

# ReadMe.pdf for

- **GWSetup, Version 1.0.1.24**
- **GageWay Interface Firmware, Version 2.45**

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### **Part 1 Technical Support & Company Information**

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### **Part 2 System Requirements**

The system requirements for GWSetup are as follows:

- 1 or more available serial ports
- Windows XP or later

### **Part 3 License**

The GageWay Setup Program (GWSetup.exe) is designed to support the GageWay3, GageWay4, GageWay5 and GageWay6 interfaces from MicroRidge Systems, Inc.

GWSetup.exe can be installed on as many computers as required to support the setup, testing and operation of any of the above listed GageWay interfaces.

#### Limitation of Liability:

The user hereby releases MicroRidge from all liabilities and hereby waives all other rights, claims, and remedies against MicroRidge, its owners, officers, or employees, express or implied, arising by law or otherwise, with respect to any and all Software or other tangible or intangible items or services provided under this agreement.

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## ***Part 4 Hardware Revisions***

### **GageWay3 Plus S/N GW3P-00-100100 to 100149**

Hardware revisions have been made to the GageWay3 Plus interface starting with serial number GW3P-00-100150. GageWay3 Plus interfaces with serial numbers from GW3P-00-100100 to 100149 were shipped between late August 2002 and mid November 2002. The hardware modifications affect the use of the GW-LC Level Converter cable and certain Mitutoyo Gages that use gage cables with all 10 pins connected. MicroRidge will update any of the affected interfaces at no charge. Contact MicroRidge Systems for additional information.

### **GageWay5 Plus Starting with S/N GW5P-00-100150**

### **GageWay5 Network Starting with S/N GW5P-00-100130**

Hardware revisions have been made to the GageWay5 interface boards to allow firmware updates to be loaded into the GageWay5 via the standard serial cable. When updating the firmware, the programming jumper must be moved from the "Run Mode" to the "Program Mode."

## ***Part 5 Known Problems & Workarounds***

There are no known problems with any of the GageWay models or the GWSetup program.

## ***Part 6 GWSetup Program History***

### **Ver 1.0.1.0 (8-29-02)**

Original release of the GWSetup Program.

### **Ver 1.0.1.7 (11-12-02)**

1. Numerous enhancements and bug fixes.
2. First release of the GWSetup Help files.

### **Ver 1.0.1.8 (11-21-02)**

1. Added support for toggle switch operation on the GageWay5 & 6.

### **Ver 1.0.1.9 (12-2-02)**

#### Bug fixes:

1. Custom read switch command for a channel would not accept request for channel E. This only affected the GageWay5 and GageWay6.

### **Ver 1.0.1.11 (3-28-03)**

#### Enhancements:

1. Additional read switch support was added on the Read Switch tab for the GageWay firmware version 2.14. Refer to the description in the GageWay Interface History section for more details.

### **Ver 1.0.1.13 (5-10-03)**

These modifications were included in version 2.15 of the GageWay firmware.

#### Enhancements:

1. Toggle Switch Tab: Added a toggle switch control (GageWay5 & 6 only) that allows you to manually step out of a custom read sequence and to restart the custom read sequence. This feature is only available for a custom read sequence defined for channel A.
2. RS232 Tab: Added an option to transfer a packet as it is received from the RS232 port. This option can help reduce setup problems associated with an RS232 port.
3. RS232 Tab: Added an option for channel E to allow commands to be passed to other GageWays that are chained via the expansion port.
4. RS232 Tab: Added a selection for channel E that sets this channel to the default GageWay baud and communication parameters. This feature helps ensure that you have set the proper parameters set when you chain GageWays.

#### Bug fixes:

1. The serial communications test program would not address serial ports COM10 to COM20.

### **Ver 1.0.1.14 (8-23-03)**

These modifications were included in version 2.17 of the GageWay firmware.

