



## Instructions for Use for gammaCore Sapphire™ SLC (non-invasive vagus nerve stimulator)

1. INDICATIONS AND PRODUCT DESCRIPTION .....	2
2. GAMMACORE TREATMENT RECOMMENDATIONS .....	3
3. CONTRAINDICATIONS.....	5
4. COMMON SIDE EFFECTS ASSOCIATED WITH GAMMACORE .....	6
5. WILL I STILL NEED TO TAKE MEDICATIONS? .....	6
6. WARNINGS AND PRECAUTIONS .....	6
7. DISPLAY SYMBOLS .....	9
8. DEVICE STATUS INDICATORS.....	10
9. RELOADING INSTRUCTIONS.....	12
10. DEVICE ERROR CODES .....	13
11. CHARGING INSTRUCTIONS .....	14
12. FUNCTIONS.....	15
13. HOW TO USE gammaCore Sapphire .....	16
14. CLEANING.....	21
15. PRODUCT HANDLING .....	21
16. TROUBLESHOOTING .....	22
17. PRODUCT DISPOSAL .....	22
18. SYMBOLS AND NOMENCLATURE DESCRIPTION .....	23
19. PRODUCT ORDERS AND RETURNS .....	24
<b>ADDITIONAL INFORMATION FOR HEALTHCARE PROVIDERS .....</b>	<b>25</b>
20. DETAILED PRODUCT DESCRIPTION .....	26
21. ADDITIONAL CONTRAINDICATIONS.....	26
22. ADDITIONAL WARNINGS AND PRECAUTIONS .....	26
23. CLINICAL STUDIES .....	28
24. ELECTRICAL CLASSIFICATION .....	28
25. ELECTROMAGNETIC COMPATIBILITY GUIDANCE .....	28
26. CONTACT INFORMATION .....	32

**Caution: Healthcare provider authorisation required.**

## 1. INDICATIONS AND PRODUCT DESCRIPTION

gammaCore Sapphire™ (non-invasive vagus nerve stimulator) is indicated to provide non-invasive vagus nerve stimulation (nVNS) on the side of the neck. gammaCore is indicated for the treatment and/or prevention of primary headache (migraine, cluster headache, and hemicrania continua) and medication overuse headache in adults.

gammaCore provides a mild electrical stimulation to the vagus nerve, which runs through the neck and carries information to the central nervous system. Each stimulation with gammaCore lasts 2 minutes. The patient controls the intensity level.

**gammaCore delivers up to 30 stimulations in a 24-hour period, starting when the device is turned on and the intensity level is increased above 3.** Once the maximum daily number of stimulations has been reached, the device will not deliver any more stimulations until the following 24-hour period. The number of remaining stimulations available in a 24-hour period is indicated on the display (refer to Section 8). gammaCore is rechargeable and includes a charging case to charge the device. A gammaCore Refill Card is used to load the device with days of therapy based on a healthcare provider's (HCP) prescription.

**NOTE: gammaCore's 24-hour cycle begins the first time the intensity level is increased past 3.**

**NOTE: This is a pre-loaded device that contains a specific number of days of therapy. A gammaCore™ Refill Card is needed to reload the device at the end of that period when a refill is required. Please contact electroCore Customer Service for further assistance (refer to Section 26).**

gammaCore is supplied non-sterile.



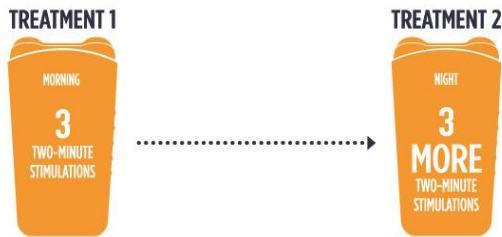
Device Feature	Description / Use
Stimulation Surfaces	Points of contact with patient's skin
Display	Indicates device status (refer to Section 8)
Power Button	Turns power ON/OFF
Control Button	Increase/decrease stimulation intensity
Cap	Covers and protects the stimulation surfaces
Refill Card	Loads device with therapy when a refill is required. (refer to Section 9)
Charging Case (Case with Power Cord)	Charges the device (refer to Section 11)

Available by healthcare professional authorisation only.

## 2. GAMMACORE TREATMENT RECOMMENDATIONS

### Preventive Treatment of Cluster Headache

- Two treatments (morning and night) each consisting of *three* consecutive 2-minute stimulations



### Acute Treatment of Cluster Headache

- One treatment consisting of *three* consecutive 2-minute stimulations
- If pain has not decreased 3 minutes after the start of your first treatment, a second treatment (consisting of *three* consecutive 2-minute stimulations) may be administered.

If the therapy does not provide relief, you should continue taking your usual medications and seek medical attention, if necessary.



