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Perceptive Pixel by Microsoft

82" Touch Device user guide

Perceptive Pixel by Microsoft

Notice

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The Perceptive Pixel by Microsoft 82" Touch Device is assembled in the USA.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if it is not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Microsoft may void authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.



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Introduction

The PPI by Microsoft 82" Touch Device

The Perceptive Pixel (PPI) by Microsoft 82" Touch Device is a touch-sensitive computer monitor capable of detecting and processing a virtually unlimited number of simultaneous on-screen touches. It has 1920 x 1080 resolution, adjustable brightness of up to 600 nits, a contrast ratio of 1000:1, and a display area of 72 x 41 inches. An advanced sensor distinguishes true touches from proximal motions of palms and arms, eliminating mis-triggering and false starts. With optical bonding, the PPI by Microsoft 82" Touch Device virtually eliminates parallax issues and exhibits superior brightness and contrast.



Figure 1. PPI by Microsoft 82" Touch Devices.

System requirements

Use the following guidance when configuring the computer that will power the PPI 82" Touch Device.

System Requirements

- Windows 8 for best experience
 - Windows 7 is supported but with reduced OS touch features
- Modern mid-range level processor or better
- 2GB system RAM or better
- Display resolution supporting 1920x1080 (55" & 82")
 - 120Hz refresh rate recommended for best performance (55" only)
- Digital video output to connect to DVI input (55", 82") or DisplayPort (with adapter)
 - Dedicated DirectX 11-capable video adapter recommended for best performance
- Dedicated USB 2.0 (not a shared port via USB hub)

See <http://support.microsoft.com/kb/2819660> for the most up-to-date system requirements information.

List of materials

The following items ship with the PPI 82" Touch Device:

- 604-0021: DVI Dial-link cable 10 ft. (1) - see figure 2
- 604-0046: USB cable 3 m. (Type-A, Type-B connectors) -see figure 2
- 604-0045: Power cable (IEC) 10 ft. - see figure 2. A localized power kit is available for regions outside North America. Contact PPI technical support for details.



Figure 2. Device cables, clockwise from lower left: USB, power, dual-link DVI

- 203-0003: Lifting frame (2) - see figure 3
- 203-0021: Lifting handles (4) - see figure 3
- Shipping boxes - not shown:
 - 700-009: Wooden shipping crate for device
 - Packing materials
- Perceptive Pixel by Microsoft 82" Touch Device user guide - not shown
- Welcome letter - not shown



Figure 3. Lifting frame and lifting handle (one each shown for illustration purposes)

Installation

This section refers to other documents containing procedures regarding moving the PPI 82" Touch Device.

Removing the device from the shipping crate

Due to the weight and size of this device, this procedure is documented separately. See the [Perceptive Pixel by Microsoft 82" Touch Device packing and unpacking guide](#).

Attaching the device to the wall mount

Due to the weight and size of this device, this procedure is documented separately. See the [Perceptive Pixel by Microsoft 82" Touch Device mounting guide](#).

Connecting the cables to the device

You will need the following parts for this procedure:

- USB cable as shipped
- DVI cable as shipped
- Power cable as shipped
- Ethernet cable (optional; customer supplied)

After mounting the device, connect the cables to the device's center rear underside as follows:

1. Insert the dual-link DVI cable into the matching connectors on the device and tighten the thumbscrews. (Although not required, you may want to use a #1 flat head screwdriver to tighten the thumbscrews.)
2. Insert the B-Type (square) end of the USB cable into the square USB connector on the device, located to the left of the DVI connectors, with the beveled side of the cable connector facing out.
3. Insert the CAT5 Ethernet cable into the Ethernet port to the left of the B-Type USB connector.
4. Insert the female end of the power cable into the power connector, located to the right of the DVI connectors. It is recommended that you use a surge protector for the AC power input.
5. Ignore the four A-Type USB connectors for now. They are used only to charge your optional PPI by Microsoft Active Stylus. See the [Perceptive Pixel by Microsoft Active Stylus quick guide](#).
6. Connect the male end of the power cable to the device.



Figure 4. Connection ports from left to right: USB stylus charging, network, USB connectivity, DVI (2), power, and antenna for communicating with stylus

Connecting the device and peripherals to the computer

You will need the following parts for this procedure:

- Computer meeting system requirements
- PPI 82" Touch Device with USB and DVI cables connected

Connect the cables to the computer as follows:

1. Connect the free end of the DVI cable into the dual-link DVI connection on the computer and tighten the thumbscrews.
2. Connect the free end of the USB cable from the device into any of the USB ports on the computer.