#### Enhancements:

1. Addition baud rate and communication parameter options were added to the communications test program. Baud rates added were 38.4K, 57.6K and 115.2K. Parity options added were mark and space. Data bit sizes of 5 and 6 were added. Stop bit options of 1.5 and 2 were added. These added baud rates and parameters will allow the user to verify the operation of a greater range of instruments with RS232 outputs.
2. The option for 2 stop bits was added to the RS232 tab. This stop bit option is only available when even or odd parity is selected (E-7-2 or O-7-2).
3. The ability to set the default state of the output handshake line was added. This feature is only available with the GageWay4, GageWay6 and channel E on the GageWay5. There are 2 output handshake lines for each serial port. However, only one of them can be directly controlled by the GageWay processor.

#### Bug fixes:

1. The parsing options were incorrectly enabled on the RS232 tab if you had the "Transfer packet as received" option checked and you change the End-of-Packet Character from "None" to one of the other options. This bug only affected the GWSetup tab display and had no affect on the operation of the GageWay.

**Ver 1.0.1.15 (11-6-03)**

Bug fixes:

1. Setup parameters for the GageWay4 and GageWay6 may not have all channels properly set to the RS232 or disabled modes. With GageWay firmware versions earlier than 2.19, the GageWay4 or 6 may improperly identify the source as a Federal gage.

**Ver 1.0.1.16 (2-10-04)**

These modifications were included in version 2.20 of the GageWay firmware.

Enhancements:

1. Add gap time as an option in the end-of-packet identifier for RS232 inputs
2. Add the ability for the GageWay network versions to allow connections from 6 network clients.

**Ver 1.0.1.17 (4-18-04)**

Bug fixes:

1. Could not set the custom end-of-packet for RS232 devices to a binary 0 (00 hex).

**Ver 1.0.1.18 (6-30-04)**

Enhancements:

1. An option was added to disable the default pushbutton on the back of the GageWay. This feature was added to version 2.27 of the GageWay firmware.

The signal from the default pushbutton into the GageWay processor is a dedicated input on the GageWay4, 5 and 6. However, on the GageWay3, the pushbutton signal is shared with pin 6 on the 10-pin gage connector. Therefore, on the GageWay3, you must not have the default button pressed when you are trying to obtain a gage reading.

**Ver 1.0.1.19 (3-16-05)**

Enhancements:

1. The GageWay Network series now allows you to specify what channel data should be sent to each network port and the output serial port. For example, you could send data from channel B to the serial port, data from channel A to network port 3 and data from channels A, B and D to network port 1. This feature requires GageWay firmware version 2.33 or later.

**Ver 1.0.1.20 (10-27-05)**

Bug fixes:

1. The Character positions checkbox on the RS232 tab may not get properly set when reading a file or setting parameters to their default values.

**Ver 1.0.1.21 (5-29-07)**

Enhancements:

1. Added a user definable string that can be send to host computer when read switch is pressed. This feature only works with channel A.

**Ver 1.0.1.22 (3-5-08)**

Enhancements (requires firmware version 2.38 or later):

1. Added support for 38.4K baud on the RS232 tab.
2. Added support for N-8-2 communication parameters on the RS232 tab.

**Ver 1.0.1.23 (7-30-08)**

Modifications:

1. Reduced default contact bounce time from 125 msec to 40 msec. This reduced time may be required for continuous reads from the ProCable.

**Ver 1.0.1.24 (8-180-08)**

Modifications:

1. Reduced default contact bounce time from 40 msec to 20 msec. This reduced time may be required for continuous reads from the ProCable.

## **Part 7 GageWay Interface History**

**Ver 2.00 (8-29-02)**

Original release of the GageWay3 Plus interface.

**Ver 2.05 (11-13-02)**

1. A few enhancements and bug fixes.
2. Each network version gets a unique TCP/IP address based on its model and serial number.

**Ver 2.07 (11-21-02)**

Enhancements:

1. GageWay 5 was officially released.
2. The GageWay3 & 5 can now detect the presence of a serial gage on an input channel. The default parameters are set to 4800-E-7-1. If you gage used different parameters, these must be setup through the GWSetup program.