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## Preventive Treatment of Migraine Headache

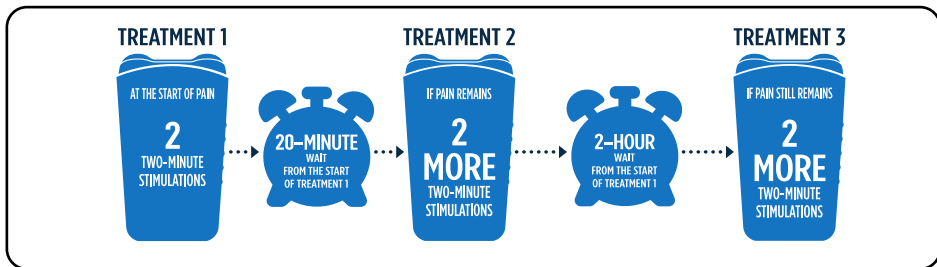
- Three treatments (morning, mid-day, and night) each consisting of *two* consecutive 2-minute stimulations



## Acute Treatment of Migraine Headache

- One treatment consisting of *two* consecutive 2-minute stimulations
- If pain has not decreased 20 minutes after the start of your first treatment, a second treatment (consisting of *two* consecutive 2-minute stimulations) may be administered
- If you are not pain-free 2 hours after the start of your first treatment, a third treatment (consisting of *two* consecutive 2-minute stimulations) may be administered.

If the therapy does not provide relief, you should continue taking your usual medications and seek medical attention, if necessary.



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## Treatments of Hemicrania Continua and Paroxysmal Hemicrania

- Three treatments (morning, mid-day and night) each consisting of *two* consecutive 2-minute stimulations administered on the same side of pain



**For a detailed treatment guide, please refer to Section 13.9**

## 3. CONTRAINDICATIONS

Contraindications include but are not limited to:

- Patients with an active implantable medical device, such as a pacemaker, hearing aid implant, or any implanted electronic device
- Patients with metallic device such as a stent, bone plate or bone screw implanted at or near their neck
- Patients who are using another device at the same time (e.g., TENS Unit, muscle stimulator) or any portable electronic device (e.g., mobile phone)

Patients should not use gammaCore:

- While driving, operating machinery, or during any activity that may put patient at risk of injury
- Near microwave machines, magnetic resonance imaging, radio frequency surgical, or computer-aided tomography machines
- In an explosive atmosphere or in the presence of flammable gas mixtures
- If patient has an open wound, rash, infection, swelling, cut, sore, drug patch, or surgical scar(s) on the neck at the treatment location
- If patient has wet skin, is in the water, or just stepped out of the water (eg, shower, bath, pool)

## 4. COMMON SIDE EFFECTS ASSOCIATED WITH GAMMACORE

The most common side effects (reported in more than 1% of patients who participated in gammaCore studies) include:



- Application site discomfort
- Application site irritation/redness
- Local pain, face/head/neck area (including toothache)
- Muscle twitching and/or contractions, face/head/neck area (including facial droop and/or lip pull)
- Headache/migraine
- Dizziness
- Tingling, pricking, or a feeling of “pins and needles” on the skin where the device is applied (paresthesia/dysesthesia)

These side effects typically resolve immediately after the stimulation is complete.

## 5. WILL I STILL NEED TO TAKE MEDICATIONS?

People respond differently to gammaCore. You and your HCP should discuss your ongoing treatment routine, including the use of any additional therapies and/or medications. It is important to always follow your HCP's recommendations about your medications. gammaCore can be used with existing medications for the treatment and/or prevention of primary headache (migraine, cluster headache, and hemicrania continua).

## 6. WARNINGS AND PRECAUTIONS

	<b>Warnings indicate instructions, which, if not followed, may result in serious injury or death to the device user or to the patient.</b>
	<b>Precautions indicate instructions, which, if not followed, may result in damage to the equipment or degradation in the quality of treatment.</b>



### Warnings

- The long-term effects of the chronic use of gammaCore have not been evaluated.
- Safety and efficacy of gammaCore have not been evaluated in the following patients, or situations:
  - Patients with uncontrolled hypertension, hypotension, bradycardia, or tachycardia

- Patients with a history of baseline cardiac disease or atherosclerotic cardiovascular disease, including congestive heart failure, known severe coronary artery disease, or recent myocardial infarction (within 5 years)
- Patients with a history of abnormal baseline ECG, prolonged QT interval or arrhythmia
- Patients who have had surgery to cut the vagus nerve in the neck (cervical vagotomy)
- Paediatric patients
- Pregnant women
- Patients with active cancer or cancer in remission
- Patients with an abnormal cervical anatomy
- Patients with a history of brain tumor, aneurysm, bleed or head trauma
- Patients with a history of syncope or seizures
- Contact your HCP if your symptoms continue or worsen.
- Treatment is intended to be given (administered) as directed by an HCP. Your HCP or an electroCore Customer Service Representative must train you in the proper use of gammaCore (refer to Section 26).



