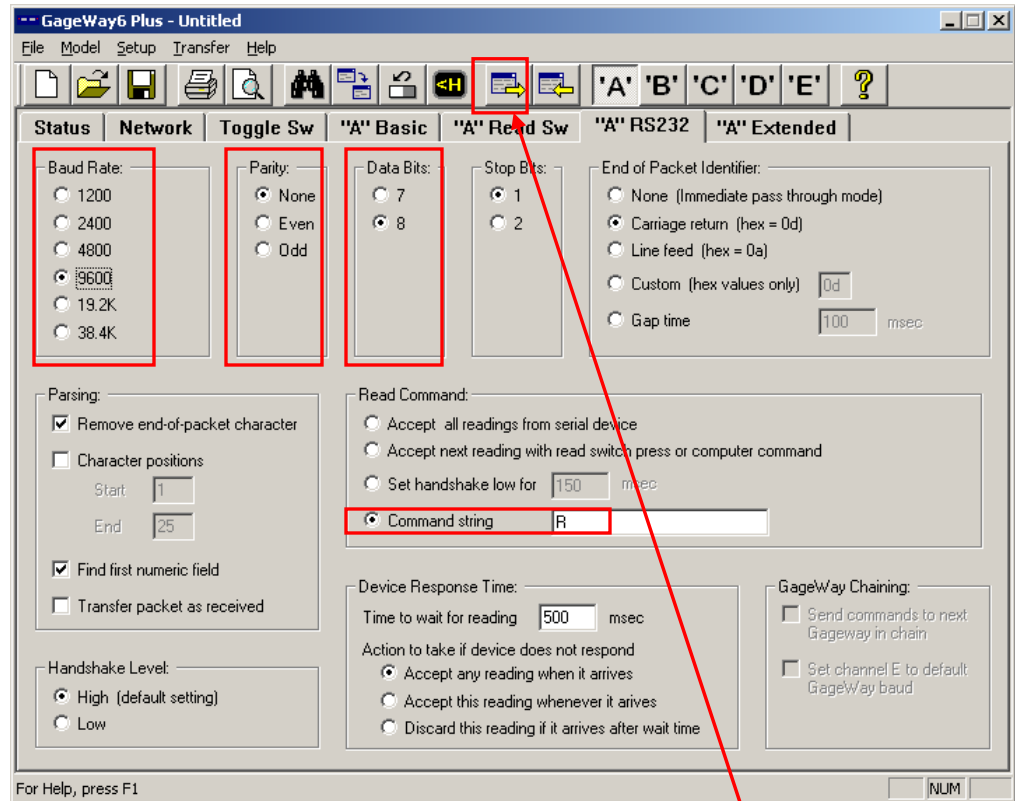


Next select “A” RS232 tab to finish the channel configuration.

Configure the following settings to match the connected GageWaySM.

These are the default settings for the GageWaySM.

1. Baud Rate: 9600
2. Parity: None
3. Data Bits: 8
4. Command String: R



Send Parameters Button

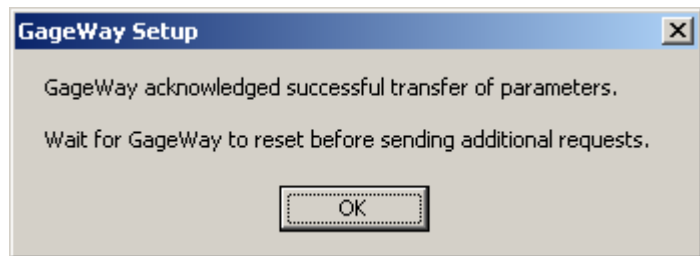
Go through all channels for the GageWay6 and configure the channels as shown. Double-check that the settings match the screenshot shown above.

Once complete press the **Send Parameters to GageWay** button.

The GageWay6 will be updated and the status message will display.

It's a good idea to save these parameters to a parameters file for easy recall should the GageWay6 need to be re-configured at any point.

Use the **Save** button shown on the toolbar.



You can now disconnect the GageWay6 from your PC and connect it to the control module using the supplied cable. You may also connect your digital dial indicators using the supplied cables.

Note: The GageWay6 will arrive pre-configured but it is recommended to verify them.

MultiLogger Configuration

MultiLogger configuration is straight-forward, simply select the appropriate **Gage Type** | **Make** | **Model** for each channel, as follows (CR1000 example shown below):

CR800: Digital | MicroRidge | Gageway6 COM2 CH0n, where n = the channel to read
CR800: Digital | MicroRidge | Gageway6 COM3 CH0n, where n = the channel to read

Note: Contact Canary Systems to use other control ports on the control modules.

You may also configure the **Conversion Method**, **Units Conversion** and **Check Alarms** if desired. The **Upper Channel** configuration is not generally used for the digital dial gage channels.

Note: The units output from the digital indicators will be a function of the indicator setup. See the operating instructions for the digital indicator to configure the units display.

Troubleshooting

Output shows -99999.

Check whether the digital dial gages are powered up. By default they power off after a set amount of time. You will likely need to disable the auto power-off. Check the cabling between GageWay6 and control module. Check cabling between the dial gages, GagewaySM and GageWay6, the connectors must be seated properly. You can also use the GWSetup software to test the Gageway6 directly.

Output is unstable

Check whether the digital dial gages are showing unstable measurements – if so this may be due to vibration of the structure being monitored. Check for proper system power, it should be > 12VDC. Check for noise sources nearby, possible sources includes generators, welders or motors. Re-locate the noise generating equipment if possible, or re-locate the electronics including cabling. Check for moisture in the digital dial gage and/or cabling, dry and shield the gages/cabling from water.