Bug fixes:

1. Corrected a problem with reading Mitutoyo gages. With previous versions, on rare occasions you would not get a reading from a Mitutoyo gage when read request was made.

**Ver 2.08 (12-2-02)**

Enhancements:

1. LED's will blink indicating a cold start. This pattern is the same as when the Default button is pressed when the Reset button is pressed.
2. Field update of GageWay firmware will no longer overwrite the GageWay serial number
3. At startup (power on), the GageWay will attempt to verify that a valid program has been loaded into flash. In most cases, the GageWay can detect an invalid program. If an invalid program is detected, the GageWay will slowly blink the channel A LED. This feature was added as a check for field updates of the GageWay firmware.

### **Ver 2.09 (1-28-03)**

#### Modifications:

1. The process of calculating the default network address was modified so that a 0 could not appear in the last two positions of the address. The default network address is 192.168.x.y. The values of x and y can range from 1 to 255. Previously x and/or y could also be set to 0.

#### Bug fixes:

1. If the network functions were enabled on the GageWay network version and there was no network connection established, the network buffer would fill up and the GageWay would stop working.

### **Ver 2.10 (2-5-03)**

#### Enhancements:

1. The field update utility (GWBinary\_xxx.exe) has been released for the GageWay series. This utility allows a user to update the GageWay firmware in the field. If your GageWay does not have an internal programming jumper, you must purchase a special programming cable to perform the update. The programming cable (P/N: GW101-0513) is available from MicroRidge Systems at a cost of \$30.00 (pricing subject to change).

#### Bug fixes:

1. If connected a Mitutoyo to a GageWay3 or 5 after the GageWay was reset and you pressed the read button on the gage, the first reading would be sent twice.
2. The electrical capacitance in long gage extension cables on the GageWay3 and 5 could make the GageWay think you had a Federal gage connected to the input channel.

### **Ver 2.11 (2-6-03)**

#### Bug fixes:

1. The strings displaying the default TCP/IP address and subnet mask were not initialized properly at power up. This only affected the GageWay Network models and would only appear when the <N computer command was used.

### **Ver 2.12 (3-24-03)**

#### Bug fixes:

1. The timing for slower Mitutoyo gages was not properly set and typically you could not obtain reading from these gages. The gages that seem to be affected were the micrometers.

### **Ver 2.13 (3-26-03)**

#### Modifications:

1. Changes were made to the startup code to check for valid firmware in the GageWay unit. If the GageWay detects incorrect firmware, it will continuously blink the channel A LED. Incorrect firmware can be loaded into a GageWay by the end user through the use of the GWUpdate field update utility.

### **Ver 2.14 (3-28-03)**

#### Enhancements:

1. The external read switch operation has been modified for the continuous read and TIR modes. Previously you had to hold the read down (closed position) to obtain continuous or TIR measurements. You now have the option of pressing and releasing the read switch to start the continuous read or TIR operation, and then pressing it again to stop the operation.

#### Bug fixes:

1. TIR measurements were not obtained from multiple channels when a single read switch was used as a master read switch.

### **Ver 2.15 (5-10-03)**

The support for these modifications was included in version 1.0.1.13 of the GageWay setup program.

#### Enhancements:

1. Added a toggle switch control (GageWay5 & 6 only) that allows you to manually step out of a custom read sequence and to restart the custom read sequence. This feature is only available for a custom read sequence defined for channel A.
2. Added an option to transfer a packet as it is received from the RS232 port. This option can help reduce setup problems associated with an RS232 port.
3. Added an option for channel E to allow commands to be passed to other GageWays that are chained via the expansion port.

### **Ver 2.16 (5-16-03)**

#### Bug fixes:

1. Discovered a version of an older model Mitutoyo micrometer (323-711) that contained longer than normal clock cycles. As a result of these long clock cycles, no readings were obtained from this gage.

### **Ver 2.17 (8-23-03)**

The support for these modifications was included in version 1.0.1.14 of the GageWay setup program.

