foc.us gamer
manual & warranty

Contents

Welcome

foc.us is designed to be used by healthy adults who do not suffer from epilepsy, brain conditions, have a metalicmetallic implant such as a skull plate, or have other implants such as a cochlear implant or pace-maker. The sole purpose of foc.us is to improve your video-gaming.

Warning

You should not use the foc.us headset if you suffer from epilepsy, seizures, brain lesions, bipolar depression, or severe heart disease.

Immediately stop using foc.us if you experience short short-term negative effects from use.

Foc.us is not a toy and is not intended to be used by anyone under the age of 18 years old.

If using external electrodes, it is not recommended to place electrodes in patterns that differ from the default foc.us configuration. Do not position electrodes in a manner where current may pass through the brainstem. Do not position electrodes over cuts, grazes, or damaged skin.

Allow at least 48 hours between each use of foc.us.

Always place wet sponges between the electrodes and your skin when using foc.us.

Do not touch the metal electrodes when using foc.us, as you may be burned.

What you need to understand before using foc.us

foc.us is designed to improve your mental gaming skills by exciting and inhibiting sections of your prefrontal cortex with an electric current.

Possible side-effects include visual artifacts (such as white flashes), nausea, headaches, and fatigue. If you experience any of these side-effects, stop your foc.us session.

If you see white flashes (known as phosphenes), adjust the position of the foc.us headset away from your eyes.

You may feel tingling, hot, or cold sensations from using foc.us. If these sensations become uncomfortable or painful, stop your foc.us session.

Skin redness may appear under electrodes after use, which will disappear after a short time. Repeated use of foc.us may lead to skin irritation.

If you exceed the recommended session duration, you increase the risk of consolidating both the excitary and inhibitory processes.

Foc.us should not be used during any activities other than sedentary gaming.
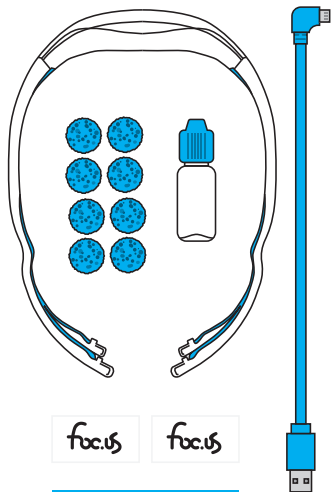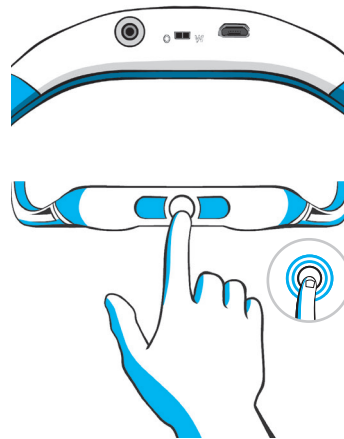
Whats in the box

1. foc.us gamer headset

2. foc.us case

3. micro-USB charging cable

4. reusable water bottle

5. 8 × sponges

This Manual & Warranty book and two vinyl foc.us logo stickers.

foc.us

Manual & Warranty

Instructions and intended use

Use foc.us immediately before or at the beginning of your gaming session.

Using foc.us

Flick the switch on the bottom of the foc.us headset to the "W" position to turn off the headset. The foc.us headset can only be recharged when turned off.

Flick the switch to the "O" position to turn the foc.us headset on. The foc.us headset cannot recharge in this mode.

To switch the foc.us to the "ready state," touch the circular sensor and hold for two seconds. When foc.us switches to the ready state, the foc.us logo will flash blue and begin blinking. The foc.us headset is now ready to pair with a Bluetooth device or activate.

If you hold the touch sensor for longer than two seconds, the foc.us headset will not switch to the ready state. In this case, the foc.us logo will flash blue and then red.
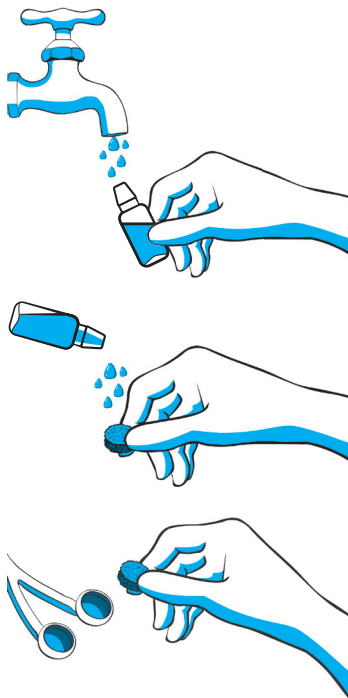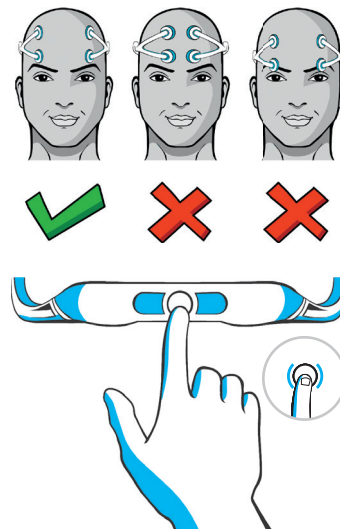
Preparing sponges

Fill the included reusable bottle with water. Optionally, add a tiny small amount of salt to create a saline solution.