## Precautions

### ***Before Use:***

- You must carefully read the gammaCore Instructions for Use.
- Only use gammaCore as described in the Instructions for Use, or as otherwise directed by the HCP.
- The use of more than 24 stimulations per day has not been evaluated in controlled clinical trials. Do not use more than 24 stimulations in a 24-hour period.
- Only use an electroCore-approved gel with gammaCore. Please contact electroCore Customer Service for an electroCore-approved gel that works with the device.
- Do not share gammaCore with another person.
- gammaCore should not be applied across or through the head, directly on the eyes, covering the mouth, on the chest or the upper back, or over the heart.
- Remove jewelry that may touch the treatment location (necklaces, earrings, etc.).
- Carefully examine the device for any signs of damage or defects.

### ***Do not use gammaCore if:***

- The stimulation surfaces are broken or cracked.
- The casing is cracked, dented, or appears to be damaged.
- An "E" with a numeric code is displayed on the screen when the device is turned on. This means that there is an error (refer to Section 10).
- It has passed its expiration date. The expiration date is indicated on the device packaging.

***During Treatment:******Discontinue treatment if you experience:***

- Light-headedness, dizziness, or chest pain
- Excessive skin irritation

If the device seems to malfunction, discontinue use immediately, continue taking usual medications and seek medical care as needed. When possible, contact electroCore Customer Service for assistance with your device; electroCore Customer Service cannot provide medical assistance.















***Caring for Your Device:***

- Turn off gammaCore when it is not being used. If the device is not turned off, the battery may become depleted, and the device may not deliver treatment when needed. If the battery becomes depleted, place in the charging case to recharge.
- Keep gammaCore away from water or other liquids, including cleaning liquids.
- Moisture may damage the device. Keep gammaCore away from items such as nebulizers and steam kettles.
- Store gammaCore in a safe location out of reach of children.
- Avoid exposure to extreme hot or cold temperatures outside the range of 0°C to 38°C (32°F to 100°F). Exposure to such conditions may cause the device to malfunction.
- Do not attempt to replace the device battery. If the device is not working, contact electroCore Customer Service.
- Do not open or take apart the case or attempt to repair or modify the device. There are no user-serviceable parts. If the device is not working, contact electroCore Customer Service.
- Do not intentionally damage, burn, or puncture the device.
- Wireless communications equipment, such as wireless home network devices, mobile phones, cordless telephones and their base stations, and walkie-talkies, can affect this equipment. Keep gammaCore at least 3.3 m (10.8 ft) away from these items while in use.

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## 7. DISPLAY SYMBOLS

Icon Description	Icon	Example Display	Description
Stimulations Remaining			6 stimulations remaining within a 24-hour period
Intensity Level			Intensity level is at 23
Months Remaining			3 months of therapy remaining
Days Remaining			30 days of therapy remaining* *The display will begin flashing when there are 31 days remaining.
Intensity Level at Last Use			Last delivered intensity level was 23
Battery			Battery is charging
Reload			Refill card is being read






\*When the device is first loaded with a refill card, the display will show months of therapy remaining. The display will show the number of months of treatment left until day 31, where it will begin counting down the number of days remaining.

8. DEVICE STATUS INDICATORS

gammaCore has a visual indicator (display) and an auditory signal (beep) to indicate device status.

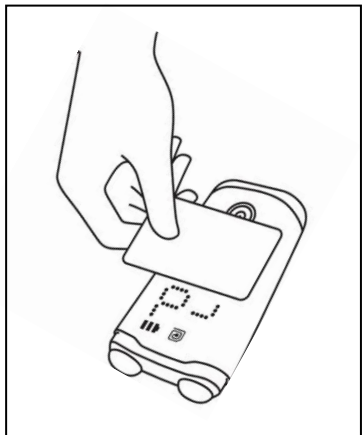
Status	Display	Sound	User Action
Start Up / Ready for Use	<div>1. Months/Days Remaining</div> <div>2. Stimulations Remaining</div> <div></div>	1 beep after power ON	Follow "How to Use" Instructions (refer to Section 13)
Device in Use	<div>Intensity Level (min 1 – max 40)</div> <div></div>	Short beep each time intensity is increased/ decreased	Follow "How to Use" Instructions (refer to Section 13)
Stimulation Complete	<div>Last Intensity Level Used Will Show</div> <div></div> <div><b>THEN THE DISPLAY WILL SWITCH BETWEEN</b></div> <div>1. Months/Days Remaining</div> <div>2. Stimulations Remaining</div> <div></div>	2 short beeps	NONE: Device turns off automatically


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Status	Display	Sound	User Action
Maximum number of stimulations reached within 24 hours.		None	gammaCore turns off automatically  Wait until next 24-hour period
Expired/No Days Left		None	gammaCore turns off automatically  Reload with refill card
Low Battery		Repeated long beeps	Place in charging case
Dead Battery	None	None	Place in charging case
Charging	Battery Charge Indicator Bars Flash and Increase 	None	Allow device to fully charge
Charging Complete		None	Remove gammaCore from charging case  gammaCore is ready to use

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## 9. RELOADING INSTRUCTIONS









1. Once you have received your gammaCore™ Refill Card, you can now load your device.
2. Turn gammaCore on by pressing the power button. Have your refill card ready.
3. Once gammaCore is turned on, place the device on a hard surface with the display screen facing up. Place the refill card across the device so you can see the display (as shown in the diagram).
4. Leave the refill card on the device for a minimum of 10 seconds. (Do not move the refill card as it may disrupt the loading process).
5. gammaCore will display “rd” and the  icon (refer to Section 7 for displayed details) while gammaCore is reading the refill card.
6. gammaCore will **beep twice** when therapy has been loaded. The reading and loading process may take a minimum of 10 seconds.
7. The number of months/days loaded onto your gammaCore will be displayed (Refer to Section 7 for display details). The device is now ready to be used for treatment.

