
Wireless Solution for Proficy SPC

Setup Guide *for the* ***Wireless Interface Cable*** *with GagePort Emulation*

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 ***Kirkwood Cables, LLC***

www.kirkwoodcables.com

Setup Guide Version 1.10

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About the Wireless Solution for Proficy SPC

Kirkwood Cables, LLC, in cooperation with MicroRidge Systems (www.MicroRidge.com), has developed a seamless way to bring wireless gaging capability to GE's Proficy SPC software.

Until now, the use of wireless gaging with Proficy SPC has been extremely limited and has typically depended on the availability of a wireless interface from the specific gage manufacturer. A separate wireless receiver has been required for each gage used with a GagePort, which is the interface box necessary to bring data into Proficy SPC. In addition, many of the wireless interfaces from the gage manufacturers have suffered from short battery life, poor transmit button longevity, and breakdown of data reception in noisy environments.

The new Wireless Interface Cable from Kirkwood Cables, LLC, coupled with MicroRidge's MobileCollect wireless system, enables wireless data collection into Proficy SPC from a massive variety of gage types and manufactures, and requires only a single wireless receiver per station to collect data from up to 12 individual gages. MicroRidge's MobileCollect Selection Tool (for download at www.microridge.com/wl_mc_select.htm) provides a comprehensive list of gage interfaces currently available for use with the MobileCollect wireless system.

MicroRidge has also addressed the reliability and longevity issues that have plagued other systems and led to higher maintenance and costs associated with those systems. See www.microridge.com/wl_compare.htm to compare some of the advantages of MobileCollect over other wireless systems.

Kirkwood Cables, LLC offers two versions of the Wireless Interface Cable as follows:

2104-1X9-GK, supports up to 4 wireless gages at one station
2104-3X9-GK, supports up to 12 wireless gages at one station

These Wireless Interface Cables connect a MicroRidge MobileCollect RS-232 Base directly to a PC, either into a COM port or through a serial-to-USB converter, and appear to Proficy SPC as either one or three GP-2104NT GagePorts. The Wireless Interface Cables also have FlashCable emulation capability, which allows a custom Gage Name and Calibration Date to be stored in the cable for each gage.

MicroRidge provides MobileCollect setup software, which allows the wireless transmitter for each gage to be assigned to a specific port. The unique ID for each gage transmitter is then displayed in the Serial Number field in Proficy SPC. In this way, specific gages are assigned to specific ports without having to be separated in hardware, as they are with GagePorts. This easy port-setup procedure only has to be performed once, before the first use of Proficy SPC. See the Quick-Start section of this guide to quickly set up the ports and get started.

Version 1 of the Wireless Interface Cables support only wireless gaging on a single station. Future versions may allow wireless gaging to be used alongside GagePorts on the same station by connecting them together with a GPA-100 GagePort Multiplexer. Version 1 also supports only readings initiated from the gage or wireless transmitter, while future versions may include the ability to request readings from the Proficy SPC software. If you require either of these features in your application, or have any other questions or feedback, please let us know at www.kirkwoodcables.com/contact-us.html.

Installation and Setup

Installing the Software and Drivers

1. Install the latest version of the MobileCollect Setup Program

This program is included on the MobileCollect CD and will be needed to set up the ports that Proficy SPC will use to recognize each individual gage. More information about the MobileCollect Setup program is also included in Chapters 1 and 7 of the MobileCollect User's Guide, which comes with the MicroRidge equipment, either in book format or on the MobileCollect CD.

2. Install the USB drivers for the Serial-to-USB cable

Assuming that the Wireless Interface Cable (2104-1X9-GK or 2104-3X9-GK) will be connected to the PC using a USB port rather than a COM port, a Serial-to-USB cable will be required. Before connecting the Serial-to-USB cable to the PC, install the drivers for that cable. If using the USB-1SP-6 from MicroRidge, the drivers are included on a CD that comes with the cable.

3. Install Proficy SPC

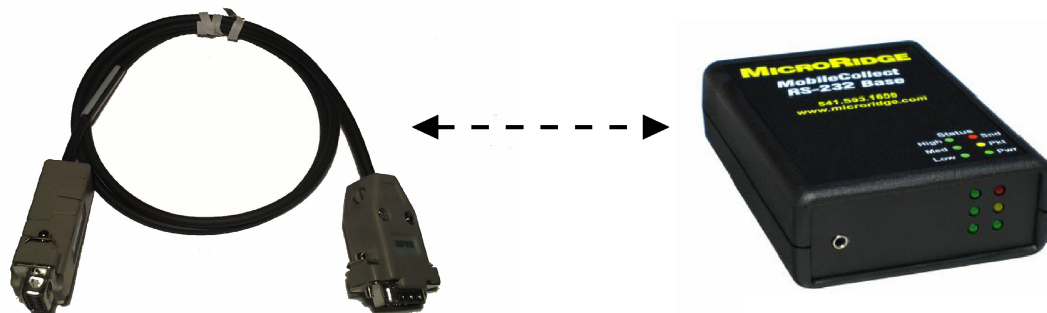
Install Proficy SPC if it is not already installed on the station. The procedure for installing Proficy SPC is beyond the scope of this User's Guide.

Connecting the Hardware

The first step in using the Wireless Solution for Proficy SPC is to connect the hardware as follows:

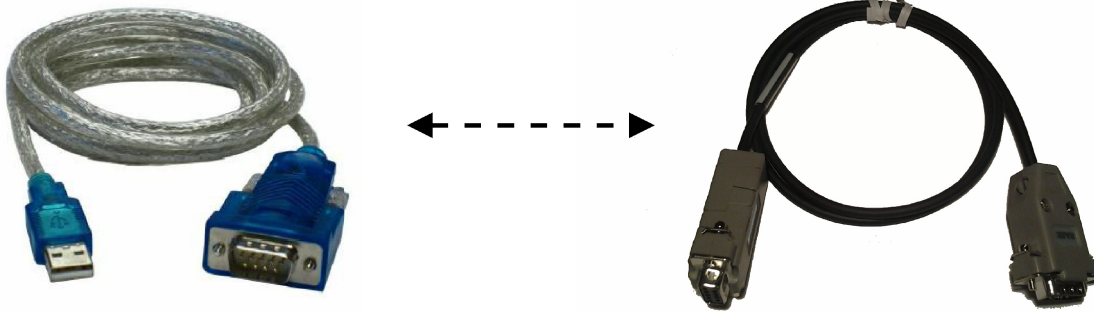
1. Connect the Wireless Interface Cable to the MobileCollect Base

Find the end labeled "BASE" of the 2104-1X9-GK or 2104-3X9-GK and connect it to the back of the MobileCollect RS-232 Base, as pictured below. Also connect to the back of the Base the power supply that comes with it, and plug the power supply into wall power.



2. Connect the Wireless Interface Cable to the PC

If your PC has an available COM port, the other end of the Wireless Interface Cable (2104-1X9-GK or 2104-3X9-GK) can usually be connected directly to the PC's COM port. Most modern PC's have USB ports instead of COM ports. In that case, the Serial-to-USB converter from MicroRidge (USB-1SP-6), shown below, is recommended. Connect the Wireless Interface Cable to the Serial-to-USB cable, and then plug the Serial-to-USB cable into the USB port on the PC.



3. Connect the gages to the Mobile Modules

The Mobile Modules are the gage transmitters that attach to each gages. Attach each Mobile Module to the specific gage with which it is to be used. More information about attaching the Mobile Modules is available in Chapter 6 of the MobileCollect User's Guide, which comes with the MicroRidge equipment, either in book format or on the MobileCollect CD.

Once the hardware is connected, proceed to Setting Up the Ports.