Powering on the system

Use the following procedures to apply power to the system.

1. If not already on, turn on your surge protector. Start the computer supplying video to the device.
2. Turn the power switch next to the power connector to the 1 position.



Figure 5. Power switch indicated

3. Press the **Power** button on the lower right (from front) side of the device. An amber light just above the power button should illuminate. There is also a pair of **Brightness** up/down buttons, above the power button, for increasing or decreasing the brightness. Finally there is a **Source Control** button at the top of the button group that toggles between the two DVI connections. See figure 6.
4. Press the **Source Control** button if you have two computers connected and wish to change the computer providing the imagery at that time.



Figure 6. Left: Buttons highlighted with device powered, but no signal as power LED is amber. Center: The device has power and signal, but no signal is coming from the selected source, which has an amber light. Right: The device has power and signal and is getting a signal from the selected source, as both the power and source 'B' LEDs are green

Installing drivers and software

The latest Perceptive Pixel Touch Driver can be downloaded from <http://support.microsoft.com/gp/perceptive-pixel>.

Using the PPI Touch Device

Windows 8 Touch conventions

Touching the device screen will tell you if the Perceptive Pixel Touch Service is running. This service allows certified applications to interact with touches detected on the screen. If the service does not appear to be running, verify installation of the PPI Touch Driver, then contact technical support at <http://support.microsoft.com/gp/perceptive-pixel> or by calling 1 (800) 642-7676.

The list describes Windows 8 Touch conventions for commonly used tasks:

Windows command	Corresponding touch action
To left-click a file	Tap it with one finger.
To right-click a file	Touch it with one finger and tap the screen with a second. Alternately, press and hold with one finger.
To double-click a file	Double-tap it with one finger.
To scroll through a file	Drag one finger up to scroll down or drag one finger down to scroll up.
To position a window (left mouse drag)	Touch one finger on the title bar and drag the window.
To resize a window	Touch one finger on the edge of the window and drag the edge.
To zoom in	Place two fingers on the screen and pull them apart. Alternately, tap the screen with two fingers.
To zoom out	Place two fingers on the screen and pull them together.
To minimize all but active window (shake)	Touch the window title bar and run your finger back and forth. Some windows, such as dialog boxes, cannot be minimized with shake.
To preview open windows (peek)	Touch the program icon on the Windows Task Bar. Drag one finger to scroll through different windows open in that program.
To right-click a task bar icon to see the context menu	Touch and hold the program icon on the Windows Task Bar.
To view Windows 8 charms and menus	Swipe inward from device edge.

For more information on Windows Touch, see <http://windows.microsoft.com/en-US/windows-8/touch-swipe-tap-beyond>.

Troubleshooting

This section contains troubleshooting procedures to solve the following issues:

- The device screen is blank.
- All or part of the device screen is unresponsive to touch.
- The computer is not working.
- Gaining remote access to the device for diagnostic purposes.

For troubleshooting assistance, or to resolve issues not covered in this guide, contact PPI support online at <http://support.microsoft.com/gp/perceptive-pixel> or by calling 1 (800) 642-7676.

Symptom

The device screen is blank.

Suggested actions

1. Check device power and connections. Note that in addition to a power connection, the device requires both a USB and a DVI connection to operate with PPI software. Also note that the device power button and brightness arrow buttons will remember their previous states after the device powers off.
2. If the device screen is still blank move the mouse and touch the screen.
3. If the device screen is still blank check the computer power.

Symptom

The device screen shows image, but the entire device is unresponsive to touch.

Suggested actions

1. Check device power and connections. An amber power LED indicates power but little or no signal and a green power LED indicates both power and sufficient signal. Note that in addition to a power connection, the device requires both a USB and a DVI connection to operate with PPI software. Also note that the device power button and brightness arrow buttons will remember their previous states after the monitor powers off.
2. If the device is still unresponsive, go to the Start screen to search for and open the **Touch Control Panel**.
3. In the **Sensors** tab make sure the system has detected and placed the following entry in the **Sensor Devices** field: **PPI by Microsoft 82" Touch Device**.