#### Enhancements:

1. Added support for Fowler/Sylvac gages that use the duplex cables. These gages use a baud rate of 4800-E-7-2 and require that the DTR handshake line be held high and the RTS handshake line be held low. When these gages are used with the GageWay4 and 6, some of the internal pin jumpers must be moved from their default positions. When these gages are used with the GageWay3 and 5 a special level converter cable is required. When these gages are used with the expansion port on the GageWay5 and 6, a special adapter cable is required.

#### Bug fixes:

1. A buffer overflow condition was created when the <T command was used. No specific problems have been related to this problem. However, this type of bug can cause very erratic behavior. This command is very seldom used by the end-user.

### **Ver 2.18 (10-31-03)**

#### Enhancements:

1. Added a debug mode for Mitutoyo gages on the GageWay3 and GageWay 5. When in the debug mode, additional information is sent with each reading. This additional information includes a time reference, number of bits received, value of each bit and value of each 4-bit character. To enter the Mitutoyo debug mode, press and hold the default pushbutton on the back of the GageWay for about 12 seconds. The LED's will all flash after 2 seconds and again after 12 seconds. After the second flash, release the default pushbutton. To exit the Mitutoyo debug mode, press and release the reset pushbutton. This debug mode should only be used when requested by MicroRidge technical support.

### **Ver 2.19 (11-6-03)**

#### Bug fixes:

1. When using the GageWay4 or GageWay6, it was possible to have an input channel incorrectly identified as a Federal gage input. This problem was due to an incorrect parameter being sent from the GWSetup program. The GWSetup program 1.0.1.15 fixes this parameter problem. Changes were also made in the GageWay firmware to prevent this problem from occurring.

### **Ver 2.20 (2-13-04)**

The support for these modifications was included in version 1.0.1.16 of the GageWay setup program.

#### Enhancements:

1. Add gap time as an option in the end-of-packet identifier for RS232 inputs
2. Add the ability for the GageWay network versions to allow connections from 6 network clients.

#### Bug fixes:

1. The TCP/IP network was not properly initialized after a <W or <Z command was sent to a GageWay network model.

### **Ver 2.21 (4-18-04)**

#### Bug fixes:

1. The Mitutoyo gage read function did not properly check for invalid digits in the gage readings. The valid gage read digits are 0 to 9. However, the following characters could have appeared in the reading.  
: ; < = > ?
2. The end-of-packet gap time feature added in version 2.20 did not properly reset data pointers after detecting the end-of-packet gap. This resulted in always sending the very first packet detected even when new data was received.

### **Ver 2.24 (5-18-04)**

#### Enhancements:

1. Add the following computer commands. The channel number xx, can be of the form 01, 02, A, B, \*, etc.  
<Jxx Enable input from channel xx

<Kxx Disable (kill) all inputs from channel xx

Bug fixes:

1. Some of the computer commands were not passed to chained GageWay units.
2. If the GageWay was not setup for chaining and you sent a custom read sequence (Read Switch tab) to a channel not on the local GageWay, the GageWay would quite responding. This bug was introduced in version 2.15.

### **Ver 2.25 (5-24-04)**

Enhancements:

1. Add support for additional unit codes for the Mitutoyo gages. The units code is contained in the last 4 bits of the data sent from the gage. Previously units code 0 was for mm and code 1 was for inches. Units codes 0, 2, 3, 4 and 8 are now used to identify mm measurements. Units codes 1, 5, 6, 7 and 9 are now used to identify inch measurements.

### **Ver 2.26 (6-16-04)**

Enhancements:

1. Modified computer <Lx and added command <Mx. The <Lx command will turn on an LED identified by channel x (x must be from A to Z). The <Mx command will turn off the LED identified by channel x. The commands <L- or <M- will turn off all LED's. When the LED's are turned on, the light intensity is about one-half of full brightness. The revised <Lx command allows multiple LED's to be turned on at once.