Setting Up the Ports

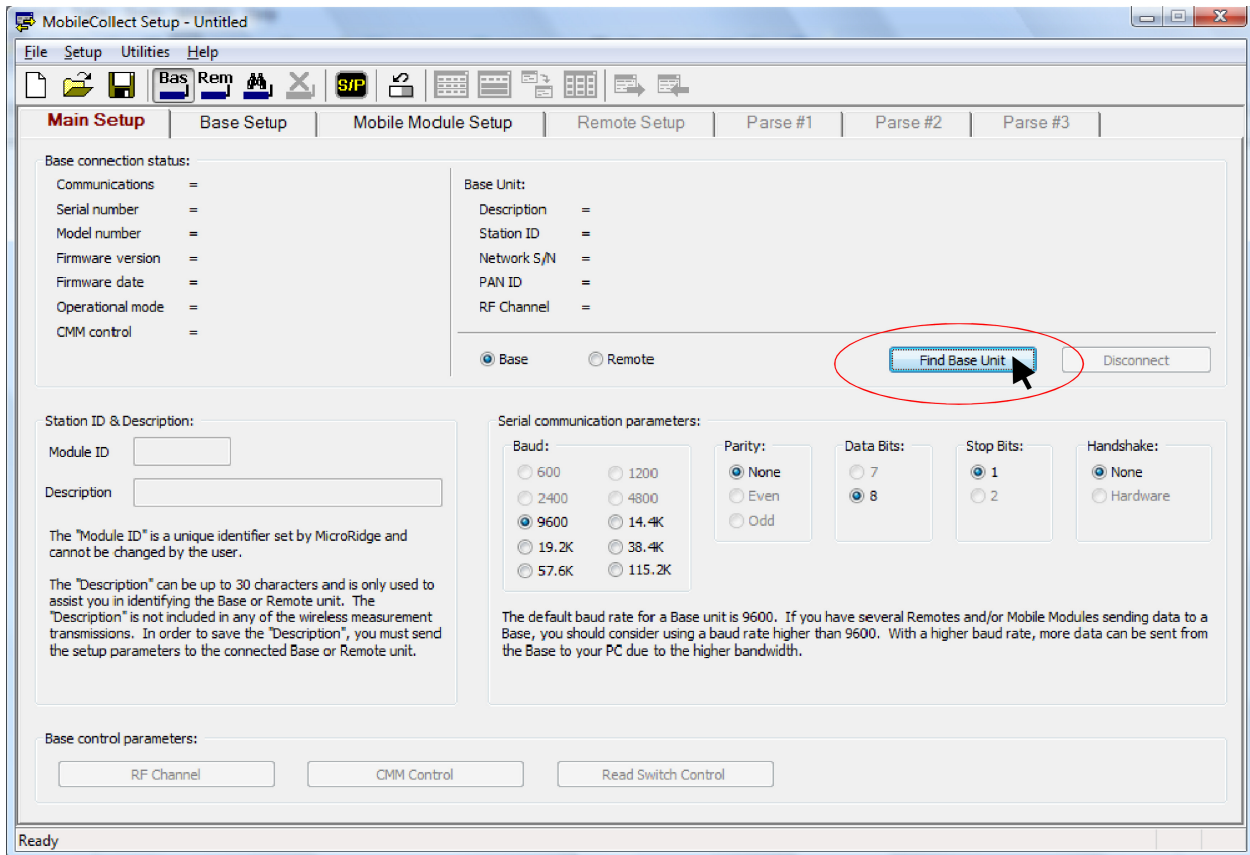
Setting Up the Ports is required to associate specific gages to ports that will be recognized in ProficySPC:

1. Start the MobileCollect Setup Program and find the Base

Double-click on the desktop icon to start the MobileCollect Setup Program.

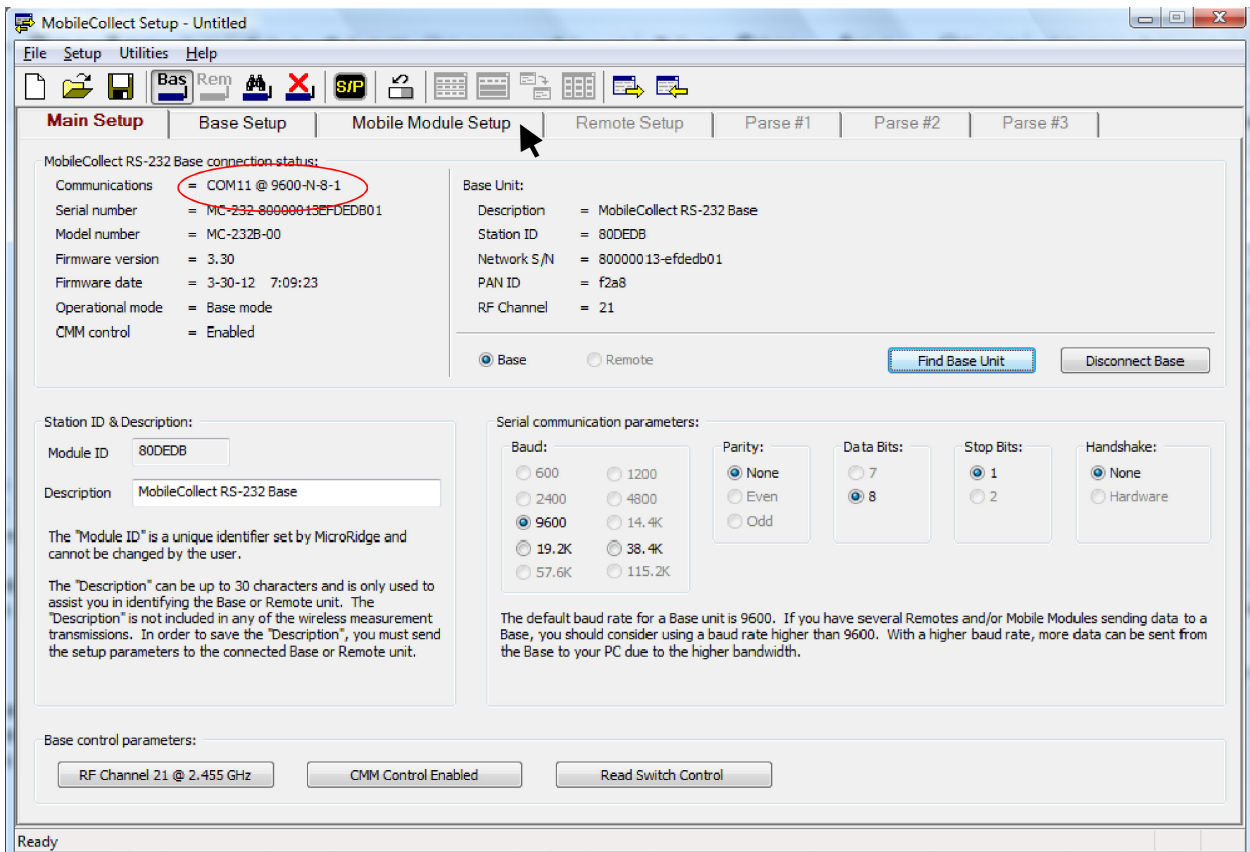


When the program first starts, this is what you'll see. The Main Setup tab will be displayed. Click on the "Find Base Unit" button.



