

Before You Begin — Driver Installation & Setup

As touch screen controllers and drivers become more sophisticated, it is now more important than ever that your system is setup properly. Please review the following to ensure that your system is ready.

Bergquist 5-Wire controllers are universal by design. This means the controller may be configured for a number of communication and power settings. Please check your 5-Wire controller board to ensure that these user-configurable settings are set correctly for your application. You may find the users guide for the Bergquist 5-Wire controller board at: www.bergquistcompany.com/to_electrical_info.cfm.

Select the "Boards" tab then proceed to the 5-Wire controller product. Make sure that you do not have another manufacturer's touch screen controller driver installed on your system. Many touch screen manufacturers' uninstall programs do not completely remove all

components of their drivers. **Note:** Before loading the new driver, you must first uninstall your current touch screen driver with the latest uninstall utility located in the "Common" directory of the driver files.

Bergquist drivers use your display driver software settings to accurately configure various touch screen driver setup files. Make sure that your display and your display driver cards are installed properly before installing any 5-Wire touch screen controller driver. If your display(s) are not configured and are working properly prior to loading the Bergquist controller drivers, the 5-Wire controllers will not function properly.

Now that you have double-checked your system settings and have verified that your system is working properly, proceed with the 5-Wire controller driver installation procedure.

INSTALL THE DRIVER:

1. Connect the 5-Wire controller to your computer (see 5-Wire Controller User's Guide).
2. Turn on your computer.
If yours is a USB application, Microsoft Windows® will load a temporary driver. Wait until Windows completes this process before proceeding.
3. Run the **Setup.exe** program provided with the Bergquist driver's disk or from the directory that the drivers are copied to. **Note:** If Windows asks if you want to allow an unsigned driver to be installed, click "Accept," and continue.
4. The **Welcome to Bergquist** installation screen will appear (see Figure 1). Read the information on the screen, then click "Next."

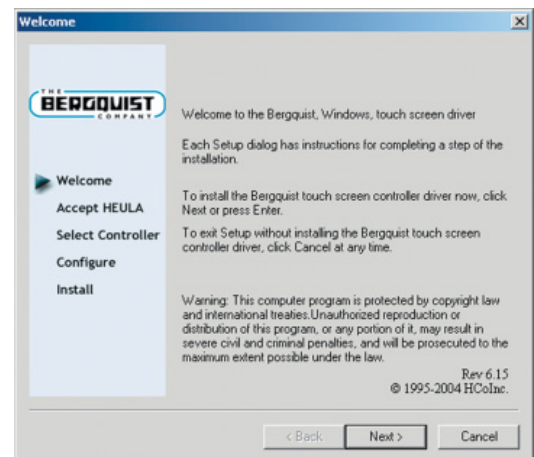


Figure 1

LICENSE AGREEMENT:

In order to proceed with the installation process, you must agree to the Bergquist license agreement (see Figure 2). Bergquist drivers are available at no charge to Bergquist touch screen controller board or chip customers only. Any unlawful use of Bergquist drivers is in strict violation of the United States and international copyright laws. Please contact Bergquist if you have any questions regarding the license agreement.

5. Click "I accept all of the terms of the above License Agreement."
6. Click "Next."

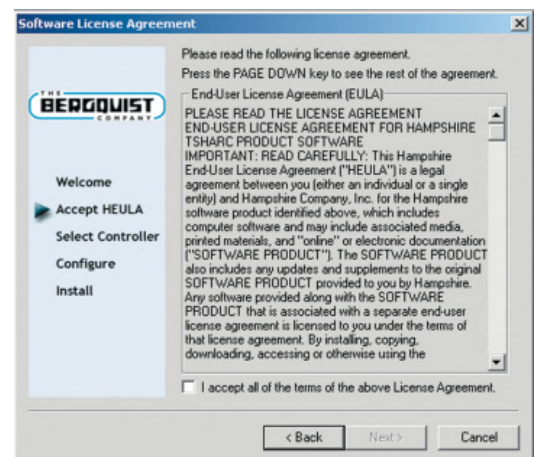


Figure 2

SELECT 5-WIRE CONTROLLER TYPE:

Refer to Figure 3. The “12 or 10 Bit Controller” is automatically selected for you.