Wet the included sponges using the water bottle until they are saturated but not dripping.

Insert sponges

Insert the wet sponges into the electrode cups

Positioning headset

Position the foc.us headset on your head using the left-most figure as a guide.

Activating tDCS

To begin the tDCS session, touch the touch sensor.

The headset will buzz a four-second countdown and will double-buzz when current is about to flow.

The current will slowly rise from zero up to the set target current.

Current will automatically stop flowing after the configured duration has elapsed.
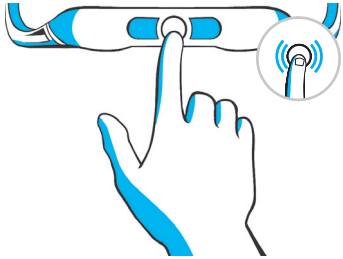
Ending tDCS

Tap the touch sensor to deactivate foc.us. Flick the switch to the "W" position to turn foc.us off.

Error

If the resistance is too high and the headset cannot reach the target current, the logo will flash and the headset will buzz.

tDCS Settings

How to change settings

You can change the default settings of the foc.us headset by tapping the touch sensor two times.

The headset will cycle through four modes, each described in the following section; the logo will flash in a different pattern to denote each mode. Tapping the touch sensor will select the current mode in the cycle.

Once you have selected the mode, you can then select the current level.
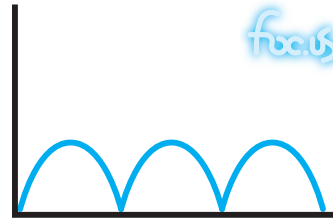
Available tDCS modes

Sine-wave current

Sine-wave current rises and falls in a wave-like shape for the duration of the session.

Logo: The logo brightness will gradually rise and fall (until the logo is not lit) for five seconds.
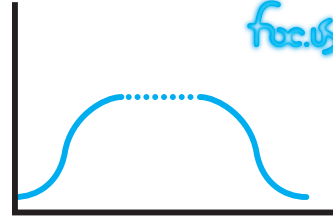
Constant-current tDCS

Constant current is the default tDCS behaviour. In this mode, the current rises to the specified current and then maintains that current for the duration of the session.

Logo: The logo remains blue at a constant brightness for five seconds.
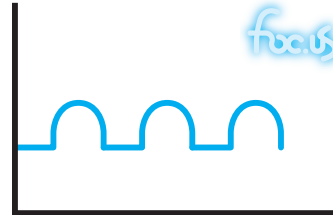
Pulsed current with offset

Similar to sine-wave current mode, but the current does not drop below 0.5 mA.

Logo: the logo brightness will rise and fall (the logo always remains lit) for five seconds.

Random-noise current

Random-noise current changes randomly between 0.5 mA and the specified maximum current for the duration of the session.

Logo: The logo brightness will change erratically for five seconds.

WARNING: Random-noise current can be the most uncomfortable of the modes because of the sudden changes in current.

Sham (Bluetooth control only)

Sham mode is only available via Bluetooth connection and cannot be set manually.

In sham mode, the current will ramp up, but then ramp off. The logo will remain lit for the duration of the session as if in constant-current mode.

Current Settings

Once you have selected a mode, you can select the current level.

The logo will glow for three seconds at varying levels of brightness to indicate the current level. Tapping the touch sensor during the desired mode will select it. The foc.us headset supports four current levels:

Low, Medium, High, and Maximum.

Low: 0.8 mA

Medium 1.2 mA

High 1.5 mA

Maximum 2.0 mA

Note: Maximum is only available when external electrodes are connected.

Once a current has been selected, the device will return to the ready state.

How to confirm settings

Tap the touch sensor three times; the logo will flash, showing the mode and then the current level.

Factory Reset

To restore your headset to factory conditions, turn it on and then hold the touch sensor for 30 seconds.

The lights will flash red and blue; at this point, tap the touch sensor once to confirm the factory reset.

Summary of touch sensor actions
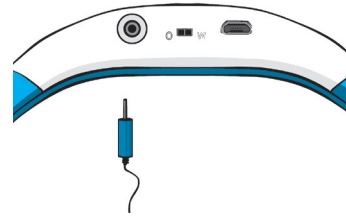
Hold for two seconds – turn on

Tap once – activate

Tap twice – change settings

Tap three times – show current mode and current level

Hold for 30 seconds – reset to factory settings

Videos describing how to use foc.us are available on our website: http://www.foc.us/videos

Connecting external electrodes

You can connect external electrodes to the foc.us headset. Only use foc.us supplied electrodes to ensure correct polarities and safe use.

