PASCO AirLink®

PS-3200

Top view	Bluetooth status LED	End view
Device ID		
PASCO airlink®		ON button	Micro USB port
Battery status LED		

Power: Rechargeable Battery
Connection:

Bluetooth SMART

OR
USB Cable

Micro USB Cable

Hardware

| Included Equipment	Quantity	Included Equipment	Quantity
PASCO AirLink® (PS-3200)	1	Micro USB Cable (1 meter)	1

Introduction

The PASCO AirLink is a combination wireless *and* USB device that connects to a computer or tablet device through Bluetooth SMART, and can also connect to a computer with a USB cable (included). The AirLink is powered with a rechargeable battery and it has a single port that accepts any PASPORT sensor or adapter. Since each AirLink has a unique device identification code, more than one AirLink can be connected to a computer or tablet device at the same time. The PASCO AirLink can be used to do any experiment that involves a PASCO sensor.

If the AirLink is plugged into a USB charger, it can still be used to collect data wirelessly using Bluetooth SMART.

Initial Step: Charge the Battery

- **Connect the Cable**: Use the Micro USB Cable to connect the Micro USB port on the PASCO AirLink to a USB **port** or USB **charger** (such as the PS-3501 USB Charging Station). Charging begins automatically. The battery status LED will shine yellow as the battery is charging, and will shine green when the battery is charged. The battery is partially charged at the factory. Initial charging time may be three hours or longer depending on the power source and the condition of
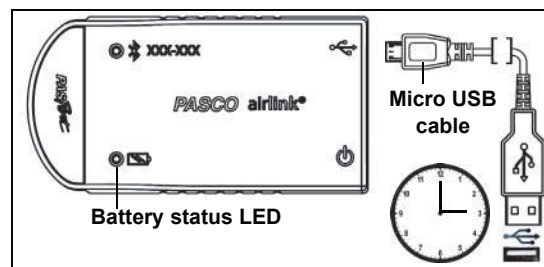
Micro USB cable

Battery status LED

the battery. The charger circuit inside the AirLink turns itself off when the unit is fully charged.

ON/OFF Information

The AirLink turns ON when the Micro USB Cable is connected. *To turn the AirLink ON* when the cable is not connected, press and momentarily hold the ON button on the end of the AirLink. The AirLink puts itself to sleep after several minutes of inactivity if not connected. *To turn the AirLink off*, press and hold the ON button for a moment until the status LEDs stop blinking.

Data Collection Software

PASCO Capstone   **SPARKvue**

- Mac OS X   • Mac OS X
- Windows   • Windows
                        • iOS
                        • Android
                        • Chromebook

See the PASCO web site at www.pasco.com/software for help in selecting the right PASCO software and to check the latest versions.

NOTE: PASCO Data Collection software automatically detects a PASPORT sensor when you connect it to the AirLink.

Software Help

See the SPARKvue Help or PASCO Capstone Help for information about collecting, displaying, and analyzing data.

- In SPARKvue, select the HELP button (**?**) in any screen including the Home Screen.

- In **PASCO Capstone**, select PASCO Capstone Help from the Help menu, or press F1.

Bluetooth SMART Compatibility

Platform	Bluetooth SMART Compatibility
iOS	iPad 3 and later iPhone 4S and later iPod touch 5 and later
SPARK Element	All models
Android	Android 4.3 and later
Chromebook	Chrome OS (requires PS-3500 Adapter*)
Mac OS X	Models introduced July 2011 or later*
Windows	Windows 7 and later (requires PS-3500 Adapter*)

See Appendix A for more information about the PS-3500 Adapter and Mac OS X models.

LED Information

The Bluetooth and Battery Status LEDs operate as follows.