### **Ver 2.27 (6-30-04)**

Enhancements:

1. An option was added to disable the default pushbutton on the back of the GageWay. This feature was added to version 1.0.1.18 of the GWSetup program.

### **Ver 2.28 (7-21-04)**

When using this firmware version for the GageWay3 or GageWay4 network, the microprocessor version must be 1Q3T or later. Microprocessor version 1Q2T will not work.

Bug fixes:

1. The <I (status information) command was not passed to chained units from the GageWay5 or 6.
2. If a GageWay5 or 6 was configured for chaining and you sent the <K\* (kill command) to the unit, the expansion port channel was also disabled. If the GageWay5 or 6 is configured for chaining, the expansion port should always be enabled unless you specifically disable with a command such as <KE.

### **Ver 2.29 (8-5-04)**

Bug fixes:

1. The low intensity LED used with the toggle switch did not work. This bug was probably introduced in version 2.26

### **Ver 2.33 (3-16-05)**

#### Enhancements:

1. The GageWay Network series now allows you to specify what channel data should be sent to each network port and the output serial port. For example, you could send data from channel B to the serial port, data from channel A to network port 3 and data from channels A, B and D to network port 1. This feature requires the GWSetup program version 1.0.1.19 or later.

### **Ver 2.34 (2-22-07)**

#### Bug fixes:

1. A buffer overflow in the GageWay firmware prevented the GageWay from properly operating at 19,200 baud. The GageWay could be set to 19,200 baud, however: you were unable to change the setup parameters with the setup program.

### **Ver 2.35 (5-29-07)**

#### Enhancements:

1. Added the ability to send a user defined string to the host computer when the channel A read switch is pressed. This feature will only work for channel A.

### **Ver 2.36 (7-30-07)**

#### Enhancements:

1. Modified how commands are sent to chained GageWay units. Previously the first GageWay would be configured as channels A to E, the next as channels F to J, etc. With this setup, a read command to channel E would not be processed. With this version, you would set the first GageWay channels as A to E, the next as E to I, etc. When the first GageWay receives a ready command for channel E, the read request will be passed to the next GageWay. With this version you will not have dead channels in the channel number sequence.

### **Ver 2.37 (10-10-07)**

#### Modifications:

1. Changed the method for reading gages with a Mitutoyo output. This change was necessary due to noisy outputs generated by some newer Federal uMaxum gages. The output from these uMaxum gages can now be read by the GageWay Series even though the output does not meet the Mitutoyo output specification.

### **Ver 2.38 (3-5-08)**

#### Modifications (requires setup program version 1.0.1.22 or later):

1. Added support for 38.4K baud on the RS232 tab.
2. Added support for N-8-2 communication parameters on the RS232 tab.

### **Ver 2.39 (3-17-08)**

#### Modifications (requires setup program version 1.0.1.22 or later):

1. Fixed problem with N-7-2 communication parameters.

**Ver 2.40 (6-17-08)**

Modifications (requires setup program version 1.0.1.22 or later):

1. Fixed problem with reading coming from chained units. If the GageWay was in a continuous read mode, the first character in a packet from a chained unit may have been truncated.
2. Fixed problem with getting multiple reading from chained units when a read all request was made.

**Ver 2.41 (7-30-08)**

Modifications:

1. Reduced default contact bounce time from 125 msec to 40 msec. This reduced time may be required for continuous reads from the ProCable.

**Ver 2.43 (3-16-09)**

Modifications:

1. Increased wait time for Mitutoyo clock signals from 2 msec to 12 msec. Mitutoyo Micrometer 164-162 has a dead time of 6 msec between clock bits 20 and 21.

**Ver 2.44 (6-15-09)**

Bug Fixes:

1. Measurement bug fixed with CDI gage in metric mode. If gage reading was 10.123, valued reported by GageWay was 1.123. This problem only happened with the GageWay3 and the GageWay5.

**Ver 2.45 (1-4-11)**

Bug Fixes:

1. Fixed problem of occasionally not sending command string to host computer when read switch in channel A was configured to "Send string to host computer".