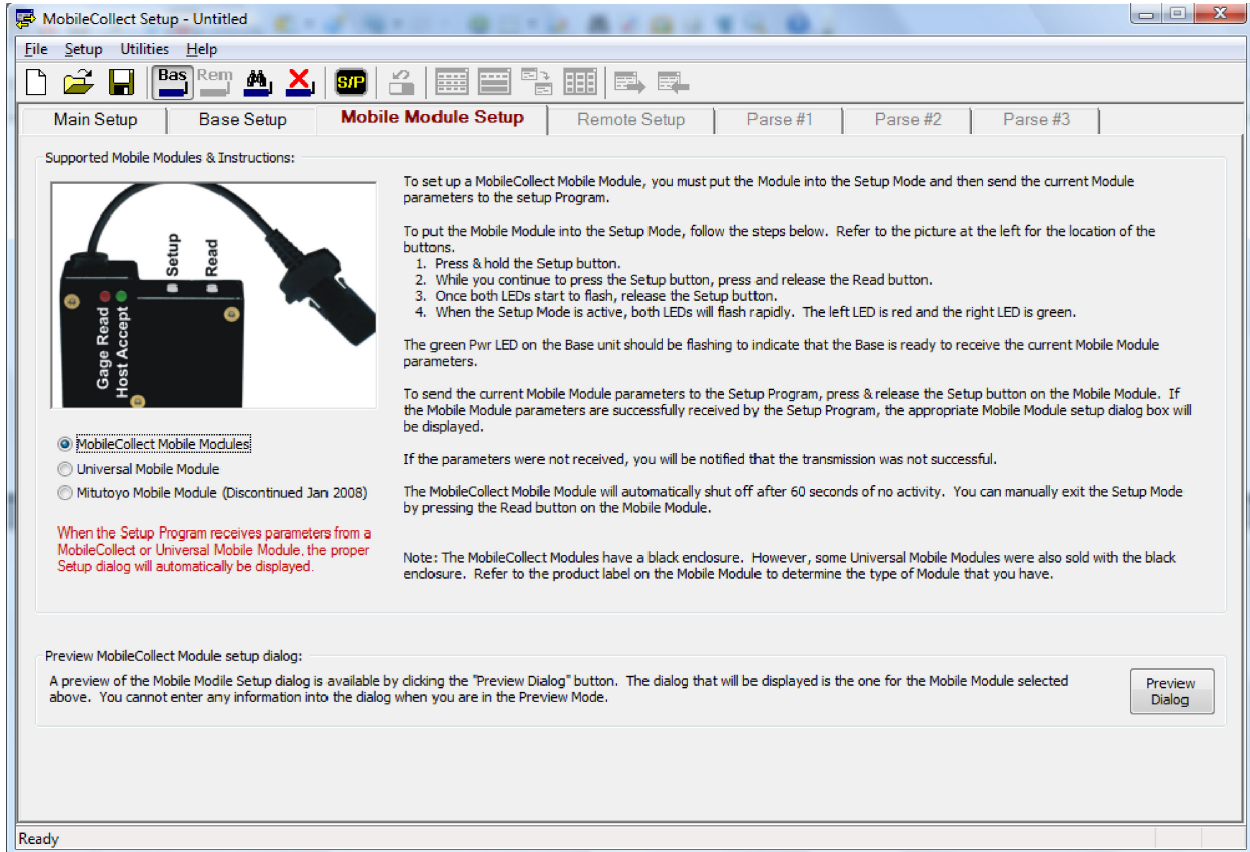
2. Note the COM port assigned to the Base for future reference

When the Base is found, write down the COM number shown under the connection status.



3. Set up the Mobile Modules

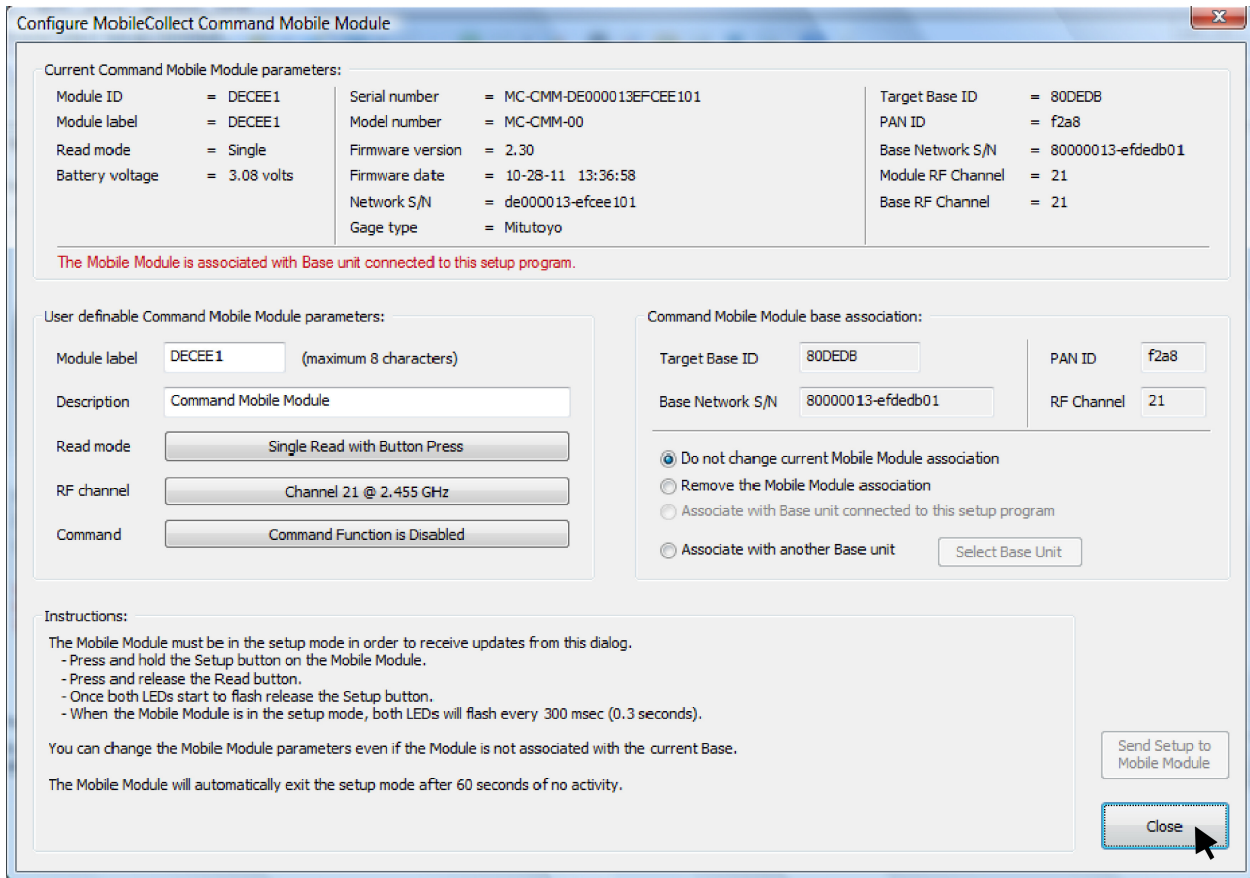
Click on the Mobile Module Setup tab, as shown by the arrow in the previous illustration. The Mobile Module Setup tab is shown below.



Perform the following steps using the buttons on the Mobile Module to send the Mobile Module parameters to the Setup Program. These steps are also outlined on the Mobile Module Setup tab, although more detail is explained in step #4 below.

1. Press & hold the Setup button.
2. While you continue to press the Setup button, press and release the Read button.
3. Once both LEDs start to flash, release the Setup button.
4. Wait a few seconds for the LEDs to flash more rapidly than they will at first. The more rapid flashing indicates that the Mobile Module is ready to transmit its parameters.
5. To send the current Mobile Module parameters to the Setup Program, press & release the Setup button on the Mobile Module. If the Mobile Module parameters are successfully received by the Setup Program, the appropriate Mobile Module setup dialog box will be displayed.

After performing step #5 on the previous page, the following dialog box will appear:



Once this dialog appears, the MobileCollect Setup Program has received the information it needs from this Mobile Module. If the lights on the Mobile Module are still flashing, press and release the Read button to turn them off.

Close the dialog box by clicking on the "Close" button as shown in the illustration above.

