USB-Bug™
USER MANUAL

TECHNICAL SPECIFICATIONS	
CONNECTIONS	
USB Plug	(1) USB-A male plug
USB Port	(2) USB-A ports (1 with data and power pass-through; the other only power pass-through)
PARAMETERS	
Operating Voltage	3.2VDC - 30VDC
Over-voltage Indicator	greater than or equal to 5.6VDC
Under-voltage Ind.	less than or equal to 4.4VDC
Current	0 - 3A
Over-current indicator	greater than or equal to 3A
Working Current	less than 20mA
Measurement Accuracy	1%
Measurement Rate	2 readings/second
Size	
Main Body	69mm x 26mm x 120mm
USB Cable Length	~120mm
Working Temperature	-10 degrees to 65 degrees Celcius

1. INTRODUCTION

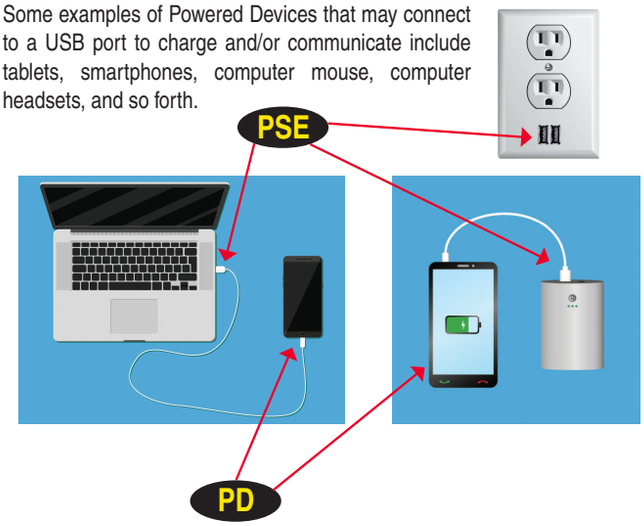
1.1 General Use

The USB-Bug is designed to test the power, voltage, and current from the USB-A port of Power Sourcing Equipment (PSE) (i.e., where the power is coming from). It does this by connecting the USB-Bug inline between the PSE and the Powered Device (PD) (i.e., the device you are trying to charge). The USB-Bug can also act as a splitter, allowing two separate devices/PDs to charge from one PSE port.

The USB-Bug has two out-ports; one port allows data to pass through, the other port does not allow data to pass through. Both ports utilize an Intelligent Charging function that allows the PD to charge at the maximum safest current for that device.

Some examples of Power Sourcing Equipment include USB wall jacks (below, top right), USB ports on a computer or laptop (below, bottom left), or a portable charger (below, bottom right).

Some examples of Powered Devices that may connect to a USB port to charge and/or communicate include tablets, smartphones, computer mouse, computer headsets, and so forth.



Thank you for purchasing the *Triplett USB-Bug™*. Please read the manual carefully before using the product.

To assure safe use of this product, please read the section on Safety carefully, and observe any Cautions or Warnings posted there and throughout this manual. Be sure to keep this manual for future reference.

SAFETY INFORMATION

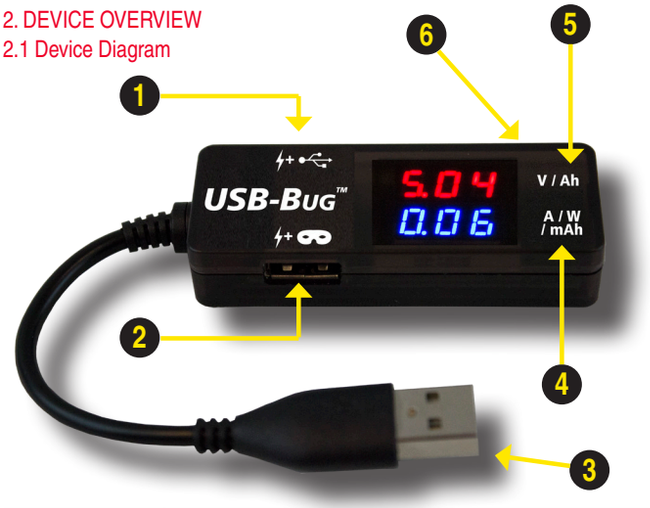
- Comply with all local electrical safety and electromagnetic compatibility rules and regulations when using this device.
- Do not expose the product to rain, liquids, excessive moisture, or direct sunlight as product damage may occur.
- Do not expose or use the product in dusty or high-particulate environments.
- Avoid dropping the product or subjecting it to physical shock or high vibrations.
- Do not use the product in an environment containing flammable gases.
- Do not attempt to disassemble the product. There are no user serviceable parts inside and product damage can occur. Contact Triplett customer support if the unit does not function properly.
- Do not use the product in environments with strong electromagnetic fields.
- Do not handle or operate the product with wet hands.
- Do not use strong detergents or solvents to clean the product. Wipe off dirt with a soft dry cloth, or a soft cloth slightly moistened with water or mild cleaner.

1.2 Additional Features

The USB-Bug is also able to test Capacity, and has warnings built in to indicate when it detects an over-voltage problem, under-voltage problem, or over-current problem.