**NOTE:** If a “C” (warning) or “H” (error) with a numeric code is displayed, an error has occurred during the reloading process. Turn the device off, then back on and try to reload a second time. If the error continues, contact electroCore Customer Service.

**NOTE:** If 5 card reloading “H” errors occur during a 24-hour period, “H2” will be displayed. Wait 24 hours and retry or contact electroCore Customer Service.

**NOTE:** If 10 card loading attempts are made during a 24-hour period, “H1” will be displayed. Wait 24 hours and retry or contact electroCore Customer Service.

## 10. DEVICE ERROR CODES

Status	Display	Sound	User Action
Start-Up Error	<p>An example of an error code:</p>  <p>Errors may have different numeric codes</p>	None	Wait 24 hours and restart device (Turn off and on again)*
Too many attempts to reload the device in 24-hour period		Repeated Long Beeps	Wait 24 hours and try again*
Too many reload errors in 24-hour period		Repeated Long Beeps	Wait 24 hours and try again*
Card already used		None	Locate unused refill card and try again*
Wrong Card Version for this Device		None	Card has already been used or wrong version card for this device*
gammaCore Not Correctly Placed in Charging Case		None	Ensure gammaCore is placed correctly in charging case

\*If error is not resolved, contact electroCore Customer Service.

**NOTE:** If you see a code displayed that is not listed above or if the error has a different numeric code, contact electroCore Customer Service (refer to Section 26).

## 11. CHARGING INSTRUCTIONS



1. Plug the power cord of the KEEP STATION into a power outlet. Only use the provided power cord with the charging case.
2. Place the device into the charging case with the power button facing up. The device should fit into the charging case with ease. Do not force the device into the charging case.

**NOTE:** The cap is designed to position gammaCore correctly in the charging case. If the device is misaligned, “Un” is displayed. Remove the device and try placing gammaCore in the charging case again.

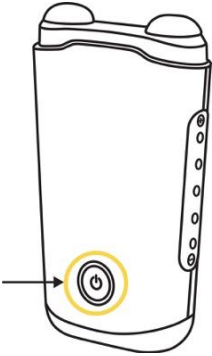
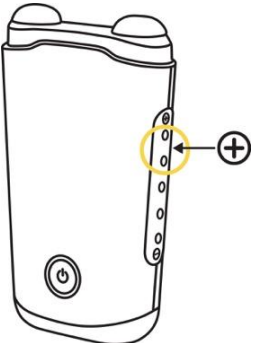
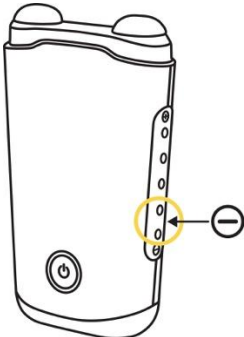
3. The device display will show “Ch” with the battery charge indicator bars flashing and increasing.
4. The device will show “dn” when fully charged.

**NOTE:** It only takes a few minutes until there is enough charge to deliver 2-3 stimulations.

**NOTE:** Charge your device before first use. It typically takes 4 to 5 hours for a full charge. High temperatures may increase the charging time. Monitor battery life and charge as needed to maintain an adequate number of stimulations on gammaCore (refer to Section 8 for feedback on the device status indicators).

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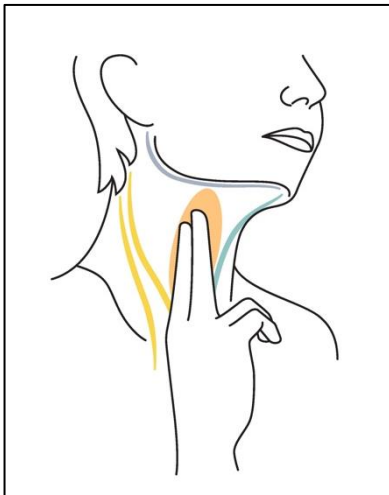
## 12. FUNCTIONS

Power Button	Increase Intensity Level	Decrease Intensity Level
		
Press the power button to turn device ON	Press the upper area of the control button	Press the lower area of the control button
Hold the power button to turn the device OFF		

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## 13. HOW TO USE gammaCore Sapphire