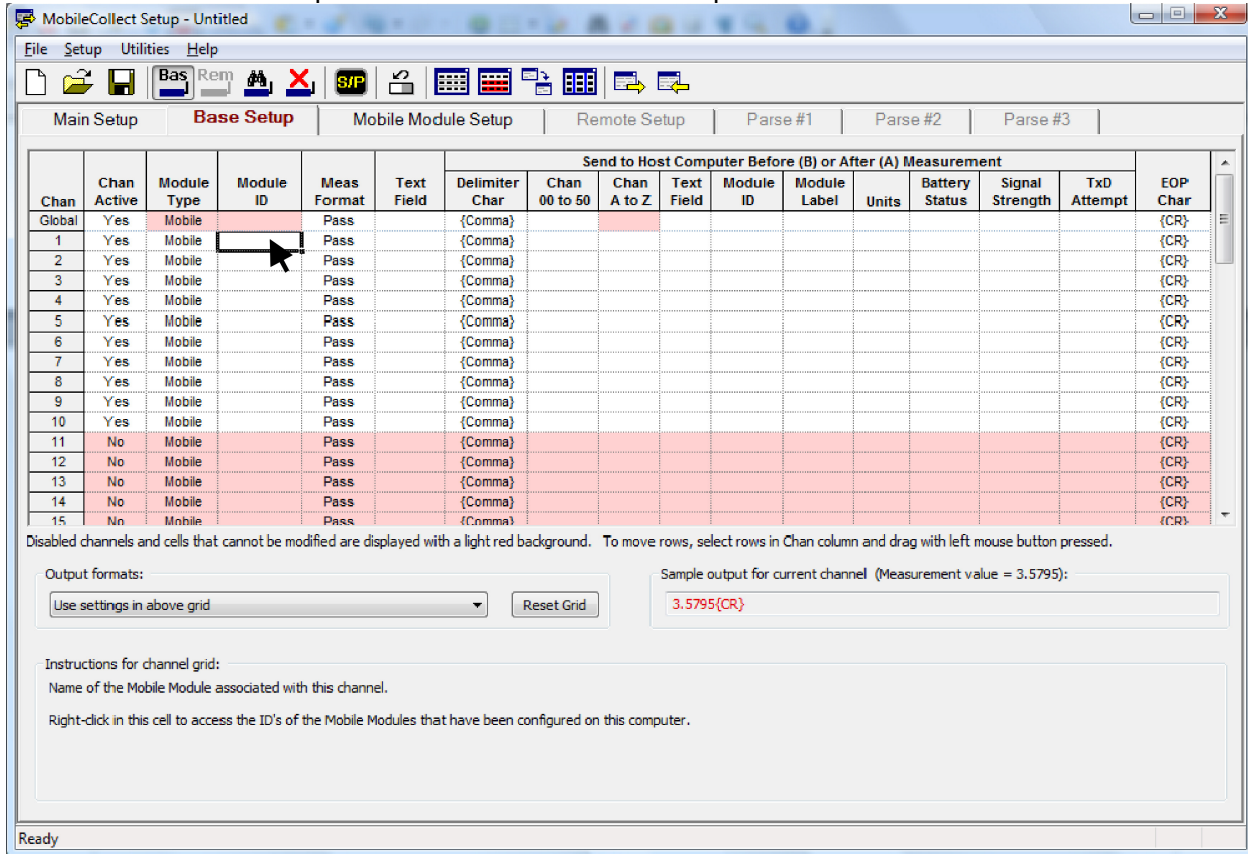
Repeat this procedure (beginning on the previous page) for each of the Mobile Modules that you want to use with Proficiency SPC.

Once this dialog has appeared for each of the remaining Mobile Modules, proceed to the next section to set up the Base.

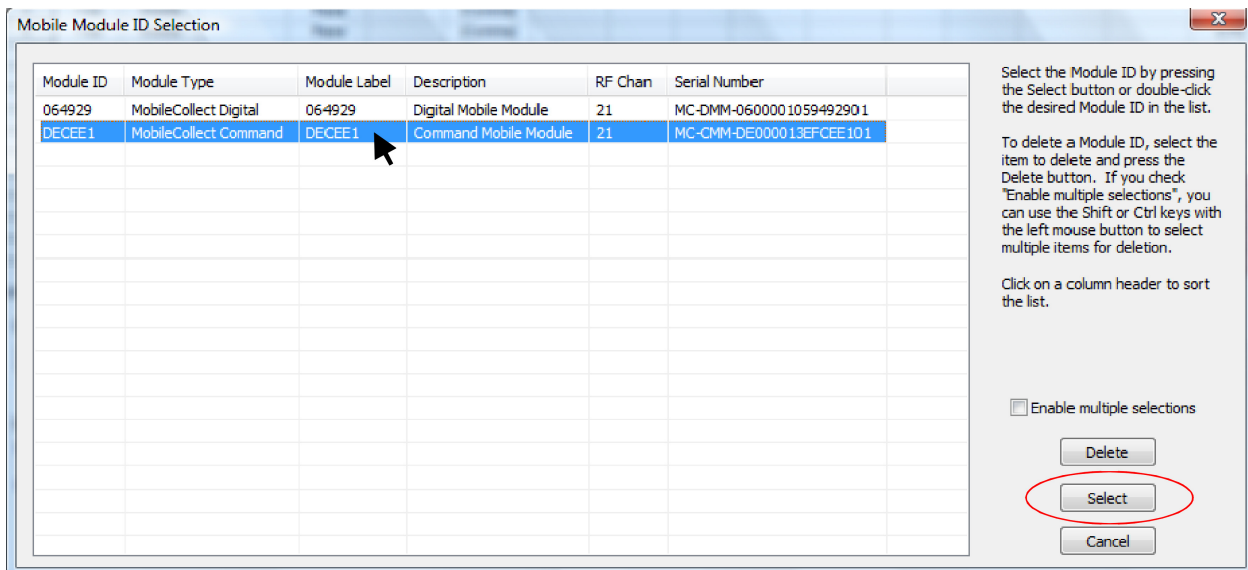
4. Set up the Base

a. Associate the Mobile Modules with the desired ports

Select the Base Setup tab in the MobileCollect Setup software. It looks like this:



The Base Setup tab is where the Mobile Modules are associated with ports. Right-click on the Mobile ID field of the desired port in order to select from the list of available Mobile Modules:



Select the Mobile Module you would like to associate with the desired port and click on the “Select” button, or simply double-click on the Mobile Module, and its unique ID will then be shown as associated with the selected port in the Base Setup tab.

Perform this step 4a to associate the remaining Mobile Modules with the desired ports.

b. Select the correct output format

The Wireless Interface Cable requires that readings be sent in a certain output format. Therefore, select "Meas, Chan xx" from the Output format drop-down list, as shown below:

MobileCollect Setup - Untitled

File Setup Utilities Help

Main Setup **Base Setup** Mobile Module Setup Remote Setup Parse #1 Parse #2 Parse #3

Chan	Chan Active	Module Type	Module ID	Meas Format	Text Field	Send to Host Computer Before (B) or After (A) Measurement										EOP Char
						Delimiter Char	Chan 00 to 50	Chan A to Z	Text Field	Module ID	Module Label	Units	Battery Status	Signal Strength	TxD Attempt	
Global	Yes	Mobile		Pass		{Comma}										{CR}
1	Yes	Mobile	DECEE1	Pass		{Comma}										{CR}
2	Yes	Mobile	064929	Pass		{Comma}										{CR}
3	Yes	Mobile		Pass		{Comma}										{CR}
4	Yes	Mobile		Pass		{Comma}										{CR}
5	Yes	Mobile		Pass		{Comma}										{CR}
6	Yes	Mobile		Pass		{Comma}										{CR}
7	Yes	Mobile		Pass		{Comma}										{CR}
8	Yes	Mobile		Pass		{Comma}										{CR}
9	Yes	Mobile		Pass		{Comma}										{CR}
10	Yes	Mobile		Pass		{Comma}										{CR}
11	No	Mobile		Pass		{Comma}										{CR}
12	No	Mobile		Pass		{Comma}										{CR}
13	No	Mobile		Pass		{Comma}										{CR}
14	No	Mobile		Pass		{Comma}										{CR}
15	No	Mobile		Pass		{Comma}										{CR}

Disabled channels and cells that cannot be modified are displayed with a light red background. To move rows, select rows in Chan column and drag with left mouse button pressed.

Output formats:

- Use settings in above grid
- Use settings in above grid
- Meas, Chan xx**
- Chan xx, Meas
- Meas, Module ID
- Meas, Chan xx, Module ID, Units, Battery, Signal, Attempts

Reset Grid

Sample output for current channel (Measurement value = 3.5795):

3.5795{CR}

Right-click in this cell to access the ID's of the Mobile Modules that have been configured on this computer.

Ready

c. Send the Base setup to the Base unit

Click the icon with the arrow to the right, shown below, to send the Base setup to the Base.