7. In the “Controller Interface” field, select “Serial (RS-232),” “USB” or “PS/2,” depending on your application.

If you select the “Serial (RS-232)” interface, you may click the “Autodetect” button to find your controller and set the appropriate settings (see “Automatically Detect A Serial 5-Wire Controller;” below for selecting the communication interface.)

8. Click “Next.”

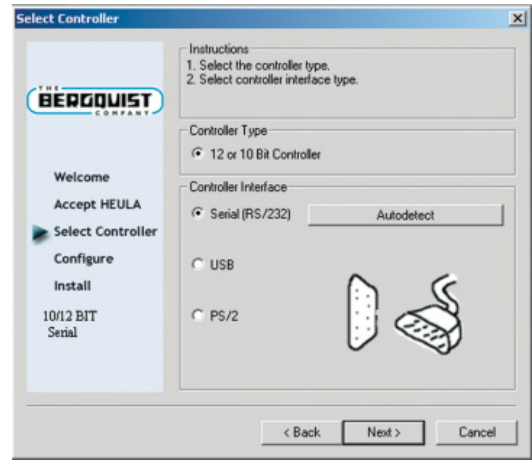


Figure 3

AUTOMATICALLY DETECT A SERIAL 5-WIRE CONTROLLER:

Refer to Figure 4.

9. Select the “Autodetect” option to automatically detect any of the 5-Wire RS-232 touch screen controller products.

IMPORTANT: Use “Autodetect” for serial communications only.

If you are using a USB controller, the controller will automatically be detected by your system at startup.

If you are using a PS/2 controller, select the “PS/2” controller interface option to load the appropriate device driver.

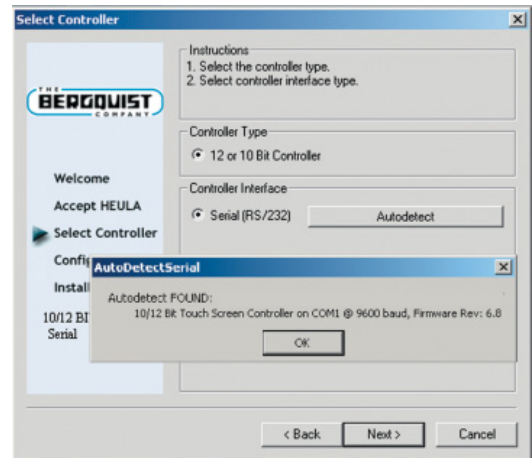


Figure 4

MANUAL SERIAL CONTROLLER SETUP:

Refer to Figure 5. If your computer did not detect your 5-Wire controller, or if you have configured your controller integration in a non-typical configuration, you may manually setup the 5-Wire controller board for RS-232.

10. Select the communications port, the IRQ settings, the base address and the baud rate. **Note:** All 5-Wire controller boards default to 9600 baud.

If you have a custom controller that is set to some other baud rate, select the appropriate baud rate.

11. Click “Next.”

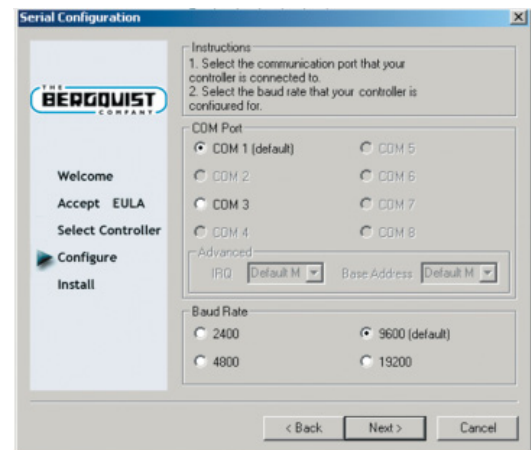


Figure 5

COMPLETE THE INSTALLATION PROCESS:

12. Click "Finish" (see Figure 6).

13. Reboot your computer when prompted to do so.

NOTE: When the computer reboots, the touch screen will be functional, but it will not be calibrated. You must calibrate the touch screen using the following configuration procedure before the touch screen will work properly.

