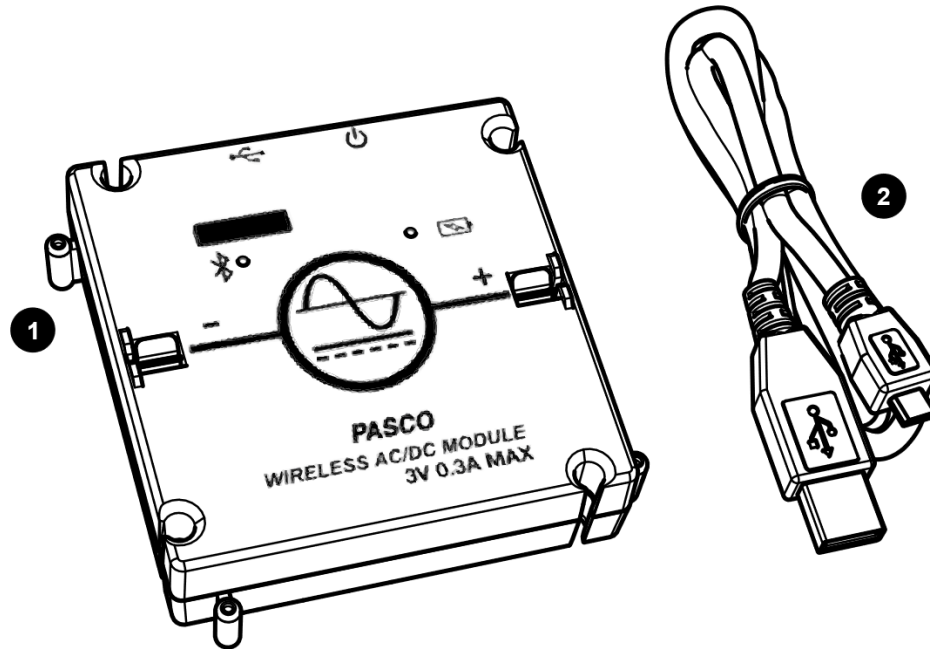


Wireless AC/DC Module

EM-3533



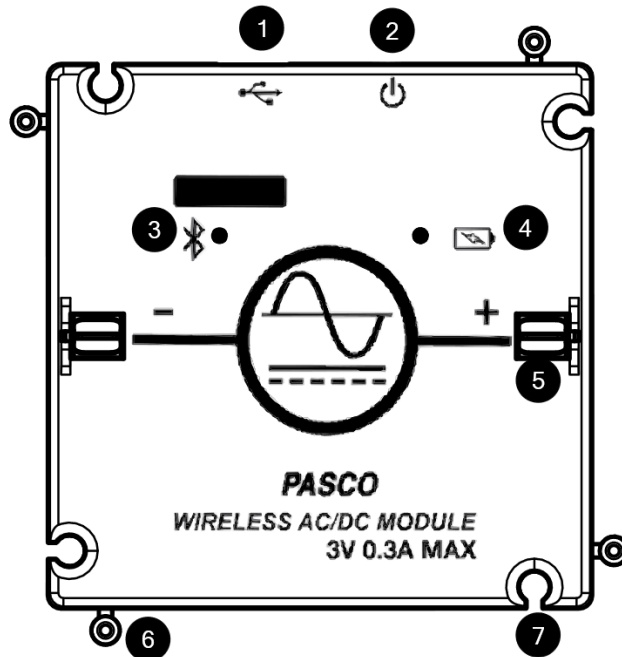
Included Equipment

- 1 **Wireless AC/DC Module**
- 2 **Micro USB cable**
For connecting the accessory to a USB charger or port.

Required Equipment

The following table lists the equipment required to perform experiments with the device. Only one of the options provided for each item is required.

Item	Options
Modular Circuits Set	EM-3535 Basic Kit EM-3536 Essential Physics Kit EM-3556 Advanced Expansion Kit EM-3540 Expansion Kit
Software	PASCO Capstone SPARKvue



Components

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Micro USB port
For connecting the included USB cable to a USB charger or USB port.</p> <p>2 Power button
Press and hold to turn the power on or off.</p> <p>3 Bluetooth status LED
Red blink Ready to be paired with software.
Green blink Paired with software.
Yellow blink Remotely logging data.</p> <p>4 Battery status LED
Red blink Battery needs to be recharged soon.
Green solid Battery is fully charged.
Yellow solid Battery is charging.</p> | <p>5 Clip holder
For inserting a jumper clip to electrically connect modules.</p> <p>6 Peg
Insert into a notch of another module to physically connect modules.</p> <p>7 Notch
Insert over a peg of another module to physically connect modules.</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Getting Started

Before using the device with students for the first time, perform the following tasks:

1. Charge the battery.
2. Update your PASCO data collection software.
3. Update the firmware.

To charge the battery

1. Connect the USB cable to the USB port on the device. Connect the other end of the cable to a USB charger or port.
2. Allow the battery to charge for at least three hours. The battery status LED will turn green when fully charged.