For a wireless Bluetooth connection:

Bluetooth LED	Status
Red blink	Ready to pair
Green blink	Connected

Battery LED	Status
Red blink	Low power

For a micro USB cable connection to a USB *port*:

Bluetooth LED	Status
OFF	--
OFF	--

Battery LED	Status
Yellow ON	Charging
Green ON	Charged

For a micro USB cable connection to a USB *charger*:

Bluetooth LED	Status
Red blink	Ready to pair
Green blink	Connected

Battery LED	Status
Yellow ON	Charging
Green ON	Charged

Connecting a PASPORT Sensor
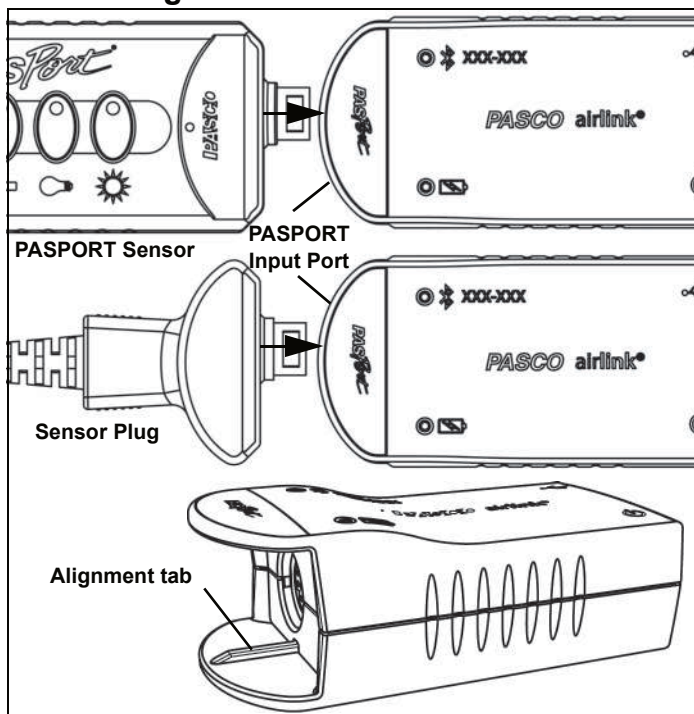
Plug a PASPORT sensor or a PASPORT sensor plug into the PASPORT input port on the front of the PASCO AirLink. Match the groove on one side of the sensor or sensor plug with the alignment tab on the bottom "lip" of the AirLink.

Connecting the PASCO AirLink to a Tablet or a Computer via Bluetooth

(NOTE: The following procedure also works while the AirLink is connected to a USB charger through the micro USB cable.)

Make sure that the PASCO AirLink is ON.

• For SPARKvue, select the Bluetooth icon. In the **Wireless Devices** list. In the list, the sensors are sorted in order of proximity. Select the correct address that matches the XXX-XXX Device ID number found on the AirLink. Select **Done**. Select a measurement from the list. A graph of the selected measurement versus time opens. Select the Start button to begin collecting data.

• For PASCO Capstone, select **Hardware Setup** in the Tools palette. In Hardware Setup, the sensors are sorted in order of proximity. Select the desired device that matches the XXX-XXX Device ID number on the AirLink. Close the Hardware Setup window. Select a display in the main window or from the "Display" palette. In the display, use the **<Select Measurement>** menu to pick a measurement to be shown. Select **Record** to begin recording data.

Connecting the PASCO AirLink to a Computer with the Micro USB Cable

Connect the micro end of the included Micro USB Cable into the micro USB port on the end of the AirLink. Connect the other end of the Micro USB Cable to a USB port on the computer, or into a powered USB hub connected to the computer.

• In the SPARKvue Home Screen, select a measurement from the list under the sensor's name. A graph of the measurement versus time opens. Select the Start button.

• In PASCO Capstone, select a display in the main window or from the "Displays" palette. In the display, use the **<Select Measurement>** menus to pick the measurement to be shown. Select **Record** to begin collecting data.