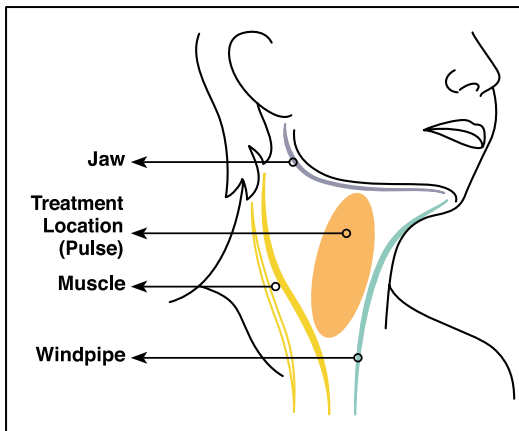
### Set Up



13.1 Remove any jewelry that may touch the treatment location.

13.2 Find a comfortable position. (A place where you can see your neck in a mirror may be helpful.)

13.3 Locate the treatment location by finding the pulse on the side of the neck. The vagus nerve is in the same area. Make sure the treatment location is clean and dry.



The stimulation surfaces of the device will line up with the following landmarks:

- Over the pulse (orange); this is the treatment location
- In front of the large muscle at the side of the neck (yellow)
- Just below the lower jaw (grey)
- Lined up next to the windpipe (green)

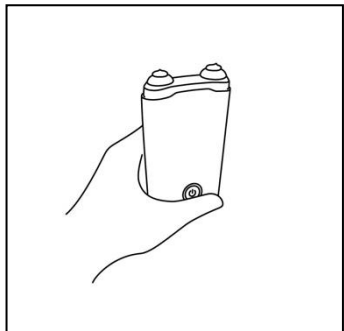




13.4 Remove the cap.



13.5 Apply a small (pea-size) amount of gel to both of the stimulation surfaces. Not applying the gel as described may cause the stimulation to be uncomfortable or less effective.



**CAUTION:** Only use an electroCore-approved gel with gammaCore. Please contact electroCore Customer Service for an electroCore-approved gel that works with the device (refer to Section 26).

## Delivering Treatment



13.6 Turn gammaCore on by pressing the power button. When the device is ready for use, the device will beep once. The number of stimulations available for that 24-hour period and months/days remaining will be displayed.

13.7 Position the device on the side of the neck over the treatment location. Use mild to moderate pressure so the device makes good contact with the skin; however, do not apply excessive pressure to the neck. Make sure that both stimulation surfaces are in contact with the skin during the stimulation. Checking in a mirror may help until you become familiar with the device and its correct positioning.

13.8 Increase the intensity level to the maximum level **you** can tolerate by repeatedly pressing the top area of the control button. You may experience a lip pull. Once you have found **your** maximum level, hold gammaCore in place for the remainder of the 2-minute stimulation. The device will beep every time the control button is pushed, and the display will indicate a numerical value between 1 and 40, which signifies the intensity level. You will likely feel muscle contractions at the treatment location. These muscle contractions are normal and should stop after the stimulation is complete. The appropriate intensity level is different for every person and may vary from stimulation to stimulation.

**NOTE:** Neck muscle contractions during the stimulation that are not painful are normal and not a reason to stop the stimulation. If muscle contractions are too strong or uncomfortable, try:

- Lowering the intensity level by pressing the bottom area of the control button.
- Repositioning gammaCore on the neck over the pulse and slowly increasing the intensity level again by pressing the top area of the control button.

If the stimulation is still intolerable, remove gammaCore from the neck and turn the device off by pressing and holding the power button and discontinue the stimulation.

**NOTE:** The length of each stimulation, 2-minutes, provides enough time for correct positioning of gammaCore and for setting the appropriate intensity level.

**NOTE:** You may administer gammaCore for up to 4 attacks (or 8 separate treatments) per day (for a total of up to 24 stimulations per day).

**NOTE:** The device has a limited number of stimulations it can deliver in a 24-hour period.

## 13.9 Treatment Guide

### Preventive treatment of cluster headache

- Two self-administered treatments consisting of *three* consecutive 2-minute stimulations should be applied daily.
- The first daily treatment should be applied within 1 hour of waking. The second daily treatment should be applied at least 7-10 hours after the first daily treatment.
- Stimulations should be applied on the same side of the neck.

### Acute treatment of cluster headache

- Each self-administered treatment should consist of *three* consecutive 2-minute stimulations applied at the onset of cluster headache pain or symptoms.
- If the cluster headache attack is not aborted, you may stimulate with an additional *three* 2-minute stimulations, 3 minutes after the first treatment.
- Stimulations should be applied on the same side of the neck.

### Preventive treatment of migraine headache

- Three self-administered treatments consisting of *two* consecutive 2-minute stimulations should be applied daily.
- The first daily treatment should be applied within 1 hour of waking. The second daily treatment should be applied 4-6 hours after the first daily treatment. The third daily treatment should be applied at night.
- Stimulations should be applied on the same side of the neck.