Charging automatically stops when the battery is fully charged. The device can remain connected to a power source when fully charged without damaging the battery.

To update PASCO data collection software


1. Open the PASCO data collection software.
2. The software will display a message if an update is available. Follow the instructions on the screen. If you do not receive a message, the software is up to date.

You can also check for an update by doing the following:



Go to **Help** and select **Check for Updates**.



Go to the menu  and select **Check for Updates**.

To update the firmware

The device contains firmware that controls how it functions. It is important to make sure that your device has the latest version of the firmware installed.

1. Connect the device to your software. It is recommended to use a USB connection since this will result in a faster update.
2. The software will prompt you if a firmware update is available. Follow the instructions on the screen if prompted. If you do not receive a prompt, the firmware is up to date.

Connecting to Software

The device can be connected to software using USB or Bluetooth.

To connect using USB

1. Connect the device to your computer or mobile device using the USB cable.
2. Open your PASCO software. The device automatically connects with the software.

To connect using Bluetooth



1. Press and hold the power button until the battery status LED turns on.
2. Open Capstone and click Hardware Setup.
3. Select the wireless device that matches your device ID.




1. Press and hold the power button until the battery status LED turns on.
2. Open SPARKvue and select Sensor Data.
3. Under Connected Devices, select the wireless device that matches your device ID.

Outputs


The Wireless AC/DC Module output voltage is controlled from the signal generator panel in PASCO Capstone and SPARKvue. The signal generator panel provides controls for the waveform, frequency, and amplitude of the output voltage. It is also possible to control the output amplitude and frequency by writing a program with Blockly in PASCO Capstone and SPARKvue. The output voltage data can be viewed in a display such as a scope or graph.

To access the signal generator panel




Under the **Tools** palette, click **Signal Generator** .



1. Build a new page.
2. Select a layout that contains a template that covers at least 1/3 of the workbook page.
3. Select the signal generator icon .

To access the Blockly code blocks



1. Under the Tools palette, click Code .
2. In the Code palette, click Hardware.



1. In the control panel, click Code.
2. In the Code screen, click Hardware.

Experimental Setup

The Wireless AC/DC Module is designed to be used with all PASCO Modular Circuits kits. Experiments can be performed with the module by connecting it with other Modular Circuits modules.

To connect to a module

Connecting the Wireless AC/DC Module to another other modules requires a physical and electrical connection (Figure 1):

1. Physically connect the module by slipping the peg and notch on one edge of the module onto the notch and peg of another module.
2. Electrically connect the module by inserting a jumper clip into the clip holders.

Be sure to note the polarity markings on the module when making connections.

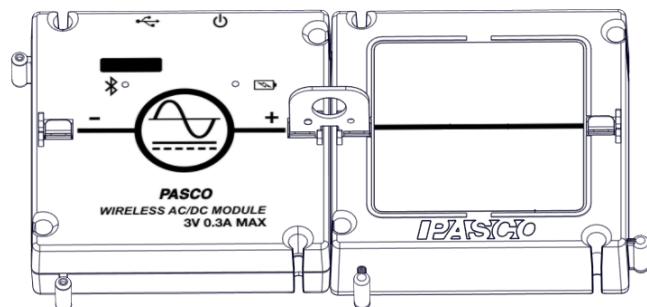


Figure 1. Wireless AC/DC Module connected to a wire module with a jumper clip inserted.

Specifications

Output	$\pm 3V @ 300 \text{ mA}$
Output Resolution	1 mV
Output Types	DC, Sine, Triangle, Square
Output Frequency	0.01 Hz – 10 kHz
Output Frequency Resolution	10 mHz
Max Sample Rate	100 kHz
Battery	Rechargeable Lithium-Polymer 1000 mA
Protection	Overcurrent, Overtemperature, Back EMF
Connectivity	USB, Bluetooth Low Energy
Max wireless range	30 m (unobstructed)

Technical Support

For assistance with PASCO products, contact PASCO Technical Support at:

Address: PASCO scientific
10101 Foothills Blvd.
Roseville, CA 95747-7100

Phone: 916-462-8384

Web: www.pasco.com

Email: support@pasco.com

FCC Statement

This 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.

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.



Warranty, Copyright, and Trademarks

Limited Warranty For a description of the product warranty, see the PASCO catalog.

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