MobileCollect Setup - Untitled

File Setup Utilities Help

Main Setup **Base Setup** Mobile Module Setup Remote Setup Parse #1 Parse #2 Parse #3

Chan	Chan Active	Module Type	Module ID	Meas Format	Text Field	Send to Host Computer Before (B) or After (A) Measurement										EOP Char
						Delimiter Char	Chan 00 to 50	Chan A to Z	Text Field	Module ID	Module Label	Units	Battery Status	Signal Strength	TxD Attempt	
Global	Yes	Mobile		Right		{Comma}	A1									{CR}
1	Yes	Mobile	DECEE1	Right		{Comma}	A1									{CR}
2	Yes	Mobile	064929	Right		{Comma}	A1									{CR}
3	Yes	Mobile		Right		{Comma}	A1									{CR}
4	Yes	Mobile		Right		{Comma}	A1									{CR}
5	Yes	Mobile		Right		{Comma}	A1									{CR}
6	Yes	Mobile		Right		{Comma}	A1									{CR}
7	Yes	Mobile		Right		{Comma}	A1									{CR}
8	Yes	Mobile		Right		{Comma}	A1									{CR}
9	Yes	Mobile		Right		{Comma}	A1									{CR}
10	Yes	Mobile		Right		{Comma}	A1									{CR}
11	No	Mobile		Right		{Comma}	A1									{CR}
12	No	Mobile		Right		{Comma}	A1									{CR}
13	No	Mobile		Right		{Comma}	A1									{CR}
14	No	Mobile		Right		{Comma}	A1									{CR}
15	No	Mobile		Right		{Comma}	A1									{CR}

Disabled channels and cells that cannot be modified are displayed with a light red background. To move rows, select rows in Chan column and drag with left mouse button pressed.

Output formats:

- Meas, Chan xx

Reset Grid

Sample output for current channel (Measurement value = 3.5795):

3.5795,02{CR}

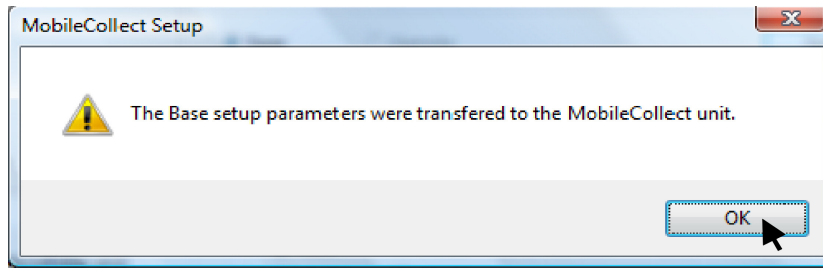
Instructions for channel grid:

Name of the Mobile Module associated with this channel.

Right-click in this cell to access the ID's of the Mobile Modules that have been configured on this computer.

Send the Base setup parameters to the Base unit

The Base setup will then be sent to the Base, and this message indicates that it is complete:

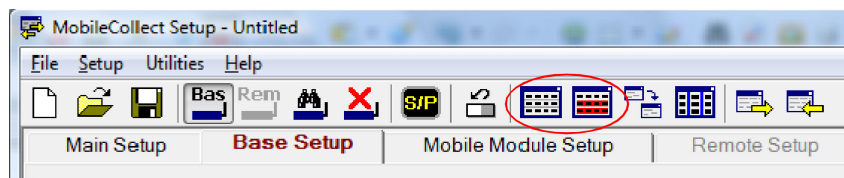


Click “OK” on this message to return to the Base Setup tab. The port setup is now complete.

The following sections illustrate other buttons on the tool bar that may be needed for setup.

d. Enable all channels

If you are using a 2104-3X9-GK Wireless Interface Cable, which supports up to 12 ports, you will need to enable all channels in order to set up ports 11 and 12. Click the “Enable all channels” button, the button on the left, circled below, to enable all channels. The button on the right, circled below, disables channels 11 through 50.



e. Read the Base setup from the Base unit

In some cases you may want to read the Base setup previously stored in the Base. This is easily done using the “Read the Base setup from the Base unit button”, which is the button on the right, circled below. The button on the left, circled below, is the “Send the Base setup to the Base unit” button, which was demonstrated in section 4c.



Configuring the COM port for Proficy SPC

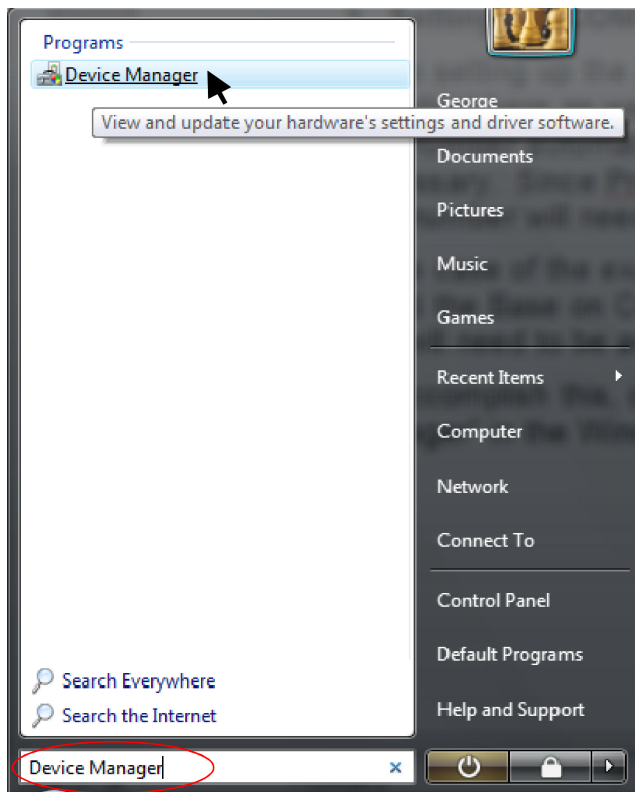
1. Set the COM port number in Device Manager

While setting up the ports in the last section, the COM port number was noted. This is important here as we consider which COM port number to use with Proficy SPC. If the COM port number automatically assigned to the Base is between 1 and 4, no further adjustment is necessary. If this is the case, proceed to the next step, “Set the COM port in Proficy SPC.”

Since Proficy SPC only recognizes ports 1 through 4 for data collection, the COM port number will need to be adjusted if it is not already assigned within that range. If you are using a regular COM port that is built into the PC, the COM port number is likely to be within the proper range already. If you are using a Serial-to-USB converter, the Virtual COM port may well have been assigned a COM number higher than 4.

In the case of the example shown on page 7 of this guide, the MobileCollect Setup software found the Base on COM 11, which is outside the acceptable range for Proficy SPC. Therefore, this will need to be adjusted in the Windows Device Manager.

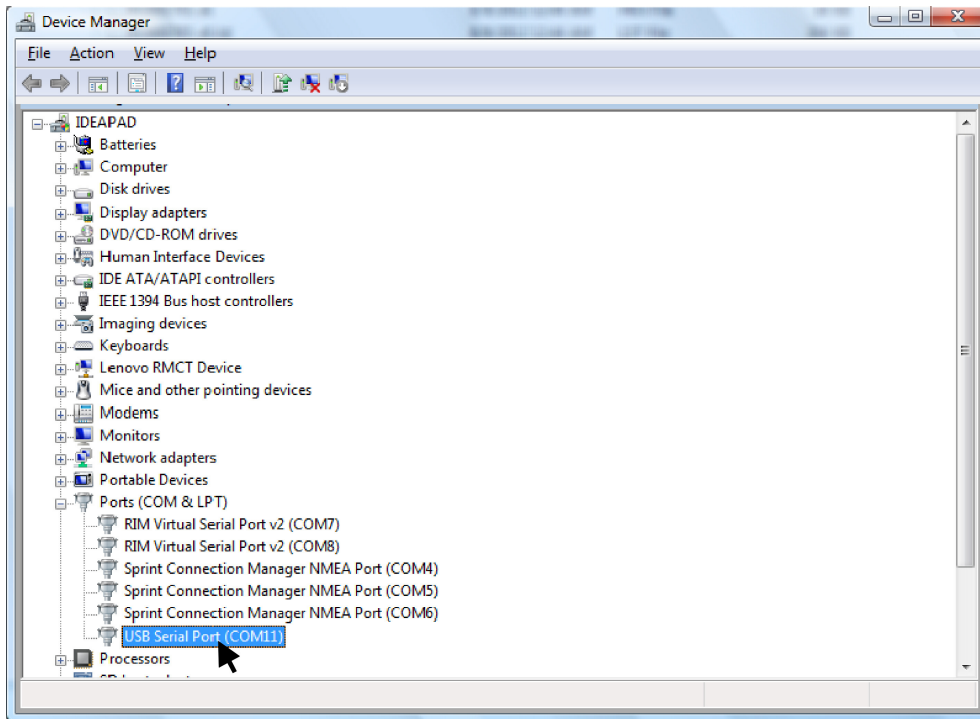
To accomplish this, open the Device Manager. This can easily be done by typing “Device Manager” in the Windows Start menu search box as shown below. The Device Manager can also be found in the Control Panel.