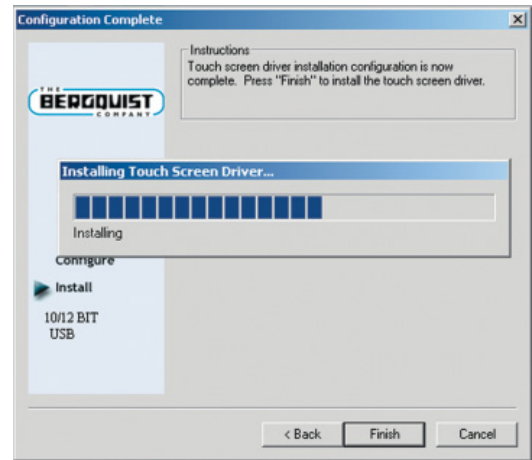


Figure 6

STARTING THE 5-WIRE DRIVER CONTROL PANEL:

Refer to Figure 7.

14. Run the Bergquist 5-Wire Control Panel as follows:

Start Menu > Programs > Bergquist Touch Screen Control Panel

If you do not interact with the Control Panel within 10 seconds, the Bergquist calibration program will be launched (see "Configure Calibration Options").

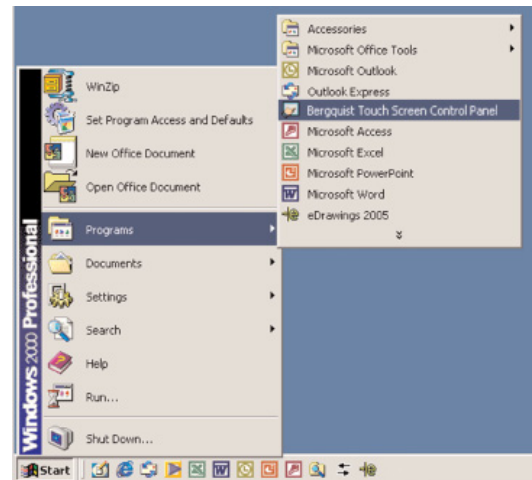


Figure 7

CONFIGURING YOUR 5-WIRE CONTROLLER(S) FOR MULTI-MONITOR USE:

Refer to Figure 8. A graphic representation of the monitor(s) installed on your system will be displayed. If you are using a single monitor, skip to **Configure Calibration Options** on the next page. **Note:** Microsoft does NOT support multi-monitor function for Win98.

15. Select the image of the display whose properties you would like to adjust.

Once a monitor image is selected, all subsequent configuration settings will be associated with that monitor.

Once you have configured one of the monitors, select the other display images to adjust its associated properties.

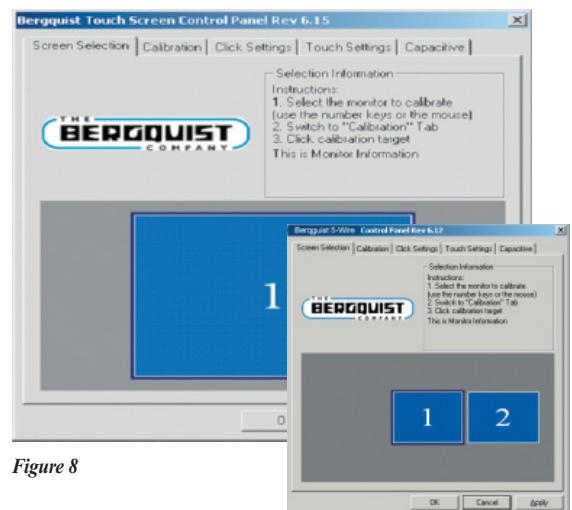


Figure 8

CONFIGURE CALIBRATION OPTIONS:

1. Click the "Calibration" tab. The **Calibration** screen will appear (see Figure 9).
2. Click "Configure." The **Calibration Options** screen will appear (see Figure 10).
3. Select the calibration type and offset options:

3-Point Calibration - Quick calibration of a known good touch screen overlay. No correction is applied.

4-Point Calibration - Compensates for skew, and some edge linearity anomalies.

7-Point Calibration - Provides a more accurate calibration than 3-point. No correction is applied.

20-Point Calibration - Provides the highest level of touch screen linearization and skew correction.