### Acute treatment of migraine headache

- Each self-administered treatment should consist of *two* consecutive 2-minute stimulations at the onset of pain or symptoms.
- If the pain has not decreased 20 minutes after the start of the first treatment, you may administer an additional treatment consisting of *two* consecutive 2-minute stimulations.
- If you are not pain free 2 hours after the start of the first treatment, you may administer a third treatment consisting of *two* consecutive 2-minute stimulations.
- Stimulations should be applied on the same side of the neck.

### Treatment of hemicrania continua and paroxysmal hemicrania

- Three self-administered treatments consisting of *two* consecutive 2-minute stimulations should be applied daily.
- Stimulations should be applied to the neck on the same side as pain



13.10 At the end of each stimulation, the device will display the last intensity level that was used for approximately 7 seconds, then revert to display the number of stimulations and months/days remaining. You may then place the device back on the treatment site for another stimulation. Additional gel may be applied between each stimulation.

**NOTE:** After 2 minutes, the device will beep twice, and the stimulation will automatically stop.

**NOTE:** The months/days and stimulations remaining can be viewed by turning gammaCore on. However, do not turn the intensity level higher than three (3) until preparing for a stimulation. The device counts each time the intensity level is higher than three (3) as a stimulation. gammaCore delivers a limited number of stimulations in a 24-hour period.

13.11 Clean gammaCore by wiping the leftover gel off the stimulation surfaces with a soft, dry cloth (refer to Section 14).

13.12 Clean the excess gel off your neck with a cloth or tissue. The gel is not intended to be left on the skin and may cause skin irritation for some people.

13.13 Put the cap back on the device after use.

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## 14. CLEANING

- Clean the device after each use by gently wiping the case and the stimulation surfaces with a soft, dry cloth to remove leftover gel.
- Put the cap back on the device after use to protect the stimulation surfaces from dirt, debris, and damage.



### PRECAUTIONS:

- Do not submerge the device in water; it is not water resistant.
- Do not use soap, hand sanitizer, detergents, or other cleansers when cleaning the device.

## 15. PRODUCT HANDLING

### Operating Conditions – gammaCore Sapphire™

- Range: -20°C to 60°C (-40°F to 140°F)
- Maximum Output: 30V (peak), 60mA (peak)
- Load Impedance: 450 to 550 Ohms
- gammaCore produces an electrical signal consisting of five 5,000-Hz pulses, repeating at a rate of 25 Hz. The waveform of the gammaCore pulse is approximately a sine wave.

### Operating Conditions – Charging Case

- Range: -20°C to 60°C (-40°F to 140°F)
- Only use the charging case indoors
- Do not place any object except gammaCore on the charging surface
- Maximum Output: 5.5V DC, 5W
- Input: 100 to 240 VAC, 50 to 60 Hz, 0.4A max

### Storage/Transport Conditions

- gammaCore should be stored at room temperature away from moisture
- Range: 0°C to 38°C (32°F to 100°F)
- Replace cap after each use
- Store the device in such a way (e.g., drawer or shelf) that the cap remains in place and is not accidentally removed.

### Service Life

- The service life of gammaCore is 3 years after the date the device has been activated.
- The expiration date of the conductive gel is 5 years after the date of manufacture.

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## 16. TROUBLESHOOTING

### **gammaCore does not turn on**

- gammaCore is not charged. Charge gammaCore by placing the device in the charging case (refer to Section 11).
- Restart gammaCore. Turn gammaCore off and on again.

### **gammaCore does not charge**

- If “Un” is displayed, remove gammaCore and place back in charging case. If “Un” continues to be displayed, move device around in the charging case.
- Ensure the charging cord is plugged into a live power outlet. Only use the provided charging cord with the charging case.
- Ensure charging cord wire is plugged into the charging case.

### **gammaCore has no stimulations left/days left**

- A gammaCore Refill Card is needed to reload the device (refer to Section 9). Please contact electroCore Customer Service to order a refill card.

***For further assistance, please contact electroCore Customer Service (refer to Section 26).***

## 17. PRODUCT DISPOSAL

























Regulations require that disposal of electrical and electronic equipment, including used and unused medical devices, is handled in a controlled manner. A product that may be contaminated after use or that may contain chemicals or elements that may present hazards to people, or the environment must be disposed of in accordance with the applicable government regulations. Contact electroCore Customer Service (refer to Section 26) if you have questions.

**NOTE:** gammaCore contains a lithium battery that cannot be removed by the user.

**NOTE:** Please dispose gammaCore as you would a cell phone or other electronic device. Check with your local municipality to do this according to your local electronic waste regulations.