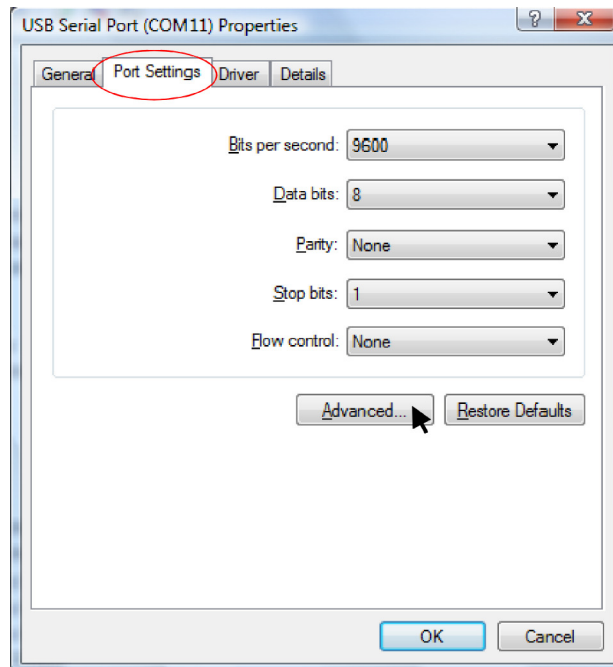
When the Device Manager is found, as shown above, click on it to open the Device Manager.

Before the Device Manager starts, you may see a message box that says, “Windows needs your permission to continue.” If so, click the “Continue” button to continue.

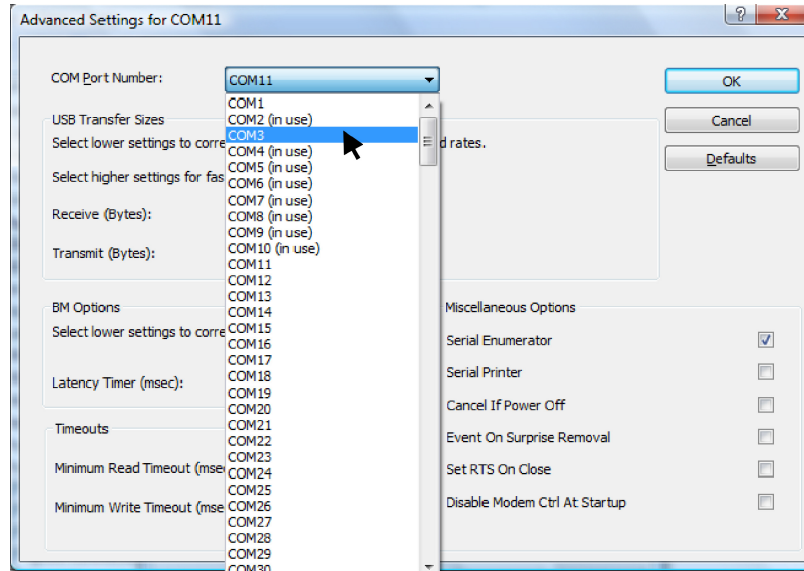
When the Device Manager opens, expand the list of Ports (COM & LPT) as shown below. Double-click on the port you'd like to adjust (COM 11 in this example):



The Serial Port Properties box opens. Select the Port Settings tab (circled below) and then click on the “Advanced...” button, as shown:

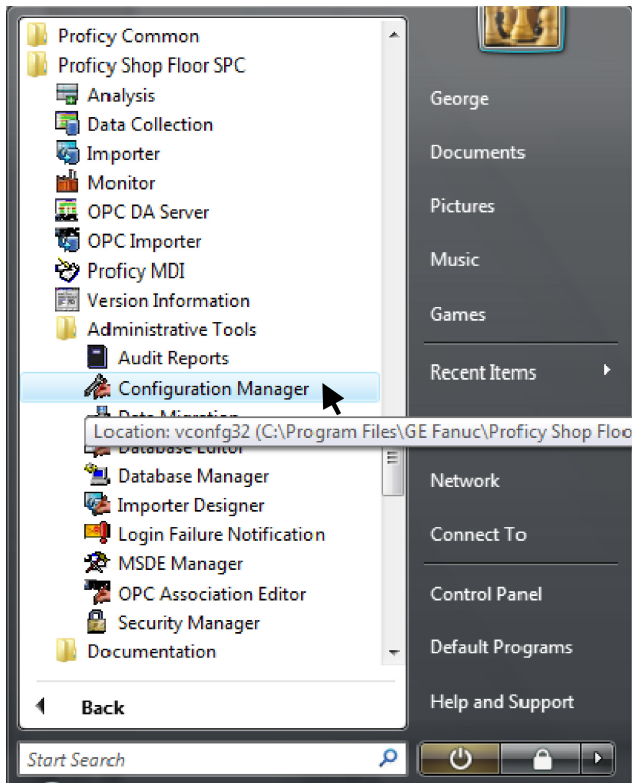


In the Advanced Settings box, select a different COM port from the COM Port Number drop down list, preferably one that is not “in use.” Any COM port number between 1 and 4 are acceptable. In the case of this example, COM 3 is selected. Click “OK” when done. If needed, also click “OK” to close the Properties box, and also close the Device Manager, as the port number adjustment is now complete.

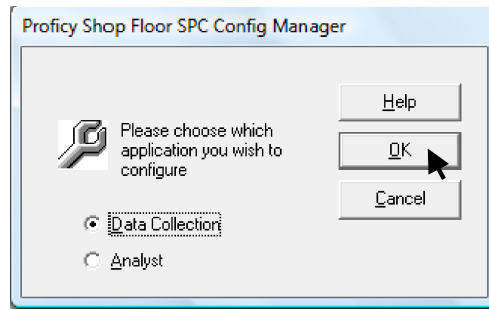


2. Set the COM port number in Proficy SPC

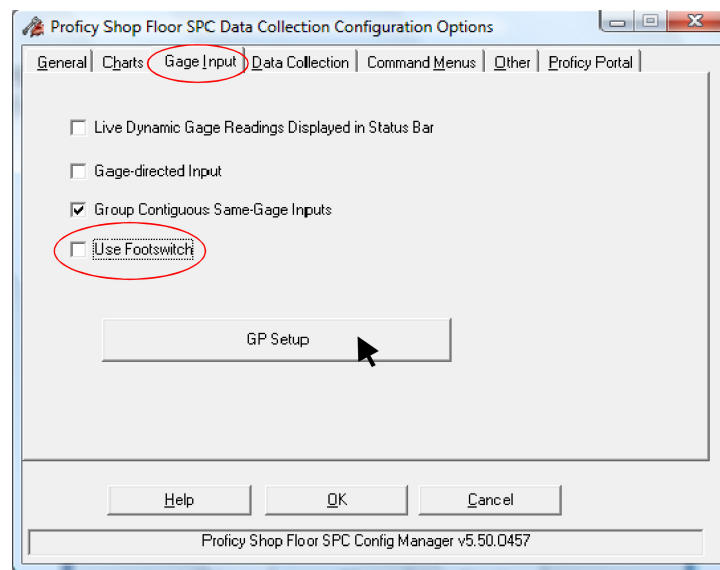
Proficy SPC needs to be set up ahead of time in order to know which COM port to use with the Wireless Interface Cable. From the Start menu, select “All Programs,” and then open the Configuration Manager, which can be found under Proficy Shop Floor SPC... Administrative Tools, as shown:



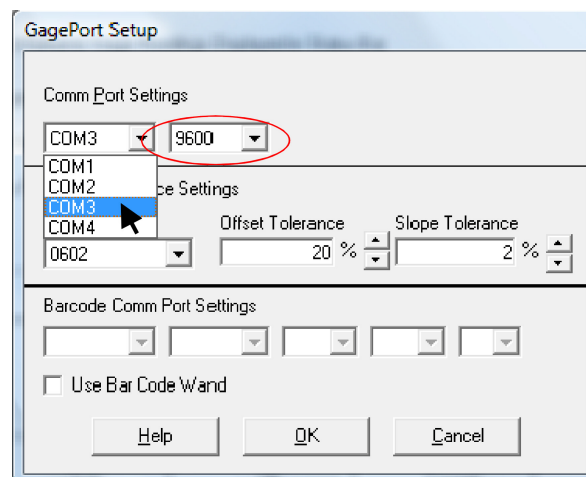
The following box will then appear. Make sure “Data Collection” is selected, then click “OK.”