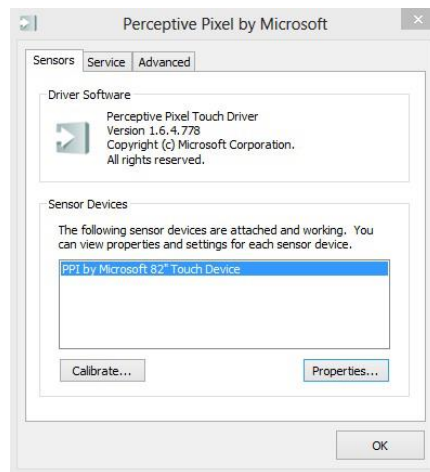


Figure 7. PPI 82" Touch Device detected

4. If the **Sensors** tab lists your PPI Touch Device, select the **PPI by Microsoft 82" Touch Device** entry and click the **Properties...** button. If not listed, contact technical support.
5. In the **Sensor Properties** dialog, make sure the following values are present in the Input mapping section:
 - Map touches to: 1: **PPI 82" LCD**.
 - Enable as a Windows Touch device: **selected**
6. Click **OK**.

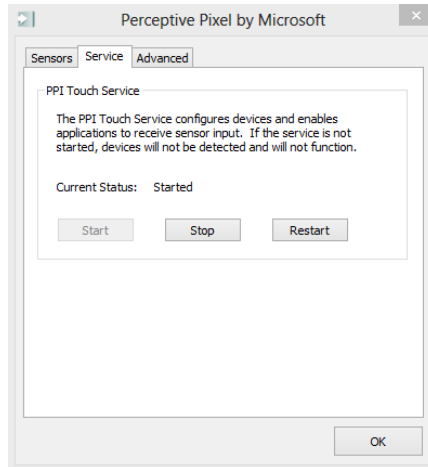


Figure 8. Service tab showing that the PPI Touch Service is running

7. If the device is still unresponsive, select the **Service** tab.
8. If the PPI Touch Service is not running, click **Start** and check if the device is responsive once the service has started. If the device is now responsive, click **OK** to close the **Multitouch Control Panel**.

Symptom

The device screen shows image, but a portion of the device screen is unresponsive to touch.

Suggested actions

1. If a portion of the device screen is unresponsive, go to the Start screen to search for the **Touch Control Panel**.
2. The **Sensors** tab will show whether the system has detected that the device is touch-ready as opposed to merely detecting the device is present.

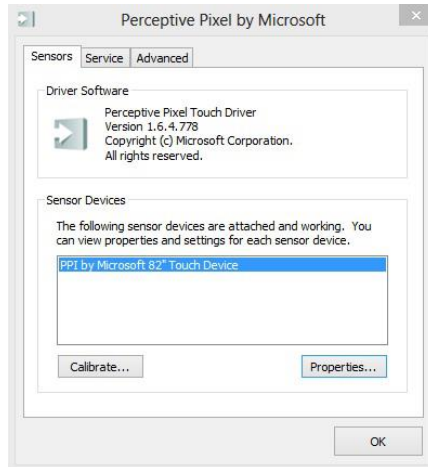


Figure 9. PPI 82" Touch Device detected

3. If the **Sensors** tab lists your PPI Touch Device, select it and click the **Properties...** button. If your PPI Touch Device is not listed, or you have more than one PPI Touch Device connected to your computer, contact technical support.
4. In the **Sensor Properties** dialog, make sure the following values are present in the **Input mapping** section:
 Map touches to: **1: PPI 82" LCD**
 Enable as a Windows Touch device: **selected**
5. If a portion of the device screen is still unresponsive, click **Calibrate** and follow the directions on screen. Calibration should be done separately for both pen and touch using a PPI by Microsoft Active Stylus and a finger. For best results, touch the center of each box until each box becomes bright green. You may need to shift your fingertip or stylus slightly to get the crosshair to align with the box. Also, you must wait until the crosshair changes size for a second and then changes color, preferably bright green. If a box turns red, brown, or a dull green you should move on to other boxes and then come back to it to make it bright green. You will have calibrated the device properly when all of the boxes are bright green and the feedback text reads 9 points calibrated, with excellent accuracy.

6. If there is still a problem, select the **Advanced** tab.
7. Click the **Sensor View...** button. This launches a diagnostic tool that gives you information about the touches on the screen. If you notice anything unusual such as a grid square that doesn't illuminate when touched, contact support. Your support representative may ask you to describe the information displayed next to your finger touches. Press **Esc** to exit.