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## 18. SYMBOLS AND NOMENCLATURE DESCRIPTION

	Expiration date		Follow operating instructions
	Lot number		Manufacturer
	Catalog number / Reference number	IP22	Protection from solid foreign objects $\geq 12.5$ mm and ingress of water at 15°
	Electric shock hazard		Type BF applied part
	Serial number		Storage temperature
	Non-sterile	xyyyGzzzz (package label)	Date of Manufacture on package label, where: yy is the year of manufacture, eg, 2521G1001 indicates the year of manufacture is 2021
	<b>WARNING</b> Failure to follow instructions may result in serious injury or death to the patient or user		Non-ionizing electromagnetic radiation
	<b>PRECAUTION</b> Failure to follow instructions may result in damage to the equipment or degradation in the quality of treatment		Magnetic resonance unsafe
	Refer to instruction manual		Authorized representative
	Information or additional information available		Keep away from sunlight
	Separate collection for waste of electrical and electronic equipment		Do not use if package is damaged
	Date of Manufacture		Medical device

## **19. PRODUCT ORDERS AND RETURNS**

Authorisation by your HCP is required.

Please refer to the device label and contact electroCore Customer Service to place an order for gammaCore, a refill card kit or electroCore-approved gel.

Requests to return a device, including a non-working device, should be made to electroCore Customer Service.

**Refer to Section 26 for electroCore Customer Service Contact Information.**

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## ADDITIONAL INFORMATION FOR HEALTHCARE PROFESSIONALS

## 20. DETAILED PRODUCT DESCRIPTION

gammaCore Sapphire™ (non-invasive vagus nerve stimulator) is a multi-use, hand-held, rechargeable, portable device consisting of a rechargeable battery, signal-generating and -amplifying electronics, and a control button for the patient to control the signal amplitude. The device provides visible (display) and audible (beep) feedback on the device and stimulation status. A pair of stainless-steel surfaces, which are the skin contact surfaces ("stimulation surfaces"), allow the delivery of a proprietary electrical signal. The patient applies electroCore-approved gel to the stimulation surfaces to maintain an uninterrupted conductive path from the stimulation surfaces to the skin on the neck. Tubes of electroCore-approved gel are provided with each unit and refill kit for this purpose. The stimulation surfaces are capped when not in use.

gammaCore produces a low-voltage electric signal consisting of five 5,000-Hz pulses that are repeated at a rate of 25 Hz. The waveform of the gammaCore pulse is approximately a sine wave with a peak voltage limited to 24 Volts when placed on the skin and a maximum output current of 60mA.



The signal is transmitted through the skin of the neck to vagus nerve. Each stimulation last 2 minutes allowing the patient to properly position the device, adjust the intensity level, and deliver the dose. After 2 minutes, the device automatically stops delivering the stimulation and turns itself off. Each device allows for multiple treatments (refer to Section 13).

gammaCore delivers up to 30 stimulations within a 24-hour period (refer to Section 13). Once the maximum daily number of treatments has been reached, the device will not deliver any more stimulations until the following 24-hour period. A charging case is included to charge gammaCore.

## 21. ADDITIONAL CONTRAINDICATIONS

- Please refer to Section 3 for a complete list of contraindications

## 22. ADDITIONAL WARNINGS AND PRECAUTIONS

	<b>Warnings indicate instructions, which, if not followed, may result in serious injury or death to the device user or to the patient.</b>
	<b>Precautions indicate instructions, which, if not followed, may result in damage to the equipment or degradation in the quality of treatment.</b>



## Warnings

- Please refer to Section 6 for a complete list of Warnings.



## Precautions

- Prior to using or prescribing gammaCore, the HCP should read and understand all instructions and labeling.
- gammaCore is not to be used outside of its intended use. Consider all Warnings and Precautions.
- Please refer to Section 6 for a complete list of Precautions.

### **The HCP must brief the patient on the following items:**

- The HCP must inform the patient using gammaCore to notify him/her of any change in health status. The HCP must re-evaluate the patient's suitability for treatment using gammaCore based on the patient's new health information.
- The HCP should train patients in the proper use of gammaCore, inform them of all potential risks and complications of treatment, and provide accompanying device labeling.

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## 23. CLINICAL STUDIES

- Clinical Study information is available upon request.

## 24. ELECTRICAL CLASSIFICATION

### ❖ Electrical Classification (gammaCore Sapphire™)

- UL 60601-1 Class III; EN 60601-1 Internally Powered Equipment
- Type BF Applied part
- IP22 Protected against ingress of solid foreign objects  $\geq 12.5$  mm diameter and protected against vertically falling water drops when enclosure tilted up to 15°
- Product contains Bluetooth RF transmitter: Frequency range of 2.379 to 2.496 GHz, GFSK Modulation, 1mW max power

### ❖ Electrical Classification (Charging Case)

- UL 60601-1 Class III
- Accessible Part
- IP22 protected against ingress of solid foreign objects  $\geq 12.5$  mm diameter and protected against vertically falling water drops when enclosure tilted up to 15°

## 25. ELECTROMAGNETIC COMPATIBILITY GUIDANCE

Guidance and Manufacturer's Declaration - Electromagnetic Emissions		
gammaCore is intended for use in the electromagnetic environment specified below. The customer or the user of gammaCore should assure that it is used in such an environment.		
Emissions Test	Compliance	Electromagnetic Environment – Guidance
RF emissions CISPR 11	Group 2	gammaCore must emit electromagnetic energy in order to perform its intended function. Nearby electronic equipment may be affected.  gammaCore is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emission IEC 61000-3-3	Complies	