Related Products

The PS-3200 PASCO AirLink is designed to be used with any PASPORT sensor. For information, see the PASCO Web site at

www.pasco.com/sensors/

Note that the AirLink can also be used with a PASCO ScienceWorkshop sensor. These sensors have different

connectors depending on whether they are digital or analog.

ScienceWorkshop Digital Sensor Plug

ScienceWorkshop Analog Sensor Plug

ScienceWorkshop Analog Sensor
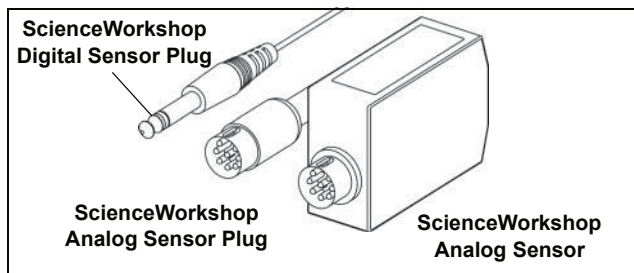
Use the PS-2158 PASPORT Analog Adapter to connect a ScienceWorkshop analog sensor or sensor plug to the AirLink.

Use the PS-2159 PASPORT Digital Adapter to connect a ScienceWorkshop digital sensor to the AirLink.

PS-2158 Analog Adapter

PS-2159 Digital Adapter
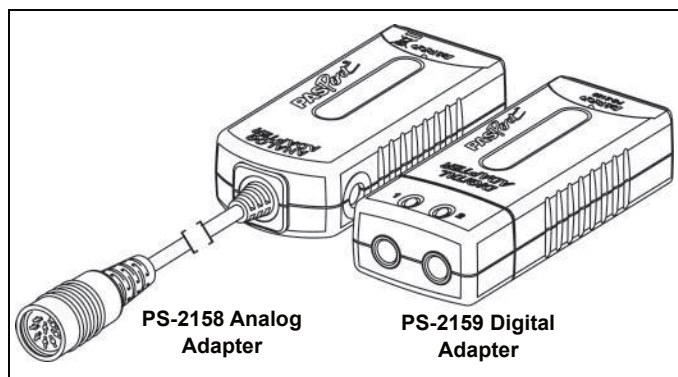
About the Battery

The PASCO AirLink's battery is partially charged at the factory. If the battery status LED blinks red, use the micro USB cable to connect the AirLink to a USB port or a USB charger.

Battery Usage

Battery life is very important to making the sensor simple and always ready to use, so all of the PASCO wireless products are designed for long battery life. For example, the AirLink turns itself off after a few minutes of inactivity to conserve battery life..

The battery life of the AirLink varies depending on the power demand of the connected sensor and the sampling rate. The battery life between charges ranges between 11 hours for high power sensors to more than 70 hours for low power sensors, with continuous sampling at a rate of one sample per second.

In typical classroom/lab use, this would translate to a battery life between charges ranging from one to four weeks or more, because full-day continuous sampling at this sampling rate would be unusual. Even in the most extreme

case with a high power sensor, AirLink would support of full day of use before needing to recharge.

Maximizing Battery Life

Two factors that affect battery life are the storage temperature and the number of charge cycles. Therefore, avoid storing the AirLink in very cold or very hot environments. Because of the long battery usage time for the AirLink, the number of charge cycles is reduced, which lengthens battery life.

Troubleshooting the PASCO AirLink

* If the PASCO AirLink loses Bluetooth connection and will not reconnect, try cycling the ON button. Press and briefly **hold** the button until the status LEDs blink in sequence, and then release the button. Start the AirLink in the usual way.

* If the AirLink stops communicating with the computer software or tablet application, try restarting the software or application. If the problem remains, press and **hold** the ON button for 10 seconds and then release. Start the AirLink in the usual way.

* Turn Bluetooth off and then turn it back on. Restart the AirLink.