Calibration Offset - Because of the varied linearity that exists between touch screens, you may want to calibrate the edges of the touch screen more precisely. Experiment with this setting to find the best result.

4. Click "OK" to return to the **Calibration** screen when finished selecting options.

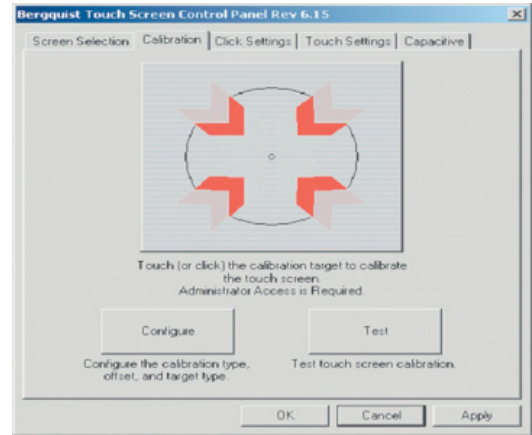


Figure 9

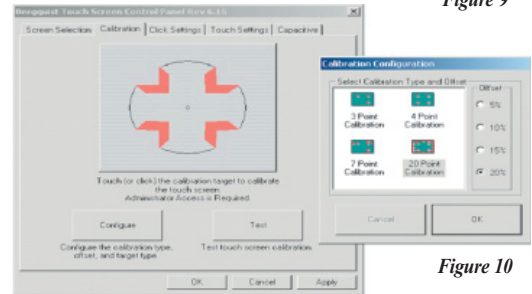


Figure 10

CALIBRATION ROUTINE:

1. Click on the large calibration target (see Figure 10) to begin the calibration process.

The calibration targets have been specially developed to assist you in calibrating your touch screen as accurately as possible. Make sure to touch the center of each target as accurately as possible.

2. As each target appears on screen (see Figure 11), touch and hold the center of the target until it shrinks and the word "Hold" is replaced by the word "Release".

The Calibration screen will automatically time out and return you to the Control Panel if the first point is not touched within 10 seconds. This is a time-out feature that has been added to the calibration program.



Figure 11

IN-PROCESS CALIBRATION TEST:

Refer to Figure 12. This is the last screen displayed in the calibration process.

1. Touch the screen and notice if the calibration target is displayed under your finger or stylus.

If the target appears directly under your finger, click the "Accept" button. If the target does not appear directly beneath your finger or stylus, click the "Cancel" button, reconfigure your calibration options, and recalibrate until you get an acceptable calibration. You may adjust the "Offset," or try the 4-point and/or 20-point calibration.

continued ►



Figure 12

In-Process Calibration Test (continued)

2. Select "Accept" to apply and record your calibration data. Select "Cancel" to return to the Calibration tab.
3. Once you return to the Calibration tab, click "OK" or "Apply" to save your settings.
If you have multiple monitors, return to the "Screen Selection" tab and select another monitor to calibrate.

DRAWING TEST:

Once you have calibrated your touch screen, you may test the configuration to ensure it is working properly. A simple, effective test is as follows:

1. On the Calibration tab of the Control Panel (see Figure 9), click "Test."
2. Draw on the screen with your finger or a stylus and notice if the screen is displaying your drawing accurately (see Figure 13).
3. Click or touch "Quit" to exit the drawing test screen.



Figure 13

RIGHT-CLICK SETTINGS:

"Timed Hold" Right-Click Mouse Event:

This feature allows the user to initiate a mouse right-click by holding down a touch point for a specified period of time.

1. Click "Enable right click emulation" box (see Figure 14).
2. Use the slider bar to set the amount of time needed to produce a right-click event.
3. Click or touch "Apply" to test.

Event Area:

Since it may be difficult to touch and hold an exact point on any touch screen for a length or time, an "event area" is used to establish the size of the area in which a "hold" is acceptable. This event area should be set to an area that is as big as your finger tip.

1. Use the slider bar to increase or decrease the event area size (see Figure 14).
The size of the event area is displayed to the right of the slider bar.
2. a) Click or touch "Apply" to apply your selection, **OR**
b) Click or touch "OK" to apply and exit the Control Panel.