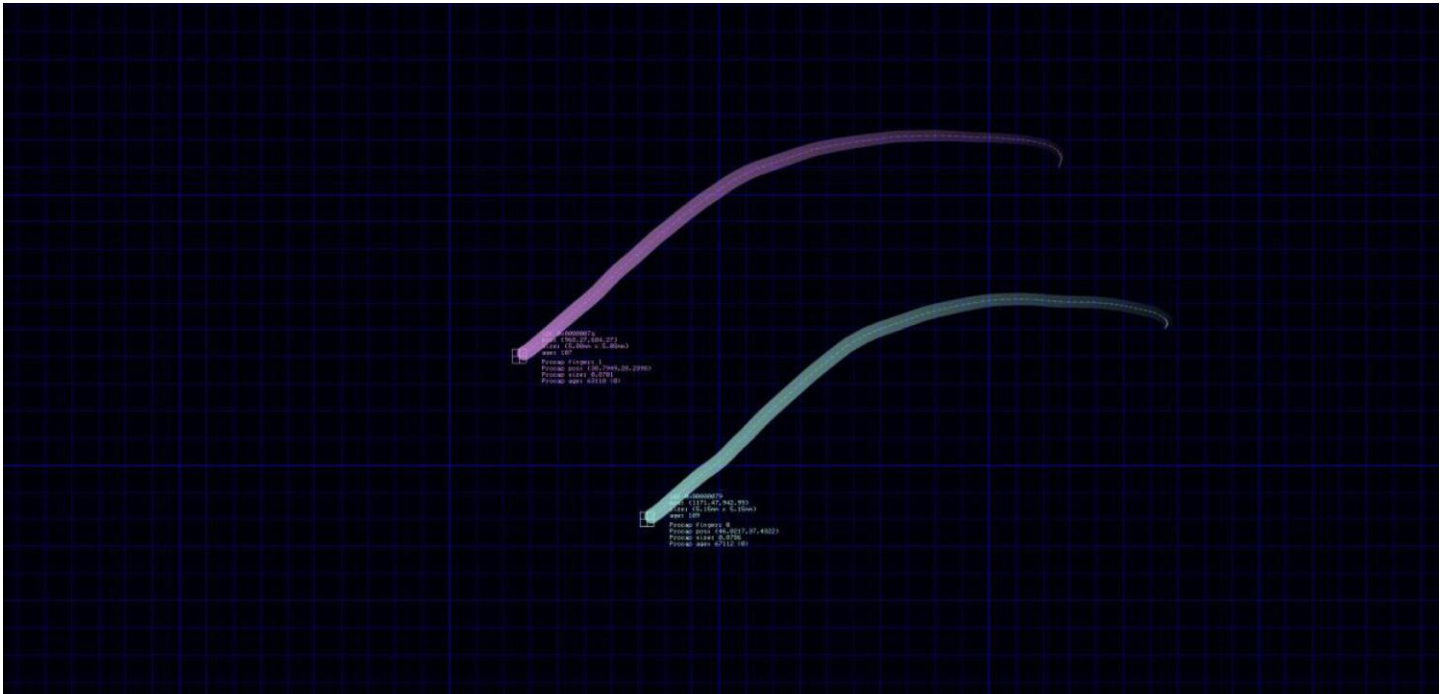


Figure 10. Sensor View tracking a pair of simultaneous finger touches across the device screen

Symptom

The computer is not working.

Suggested actions

For computer issues unrelated to PPI software, consult the original vendor documentation.

Gaining remote access to the device

Your support representative may ask you for information about your PPI Touch Device when assisting you with troubleshooting. For instance, they may ask you about the internal temperature of the device. This information and more is available from a remote connection. From a web browser, you can remotely access status and configuration menus on the device.

Use the following steps to gain remote access:

1. If you have not already done so, plug the Ethernet cable into the Ethernet port on the bottom center of the device and plug the other end into the port on the computer.
2. Open web browser on the computer.
3. Using the last three digits from your device's serial number, type in the following web address: <http://pixel-XXX>, where the XXX represents the last three digits. For example, for a device with 413 as the last three digits, the address for the device would be <http://pixel-413>. Be sure to leave the "www" out of the address.

The first page you see will be the Control Panel page (see figure 11).