2. DEVICE OVERVIEW

2.1 Device Diagram



1	⚡+ ⟷	Unmasked Port - Provides Power and Data pass-through
2	⚡+ 👓	Masked Port - Provides Power but will not allow Data to pass through.
3		USB-A plug - This plugs into the USB-A port of the PSE.
4	A / W / mAh	Lower Display Readout - This will show Amps, Watts, or Milliamp hours, depending on which Mode you have chosen to display.
5	V / Ah	Upper Display Readout - This will show Voltage or Amp Hours, depending on which Mode you have chosen to display.
6		Selector Button (on top) - Press this button to change what information displays. *(See details on reverse.)*

P/N UM-USB-Bug

8/2018

2.2 Display Modes

When the Tester is first connected to a PSE, it will automatically display Mode 1. Press the button on the top of the Tester to cycle through to the Display Mode you want to view. For those Modes that cycle through readings, the display will rotate every 4 seconds.

The digital display is two separate colors—the top row displays in red, while the bottom row displays in blue. The only reason for this is ease of distinguishing between the two rows; the colors themselves are not indicative of anything during testing.

MODE 1 (Default) Voltage, Current	**Voltage** **Current**
MODE 2: C Capacity	**Amp hours** **Milliamp hours**
MODE 3: -P- Power	**-P-** **Watts (note decimal)**
MODE 4: CVA Voltage, Current, then Capacity (cycles readings)	**Voltage / "C" Ah** **Current / Capacity mAh**
MODE 5: PVA Voltage, Current, then Power (cycles readings)	**Voltage / "-P-"** **Current / Watts**
MODE 6: CP Capacity then Power (cycles readings)	**"C" Ah / "-P-"** **mAh / Watts**
MODE 7: CPVA Voltage, Current, then Capacity, then Power (cycles readings)	**Voltage / "C" Ah / "-P-"** **Current / mAh / Watts**

ABOUT TRIPLETT

Triplett Test Equipment and Tools has been desiging specialized test equipment for over 100 years.

Triplett was acquired by Jewell Instruments in 2007. Jewell Instruments is a world leader in the manufacturing and distribution of advanced sensors, controls, panel meters, and avionics. Jewell provides custom solutions for the aerospace, medical, industrial, marine, telecommunications, and railroad industries.

Jewell's experienced engineering team works with customers and end-users to develop top-of-the-line products that meet or exceed all customer requirements.

The company has two manufacturing facilities—one in Manchester, New Hampshire, and the other in Barbados, West Indies. Both facilities maintain the most stringent manufacturing requirements. The Barbados facility also provides the cost-competitive advantage of offshore manufacturing

Jewell is committed to continuing the legacy started by Ray L. Triplett, producing only the highest quality, most technologically advanced, rugged, and reliable test equipment products in the marketplace.

3. HOW TO USE YOUR USB-BUG

3.1 Types of Measurements & Warning Indicators

The USB-Bug is designed to display the current, voltage, power, or capacity being output from the PSE's USB-A port.

3.1.1 Current

The USB-Bug will test current from 0 to 3 Amps. If the current is over 3 Amps, the USB-Bug will flash the decimal point quickly.

The USB-Bug uses <20 mA to power itself.

3.1.2 Voltage

The USB-Bug will test voltage from 3.2 VDC to 30 VDC. If the voltage is greater than or equal to 5.6 VDC, the decimal point indicator on the voltage measurement will flash quickly. If the voltage is less than 4.4 VDC, the decimal point indicator on the voltage measurement will flash slowly.

3.1.3 Power

The USB-Bug will test power from 0 to 99.9W.

3.1.4 Capacity

The USB-Bug will display the Amp hours (Ah) and milliamp hours (mAh) that have passed through the Tester. This displays as a cumulative number, and is useful when determining how quickly/effectively a portable battery charger is working.

After the USB-Bug is disconnected from the PSE, the USB-Bug will automatically reset the Capacity reading to zero and start a new reading the next time you plug it into a PSE. You can also long-press the button to reset the Capacity reading to zero and start a new reading.

Note that the Capacity readout is split between the top row and the bottom row, with the whole numbers showing on the top row, and the mAh showing on the bottom row. You will note there is a decimal point at the right on the top row, as well as the printout on the USB-Bug itself. *(See image at right.)*

3.2 Additional Features

The USB- Bug can be used for other things, including security while charging your tablet or phone, or faster charging.

3.2.1 Intelligent Charging

The USB-Bug has a built-in Smart Chip that allows it to determine the safest maximum current your PD can accept. That means the USB-Bug can charge your phone or tablet up to 50% faster than aftermarket/generic chargers.

Note—When plugged into a USB 2.0 port, the current being provided by that PSE is likely only 0.5A (unless it is specifically designed to be higher). Thus, if you use the USB-Bug to charge two devices at the same time, the current will be split to the receiving devices, and you may see a "trickle" charge (i.e., 0.25A charging each device) that may not be optimal.

3.2.2 Data Masking

There are two USB out ports on the USB-Bug. The top port, called the Unmasked Port (which is labeled as #1 on the diagram on obverse), allows data to transfer while charging. The bottom port, called the Masked Port (which is labeled as #2 on the diagram on obverse), blocks any data from being transferred. You can use the Masked Port to charge your phone or tablet without having to worry about anyone accessing your data.