In the Proficy Shop Floor SPC Data Collection Configuration Options box, select the Gage Input tab (circled below). Un-check the “Use Footswitch” option (as also circled below), as the Wireless Interface Cable does not have a footswitch input. Click on the “GP Setup” button.

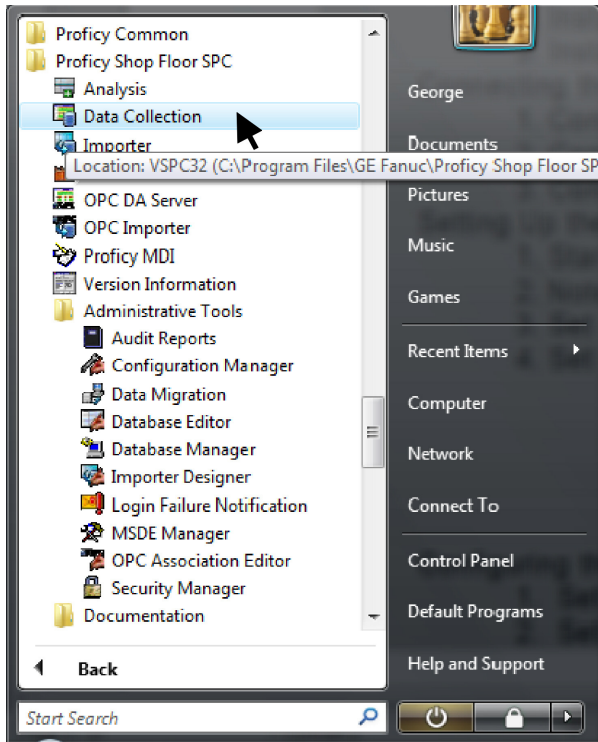


In the GagePort Setup box, select the appropriate COM port from the drop-down list to match that earlier assigned or configured to the Base. Verify that the baud rate is set at 9600. Click “OK” to close the GagePort Setup box, and click “OK” again to close the Configuration Options box. The COM port is now configured for Proficy SPC.

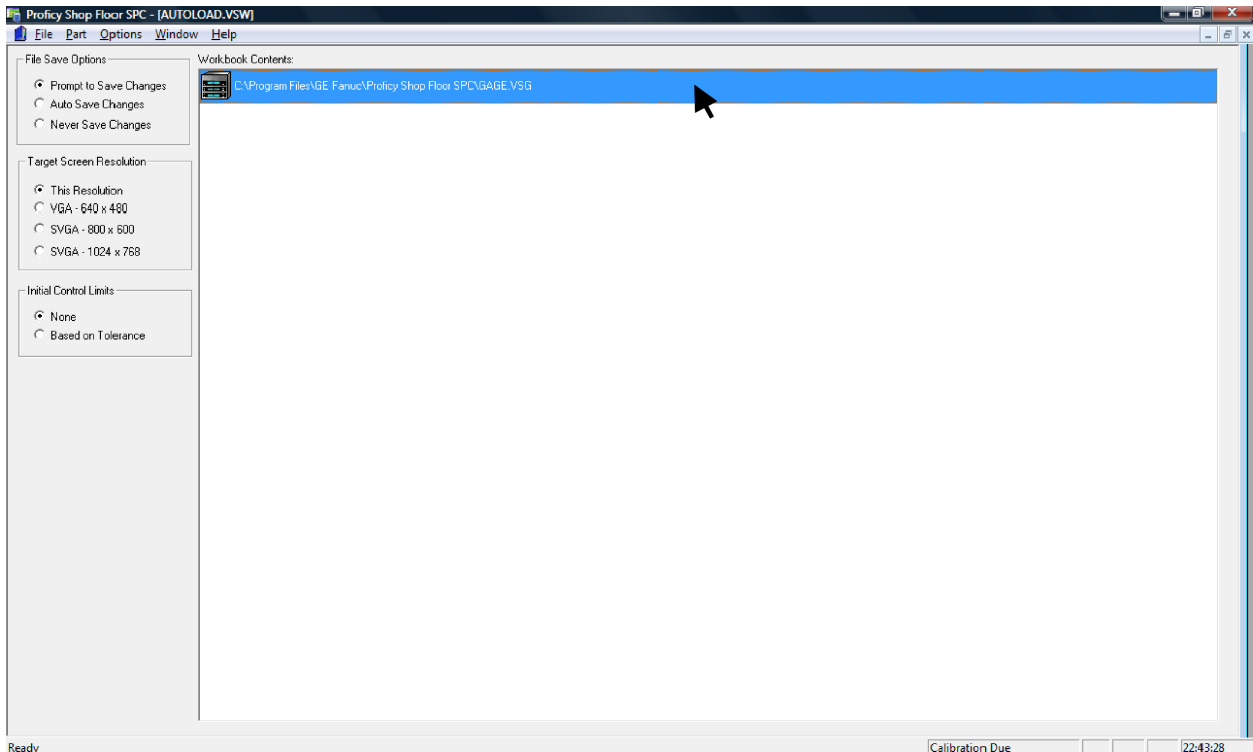


Starting Proficy Shop Floor SPC

To start Proficy SPC, go to the Start menu, select “All Programs,” and then open Data Collection, which can be found under Proficy Shop Floor SPC as shown:



There may be a few message boxes that come up when starting Proficy SPC. Just click “OK” to close these. On the following screen, double-click on the path to “GAGE.VSG” as shown:

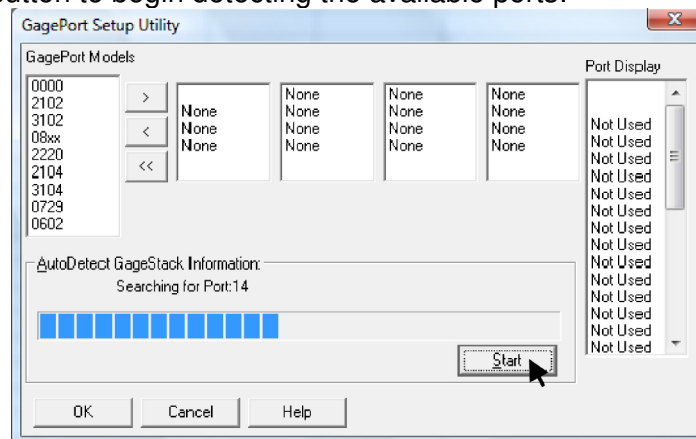


The GageSheet, below, is what you will see when you open the GAGE.VSG file. Notice that the Gage Names are “Gage 01” and “Gage 02.” These are the default Gage Names and can be customized and programmed into Flash memory. The Gage Type defaults to Mitutoyo and is not configurable in Version 1.00 of the Wireless Interface Cables. If you wish, turn on your gage and take a few sample readings, which show up in the “Test Value” column. The Cal. Date is also programmable and defaults to 12/31/2107, which is the farthest future date available. Note that the values that appear in the Serial # column match the Mobile Module ID's that were associated with the ports, as shown in the illustrations on page 11.