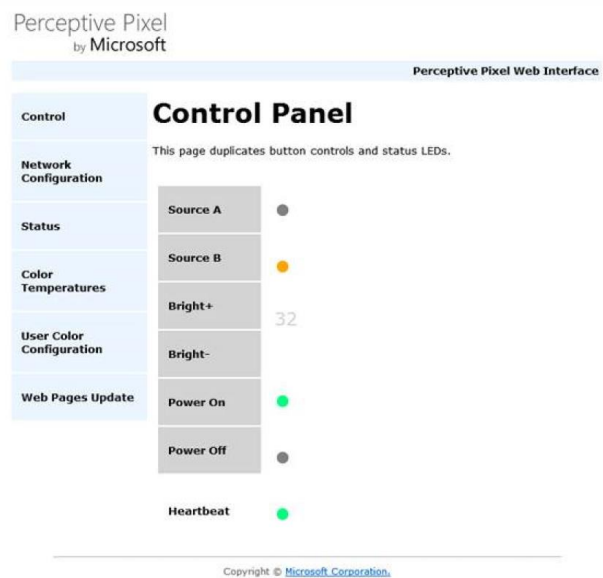


Figure 11. Control Panel page on device remote connection. Use this page to change the source, adjust the brightness from 1 to 20, power the device on or off, and to see the heartbeat indicator blink.

The other pages that you can select by clicking the menu items on the left side are as follows:

- Network Configuration - figure 12
- Status - figure 13

The screenshot shows the 'Network Configuration' page of the MT-LCD82 Web Interface. The page has a sidebar with four menu items: 'Control', 'Network Configuration' (which is highlighted), 'Status', and 'Web Pages Update'. The main content area is titled 'Network Configuration' and includes a sub-header 'This page is used to review the MT-LCD82's network settings.' Below this is a form with the following fields: 'MAC Address' (00:50:C2:E9:30:15), 'Host Name' (PIXEL-413), 'Enable DHCP' (checked), 'IP Address' (192.168.213.109), 'Gateway' (192.168.213.1), 'Subnet Mask' (255.255.255.0), 'Primary DNS' (192.168.213.5), and 'Secondary DNS' (0.0.0.0).

Figure 12. Network Configuration page. Use this page to get network settings or disable DHCP (Dynamic Host Configuration Protocol), which is enabled by default.

The screenshot shows the 'Status' page of the MT-LCD82 Web Interface. The page has a sidebar with four menu items: 'Control', 'Network Configuration', 'Status' (which is highlighted), and 'Web Pages Update'. The main content area is titled 'Status' and includes a sub-header 'This page displays dynamic internal values, serial number and version information.' Below this is a table of system information:

Temperature C°:	36.4	Serial Number:	811440413
Fan voltage:	6.07	Firmware Version:	01.03
External voltage:	4.92	Bootloader Version:	01.02
Events:	00	Web Pages Version:	Sep 22 2011
		Build Date:	Sep 22 2011 09:53:30

Figure 13. Status page. This page is read-only but may be useful when speaking with a support representative during troubleshooting consultation.

Appendix

Specifications

Feature	Value
Display resolution	1920 x 1080
Brightness	600 nits (typical)
Active display area	72.1 x 40.9 inches (1831 x 1040 mm)
Contrast ratio	1,000:1 (typical)
Touch input	Fingers, active stylus
Touch points	Unlimited
Touch precision	Sub-pixel
Touch response time	<1 ms (typical)
Surface treatment	Chemically-strengthened, anti-smudge/glare, cleanable with provided device cleaner
Dimensions (in)	77.2 x 46. x 5.9 (WxHxD)
Dimensions (mm)	1960 x 1169 x 150 (WxHxD)
Weight (lbs)	280
Power supply	110/220 VAC Universal, 50/60 Hz

Safety and handling information

Optimal operating time

To optimize the lifetime of the PPI 82" Touch Device, it is recommended that you not leave the device active for more than 18 hours per day. Operating the device in excess of 18 hours per day can impact image quality.

Disconnecting the PPI Touch Device

Disconnect the device by first turning the power switch to the 0 position. Then grasp the female connector and firmly pull the connector from the device. Never disconnect the power cable from the device by pulling the cable.

Device repairs

Do not open the device enclosure as there are high-voltage components inside. For repair, contact PPI support at <http://support.microsoft.com/gp/perceptive-pixel> or by calling 1 (800) 642-7676.

Maintenance

Cleaning the PPI Touch Device

Clean the surface and refresh the smooth feel of the device screen with the PPI device cleaner (shipped) and a microfiber cloth. Spray a small amount of the cleaner on the cloth and gently wipe the screen. Do not spray cleaner directly onto the device screen, as any fluid dripping into the enclosure may damage the electronics. Note: Do NOT use abrasive cleaners as they will scratch the surface.

Cleaning the exterior

Should it be necessary, clean the external enclosure using the PPI device cleaner the same as you would the touch screen. Take care to prevent the device cleaner from entering the enclosure, as any fluid dripping into the enclosure may damage the electronics.

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