Each external electrode pad is marked with a + to indicate anode or a – to indicate cathode.

WARNING: Misusing external electrodes can be dangerous. Ensure that you do not place electrodes in positions that could be dangerous, including but not limited to positions that pass current through the brainstem.
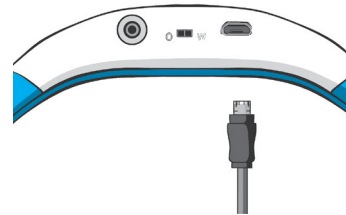
Recharging

If the logo glows red, the battery needs to be recharged.

To charge the headset, flick the headset switch to the "W" position and connect the supplied micro-USB cable to the headset.

During charging, the logo will glow green.

Bluetooth® connection

When the headset is first put into the ready state, the logo will blink blue every half-second for one minute. During this period, the headset can be paired to a suitable Bluetooth® device.

The default pin code is "000000".

When the headset successfully connects to a Bluetooth device, the logo will blink blue every two seconds.

If the headset is on in the ready state and not connected, the logo will blink blue every five seconds.

For a list of available foc.us Bluetooth® apps, go to http://www.foc.us/bluetooth

Care and maintenance (expected service life)

Always store your foc.us headset in the supplied case when not in use.

Squeeze any excess liquid from the sponges when not in use, and place them in the case.

Ensure the lid of the supplied water bottle is tightly closed before returning to its place

The copper electrodes will discolor over time; this behavior is normal and does not affect their performance.

Be careful when removing the external electrodes or micro-USB connector.

Troubleshooting

Problem	Solution
Cannot turn on	Ensure battery is charged
Error mode	Ensure sponges are wet
Battery will not charge	Check connection of micro-USB to 5V power source

Specifications

Size:	195mm × 150mm × 58mm
Weight:	300g headset
Battery:	3.7V Li-Po 105mAh rechargeable
Max current:	2.05mA – hardware limited
Max voltage:	60V
Sample rate:	2,000 per second
Bluetooth:	4.0 Bluetooth low energy GATT profile
FCC ID:	2AAH6DLIG1

Support

More information is available on the website: http://www.foc.us/support

You can also email support@foc.us if you have any questions or concerns

Glossary

Activate	begin the current flow between the electrodes
Active electrode	
Anode	positive electrode
Cathode	negative electrode
Montage	positioning of the electrodes
Ready State	headset turned on and ready to pair with a Bluetooth device, change mode, or activate
tDCS	transcranial direct-current stimulation
tRNS	transcranial random-noise stimulation
phosphenes	visual artifacts
sedentary	sitting; not physically active

fcc

FCC warning statement:

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operatinginstructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Warranty & Guarantee

foc.us warrants the foc.us headset (the "Product"), and only the Product, against defects in materials and workmanship under normal use for a period of thirteen (13) months commencing on the date of original purchase by the original purchaser (the Warranty Period). This warranty does not cover damage caused by misuse, accident, abuse, natural and/or external causes (i.e. fire, earthquake, flood, etc.), use other than as intended and described in the Product instruction manual, finishes, normal wear and tear, tampering, unreasonable use, service performed by unauthorised service agents, or loss or damage to the battery. foc.us does not warrant that the operation of the Product will be uninterrupted or error-free.

Limitation of remedies

Under this Limited Warranty, foc.us liability and customer's exclusive remedy under the foregoing paragraph will be limited to replacement or repair of the Product by foc.us or its authorized service centers. A replacement Product or part assumes the remaining warranty of the original Product or ninety (90) days from the date of replacement or repair, whichever is longer.

To obtain warranty service, contact support@foc.us

For your security, please return your Product with an insured carrier (e.g., FedEx, UPS, USPS Parcel Post) and retain your receipt. foc.us is not responsible for items damaged or lost in transit. Other than for the reason of hardware defects, the return freight cost responsibility belongs solely to the costumer.

Limitation of damages

In no event will foc.us or any of its affiliated or subsidiary companies be responsible for any special, incidental, or consequential damages resulting from the use of this Product, or based on any breach of warranty, breach of contract, negligence, tort, or any other legal theory. Such damages may include, without limitation: loss of savings or revenue; loss of profit; loss of use; the claims of third parties, including without limitation retailers; any cost of any substitute equipment or services.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. The warranty gives specific legal rights, and you may have other legal rights, which vary from state to state or country to country.

This Limited Warranty is valid only in the United States and Europe for Products sold in the United States and Europe. Resellers, agents, or employees of foc.us are not authorized to make any modification, extension, or addition this Limited Warranty.

www.foc.us