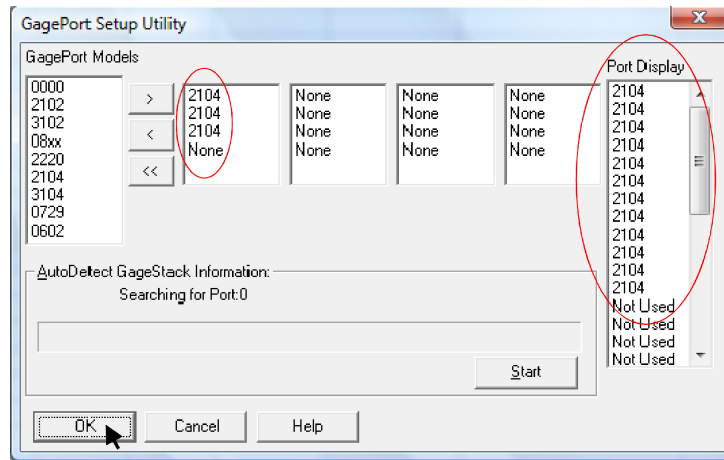
Port	Gage Name	GP Model	Type	Mode	Fixture	Test Value	Cal. Date	Serial #	Flash?	Mastering Timeout(hr)	Minimum Movement
1	Gage 01	2104	Mitutoyo	Static		0.6145000	12/31/2107	DECEE1	Yes	0.0000	0.0000
2	Gage 02	2104	Mitutoyo	Static		-1.2940000	12/31/2107	064929	Yes	0.0000	0.0000
3											
4											
5											
6											
7											
8											
9											
10											
11											
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1. GagePort Setup

Before using Proficy SPC to collect data, be sure to set up the GagePorts, so Proficy knows what “GagePorts” it expects to see when it resets the Wireless Interface Cable. This will be particularly important if you are using the 12-port version of the Wireless Interface Cable (2104-3X9-GK). From the Gages menu, select “GagePort Setup”, which opens the box below. Click on the “Start” button to begin detecting the available ports:



When this process completes, you will see something similar to the box below:



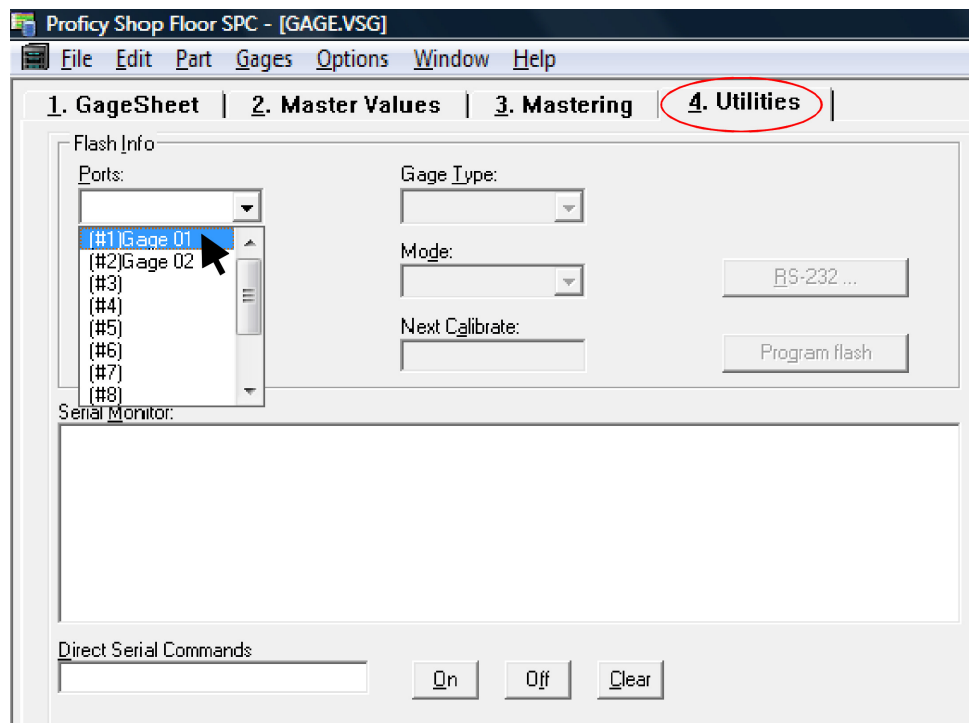
As you can see circled on the left, there have been three 2104 GagePorts detected, and accordingly 12 ports are displayed in the circle on the right. This example shows the results of detecting the 12-port version of the Wireless Interface Cable (2104-3X9-GK). If you were to detect the 4-port version of the Wireless Interface Cable (2104-1X9-GK), you would see only one 2104 GagePort detected on the left, and only 4 ports accordingly displayed on the right.

Click OK to return to the GageSheet.

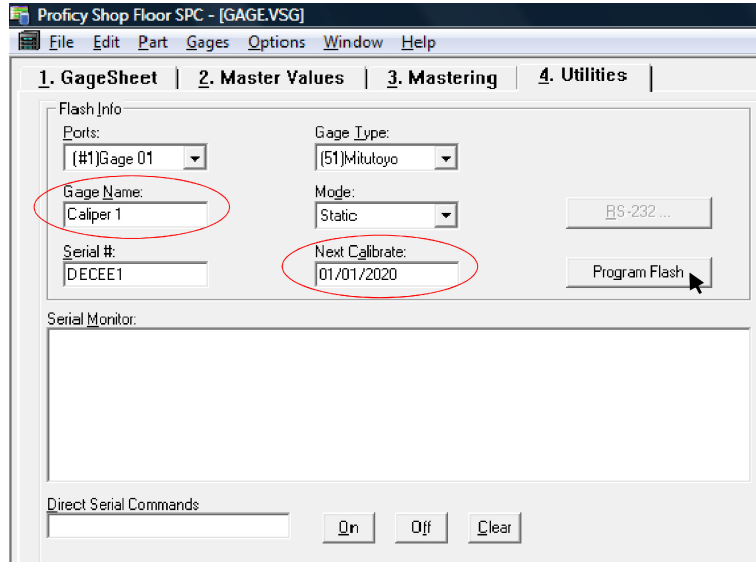
2. FlashCable Programming

While this Wireless Solution for Proficy SPC does not have a separate FlashCable for each port, the Wireless Interface Cable can store custom Gage Names and Calibration Dates for each of the gages used with Mobile Modules. The Wireless Interface Cable is programmed in Proficy exactly the same way as you would program any other FlashCable.

Select the Utilities tab, and then select the port that you would like to program from the Ports drop-down list, as shown:



Type a new Gage Name and Calibration Date, if you wish, as in the example shown, and click the “Program Flash” button.



In Version 1.00 of the Wireless Interface Cable, the Gage Type is not programmable for reasons of Flash memory capacity limitations. Since Gage Type is irrelevant to the functioning of the Wireless Interface Cable, the Gage Type defaults to Mitutoyo and is not programmable. If the ability to program the Gage Type is important to you in your application, please let us know at www.kirkwoodcables.com/contact-us.html.

The Mode and Serial # are also not programmable, since only Static readings are supported in Version 1.00 of the Wireless Interface Cable. The Serial # is defined by the Mobile Module ID and is therefore not programmable in the Utilities tab.

To see the new programmed information displayed in the GageSheet, select the GageSheet tab and from the Gages menu, select “Reset All.” That will read the Flash information from the Wireless Interface Cable and display it in the GageSheet as shown:

Port	Gage Name	GP Model	Type	Mode	Fixture	Test Value	Cal. Date	Serial #	Flash?	Mastering Timeout(hr)	Minimum Movement
1	Caliper 1	2104	Mitutoyo	Static			01/01/2020	DECEE1	Yes	0.0000	0.0000
2	Gage 02	2104	Mitutoyo	Static			12/31/2107	064929	Yes	0.0000	0.0000
3											
4											
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14											

This concludes the Installation and Setup of the Wireless Solution for Proficy SPC.

Once again, if you have any suggestions or feedback, or need further information or support, please contact us at www.kirkwoodcables.com/contact-us.html.