## Recommended Separation Distances between Portable and Mobile RF Communications Equipment and gammaCore

The customer or the user of gammaCore can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and gammaCore, as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter  W	Separation distance according to frequency of transmitter (m)		
	150 kHz to 80 MHz  $d = 0.35\sqrt{P}$	80 MHz to 800 MHz  $d = 0.35\sqrt{P}$	800 MHz to 2.6 GHz  $d = 0.70\sqrt{P}$
0.01	0.04	0.04	0.07
0.1	0.11	0.11	0.22
1	0.35	0.35	0.70
10	1.1	1.1	2.2
100	3.5	3.5	7.0

For transmitters rated at a maximum output power not listed above, the recommended separation distance (d) in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.


NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

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## Guidance and Manufacturer's Declaration - Electromagnetic Immunity

gammaCore is intended for use in the electromagnetic environment specified below.  
The customer or the user of gammaCore should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
			<p>Portable and mobile RF communications equipment should be used no closer to any part of gammaCore than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p><b>Recommended separation distance</b></p>
Conducted RF IEC 61000-4-6	6 Vrms 150 kHz to 80 MHz	6 Vrms	$d = 0.58\sqrt{P}$
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.6 GHz	10 V/m	<p><math>d = 1.2\sqrt{P}</math> 80 MHz to 800 MHz</p> <p><math>d = 2.3\sqrt{P}</math> 800 MHz to 2.5 GHz</p> <p>where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>interference may occur in the vicinity of equipment marked with the following symbol: </p>
<p>NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p>NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, people, and animals.</p>			

<sup>a</sup>Field strengths from fixed transmitters, such as base stations or radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which gammaCore is used exceeds the applicable RF compliance level above, gammaCore should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating gammaCore.

<sup>b</sup>Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

## Guidance and Manufacturer's Declaration - Electromagnetic Immunity

gammaCore is intended for use in the electromagnetic environment specified below.  
The customer or the user of gammaCore should ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD)  IEC 61000-4-2	$\pm 8$ kV contact $\pm 15$ kV air	$\pm 8$ kV contact $\pm 15$ kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst  IEC 61000-4-4	$\pm 2$ kV for power supply lines $\pm 1$ kV for input/output lines	$\pm 2$ kV for AC Mains $\pm 1$ kV Other	Mains power quality should be that of a typical commercial and/or hospital environment.
Surge  IEC 61000-4-5	$\pm 1$ kV for power supply lines $\pm 2$ kV line(s) to earth	$\pm 1$ kV for power supply lines $\pm 2$ kV line(s) to earth	Mains power quality should be that of a typical commercial and/or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines  IEC 61000-4-11	$<5\% U_T$ ( $>95\%$ dip in $U_T$ ) for 0,5 cycles  $40\% U_T$ 60 % dip in $U_T$ ) for 5 cycles  $70\% U_T$ (30% dip in $U_T$ ) for 25 cycles  $<5\% U_T$ (95% dip in $U_T$ ) for 5 cycles	$<5\% U_T$ ( $>95\%$ dip in $U_T$ ) for 0.5 cycles  $40\% U_T$ (60% dip in $U_T$ ) for 5 cycles  $70\% U_T$ (30% dip in $U_T$ ) for 25 cycles  $<5\% U_T$ (95% dip in $U_T$ ) for 5 cycles	Mains power quality should be that of a typical commercial and/or hospital environment. If the user of the product requires continued operation during power mains interruptions, it is recommended that the product be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field  IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: $U_T$ is the a.c. mains voltage prior to application of the test level.			

## 26. CONTACT INFORMATION

### Customer Service:

E-mail: [customerservice@electrocore.com](mailto:customerservice@electrocore.com)  
electroCore, Inc.  
200 Forge Way, Suite 205  
Rockaway, NJ 07866  
United States  
Telephone: 1 (888) 903-2673



### Manufacturer:

E-mail: [customerservice@electrocore.com](mailto:customerservice@electrocore.com)  
electroCore, Inc.  
200 Forge Way, Suite 205  
Rockaway, NJ 07866  
United States  
Telephone: 1 (888) 903-2673

### UK / EU Customer Service

Email: [customerserviceUK@electrocore.com](mailto:customerserviceUK@electrocore.com)  
Telephone: +44 (0) 0800 678 5632

### Product Complaint Reports and/or related issues may be submitted directly to electroCore, Inc.:

Telephone: +1 (973) 355-6708

E-mail: [complaints@electrocore.com](mailto:complaints@electrocore.com)

### EU Authorized Representative:

Medical Device Safety Service (MDSS)  
Schiffgraben 41  
30175 Hannover, Germany  
Telephone No.: +49 511 62628630

**Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.**

CE<sub>2797</sub>

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## **NOTES**

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