VIRTUAL BATTERY MANUAL

TheGigRig Ltd Virtual Battery Manual, July 2025

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1. INTRODUCTION

The GigRig Virtual Battery is designed to deliver power the same way 9v batteries do and includes a sag control to emulate older carbon batteries. The Virtual Battery will deliver filtered, isolated 120mA, almost totally noise and hum free 9V DC power for guitar effects.

Virtual Batteries are designed to either emulate a Alkaline or Carbon battery. An Alkaline Battery provides a clean linear supply however a Carbon Battery reacts very differently. As you attempt to draw more current from a Carbon Battery it will drop its voltage slightly to 'keep up with demand'.

When you play particularly hard through a fuzz or wah (transients especially) this will cause the pedal to draw more current. When powered via a Modern Power Supply/Alkaline Battery this has no effect, but when being powered from a Carbon Battery the voltage will drop slightly according to the signals amplitude, this causes Compression/Saturation (within the pedal) that wouldn't normally occur (this is why many musicians insist on powering pedals from Carbon Batteries). Virtual batteries provide a cost effective and environmentally friendly solution.

The Virtual Batteries also feature a dial that 'blends' between an Alkaline or Carbon Battery allowing you to find the perfect combination of both.

VB-BC = Battery Clip connector
VB-DC = Centre Negative 2.1mm DC connector

2. ISOLATION

Isolation is achieved using a miniature toroidal transformer. This solves most hum and noise problems associated with many effects pedals and other guitar equipment.

3. VIRTUAL FUSE

The Virtual Battery contains an output safety fuse. This fuse is designed to blow at continuous currents of over 300mA. However, being a virtual fuse, it will re-heal approximately 20 seconds after the load has been removed.

4. VIRTUAL INTERNET RESISTANCE

The Virtual Battery is designed with an internal resistance of 10 Ohms. Just like old carbon-zinc batteries the voltage will drop to 6.5V DC at a load of 250mA. The Virtual Battery is designed to emulate older carbon batteries as some effects pedals (such as vintage Fuzz & Wah pedals) can sound better when used with these older, higher internal resistance batteries.

5. VARIABLE 'SAG' VOLTAGE

The Virtual Battery also features a variable 'sag' control (a small user pre-set voltage control situated just above the Virtual Battery output lead). By using a small jeweller's flat-head screwdriver you can increase the internal resistance to emulate the 'dying battery' effect beloved by many Fuzz and other vintage pedal users. You can set it to your own preference.

6. TECHNICAL SPECIFICATIONS

General Specification Parameters:
Input Voltage: 9.0V +/- 10%
Output Voltage: +/- 5%

Isolation: 1000V
Isolation Resistance: 500Meg ohm
Usable Temperature Range: -10 to +50 Deg. C
Isolation Capacitance: 4.7nF

Short Circuit Protection: The short circuit current of the Virtual Battery is 300mA. After 20 seconds the Virtual Battery will shut down until the short is removed.

Reverse Input Voltage Protection: The input of the Virtual Battery is reversed voltage diode protected. (6 amps maximum for 50 seconds).

Safety: If the Virtual Battery shuts down your power supply, the DC 9V input is connected the wrong way round. Remove the Virtual Battery from your power supply immediately.

THE VIRTUAL BATTERY MUST USE A CENTRE NEGATIVE SUPPLY.

The Virtual Battery IS NOT a rechargeable battery. DO NOT ATTEMPT TO RE-CHARGE.

No Load Output: With 9V input, the output voltage under 'no-load' conditions is 9.5V +/- 10%.
No Load Quiescent Current and Virtual Leakage Current: 18mA.

Radio Frequency Emissions and Susceptibility: The Virtual Battery contains RF suppression and RF susceptibility avoidance components in compliance with CE marking regulations.

Physical Size: 40mm x 27.7mm x 17.8mm / 1.56 x 1.09 x 0.7 inches. It will fit most battery compartments.

7. WARRANTY

The GigRig warrants this product to be free from defects in material and workmanship for 12 months (or legal standard for country of delivery) from the date of original purchase.

If the product fails within the warranty period, The GigRig will repair or replace it at our discretion and cover return shipping. This warranty applies when used as recommended. It does not cover:

- Loss, theft, misuse, abuse
- Unauthorized modification or improper storage
- Lightning or natural disasters

Damage from the above may incur a non-warranty repair fee.

This warranty is not transferable to a new owner should you sell the pedal.

Legal:
In the event of malfunction, the purchaser's sole remedy is repair or replacement. The GigRig is not liable for:

- Lost profits or savings
- Damage to other equipment
- Incidental or consequential damages

The GigRig's liability will not exceed the original purchase price. All warranties other than those expressly stated are disclaimed.

Disposal:
No batteries or lead inside. Return to TheGigRig Ltd or follow local electrical disposal regulations.
Do not dispose of in household waste.

Copyright & Legal

- TheGigRig is protected by copyright, patent, and design registration.
- 'GigRig' is a registered trademark (No. 2343300).
- Unauthorized copying of design or functionality for commercial gain may lead to legal action.
- Licenses may be granted to non-competing companies.

Compliance:

- RoHS Compliant
- Compliant with EN 60950
- Power supply approved for USA and EU regulations (see separate instructions)

Manufacturer:

The GigRig Ltd, Unit 15 Whitehill Industrial Pk, Royal Wootton Bassett, SN4 7DB

Authorised Representative:

EAS – Mustamäe tee 50, 10621 Tallinn, Estonia

Warnings:

For indoor use only. Keep away from water and children