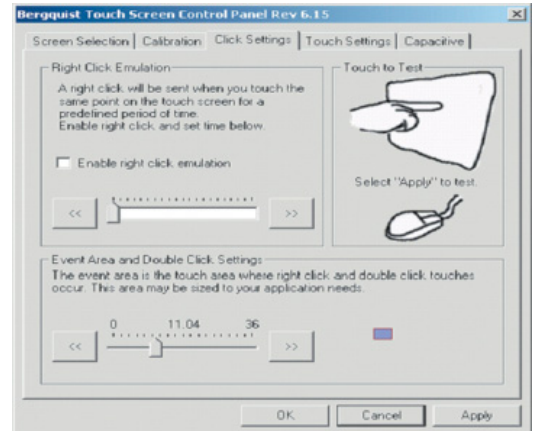


Figure 14

TOUCH SETTINGS:

Refer to Figure 15.

1. Click "Enable touch sound" to produce a "beep" when the touch screen is touched.

Touch Options:

Normal: Emulates the actions of a standard mouse, including single-click, double-click, drawing, dragging and right-click option (if right-click is enabled).

Touch Down: Allows a click event to take place at touch down. **Note:** You will not be able to draw or drag if this option is selected.

Touch Up: Touch sent only at touch up. **Note:** This option disables right-click and double-click functions.

2. Click or touch "Apply" to apply your selection(s), or click "OK" to apply your selections and exit the Control Panel.

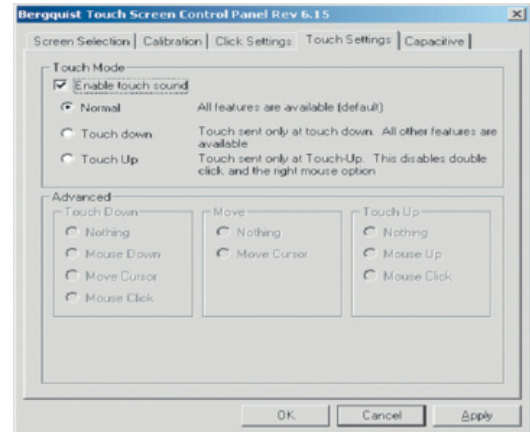


Figure 15

UNINSTALLING THE DRIVER:

1. Open "Add/Remove Programs" Control Panel (Start Menu > Settings > Control Panels).
2. Select "Bergquist 5-Wire-xxxxx" from the list.
3. a) Click "Remove," **OR**
 - b) Run the uninstall program file **tsun10.exe**. This file is located in the "Common" directory of the files you received from The Bergquist Company.
- 4) Read the message box, then accept.
- 5) Reboot the system when prompted to do so.

TROUBLESHOOTING:

Touch Screen Connections:

Check your touch screen overlay connection to make sure it is properly connected to your 5-Wire controller. Refer to the controller user guide for the proper pin-out for your controller:

Driver Not Installed:

A USB controller will operate in a default mode when first plugged in. However, it will not be calibrated. You must install the Bergquist 5-Wire driver to calibrate the touch screen as well as enable all other Bergquist 5-Wire features.

Troubleshooting Guide:

See Figure 16, below, for solutions to common troubleshooting issues.

ISSUE	CAUSE	SOLUTION
Touch screen does not respond.	1. Controller is not plugged in.	1. Check connection between the touch screen and the controller as well as between the controller and the computer.
	2. Touch screen not plugged in.	2. Plug the controller into a different port.
	3. Driver has been uninstalled.	3. Reinstall the 5-Wire driver.
	4. Hardware failure.	4. Contact Bergquist.
Touch screen moves, but it does not follow the stylus.	1. Controller is not calibrated.	1. Run the calibration through the Bergquist 5-Wire Control Panel.
	2. The driver is not installed.	2. Install the 5-Wire driver.
	3. Touch screen is not plugged in correctly.	3. Verify the touch screen pin-out is correct.
When calibrating, the message "Error in Calibration" appears.	1. The driver is not installed correctly.	1. Verify the controller pin-out matches the touch screen pin-out.
	2. The touch screen is not connected properly.	2. Un-install then re-install the driver software.

Figure 16



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