Technical Support

For assistance with any PASCO product, contact PASCO at:

Address:	Kotzebue 8, Tallinn, Estonia
Phone:	+372 5551 5542
Web:	www.oppelabor.ee
Email:	ask@ste.education

The Reference Guide will be updated periodically. For the latest revision of this Reference Guide, visit the PASCO Web site at

www.pasco.com/manuals/

Enter the product number, PS-3200, in the text window.

Replacement Parts

For information about possible replacement parts, contact Technical Support:

USB Cable, Micro-to-USB A

Limited Warranty
For a description of the product warranty, see the PASCO catalog or visit the PASCO Web site at www.pasco.com/legal/.

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FCC Statement
This Class A digital 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.

CE Statement
This device has been tested and found to comply with the essential requirements and other relevant provisions of the applicable EU Directives.

Product End of Life Disposal Instructions:
This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle/disposal service, or the place where you purchased the product.

The European Union WEEE (Waste Electronic and Electrical Equipment) symbol (to the right) and on the product or its packaging indicates that this product **must not** be disposed of in a standard waste container.

Battery Disposal Instructions:
Batteries contain chemicals that, if released, may affect the environment and human health. Batteries should be collected separately for recycling, and recycled at a local hazardous material disposal location adhering to your country and local government regulations. To find out where you can drop off your waste battery for recycling, please contact your local waste disposal service, or the product representative.

The Lithium Polymer (Li-Poly) rechargeable battery used in this product is marked with the International symbols to indicate the need for the separate collection and recycling of batteries.
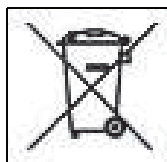
Appendix: Bluetooth® SMART Compatibility

Check the PASCO Web page at

www.pasco.com/compatibility

for the latest information on Bluetooth SMART compatibility.

Platform	Bluetooth SMART Compatibility
iOS	iPad 3 and later iPhone 4S and later iPod touch 5 and later
SPARK Element	All models
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Chromebook	Chrome OS (requires PS-3500 Adapter*)
Mac OS X[1]	Models introduced July 2011 or later
Windows	Windows 7 and later (requires PS-3500 Adapter*)

*The PS-3500 USB Bluetooth 4.0 Adapter, when connected to a USB port, allows up to three Bluetooth SMART devices, such as this PASCO wireless device, to connect to Windows computers, Chromebooks, and older Macintosh computers.

PS-3500 USB Bluetooth 4.0 Adapter

Note: The PS-3500 USB Bluetooth 4,0 Adapter is the only adapter we can currently recommend. Many other Bluetooth 4.0 adapters are available but this adapter has a specific design that enables in-app pairing of Bluetooth SMART sensors.

[1]To check the Mac computer's Bluetooth compatibility, do the following:

• Click the (Apple) Menu.

• Select *About This Mac*

• Click the *More Info*... button.

• Click the *System Report*... button.

• Select *Bluetooth* from the sidebar on the left, underneath *Hardware*.

• Scan down the list of information until you find "LMP Version".

• If your Mac is equipped with Bluetooth SMART, the LMP Version will show **0x6**. (Anything lower than **0x6** means an older version of Bluetooth. Your device will need the PS-3500 USB Bluetooth 4.0 Adapter.)

[1]The Mac Mini and MacBook Air were updated with Bluetooth SMART support in 2011. The MacBook Pro was updated in 2012. The Mac Pro that debuted in December 2013 has Bluetooth SMART support.

Exception: Before you upgrade to El Capitan (Mac OS X 10.11.x), if you have a Macintosh with LMP version "0x4" that requires the PS-3500 USB Bluetooth 4.0 Adapter, please contact PASCO Technical Support for further instructions.

What is Bluetooth SMART®?

Bluetooth SMART (also known as Bluetooth Low Energy or Version 4.0 of the Bluetooth specification) is the latest protocol of the proprietary open wireless technology standard created by telecoms vendor Ericsson in 1994. It is the power- and application-friendly version of Bluetooth that was built for the Internet of Things (IoT).

Have questions?
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