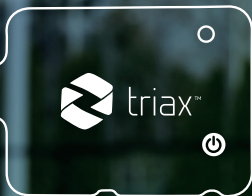


Smart Impact Monitor (SIM) User Manual



SIM-G for Teams & Organizations

www.triaxtec.com

Table of Contents

- ⌘ **Disclaimers, precautionary information and warning**4
- ⌘ **Triax Technologies SIM™ Overview**6
- ⌘ **Getting Started**8
 - Unpacking8
 - Linking a SIM™10
 - Assigning a SIM™ to an athlete11
 - Turning on your SIM™12
 - Activating your SIM™14
 - Wearing your SIM™16
 - Turning off your SIM™18
 - Available accessories & spares19
 - Charging your SIM™20
- ⌘ **General troubleshooting**22
- ⌘ **Product Warranty**24
- ⌘ **Product Returns & Customer Service**24
- ⌘ **Safety Information**25
- ⌘ **Product Specifications**26

Disclaimers, precautionary information and warnings

The SIM-G Monitor is not a medical device. It is an impact monitor only. It is designed to measure and report the magnitude of acceleration resulting from impacts to the human head, expressed in units of G-Force or g's (the acceleration of gravity at the earth's surface). Severe head impacts can cause serious physical injury or concussion, but the data reported by the SIM-G cannot by itself diagnose. SIM-G impact data cannot substitute for medical advice, or for the timely examination of a qualified doctor, healthcare professional or athletic trainer.

Contact sports expose athletes to serious personal injuries including brain damage, paralysis or death.

The human tolerance for sudden intense acceleration to the head and body varies according to many factors. Whether an athlete will sustain a concussion or other head injury from any given impact can

depend upon the precise location of the contact, the angle of the blow, the instantaneous posture of the body at the moment of impact, the athlete's physical condition, and even the athlete's injury history. The SIM-G cannot evaluate all of these factors. In the event that you feel at all abnormal / impaired following a head impact, the most prudent practice would be to immediately remove yourself from activity and seek qualified medical attention, regardless of the reading on your SIM-G monitor.

Symptoms of concussion may appear even though a measured impact falls below the SIM-programmed threshold levels. *Remember, regardless of whether the SIM-G reports a head impact, an athlete can receive a concussion or other head injury at any time during sports-related physical contact.

Symptoms of concussion or other head injury include headache, nausea, dizziness, unstable vision, disorientation, confusion, or simply an individual's sense that he / she "does not feel right" or that something is physically wrong. If you should experience any of these symptoms after suffering a head impact, do not return to play until after you have received consent from a trained medical professional. *It is important to remember that sudden contact to the head in any sport may produce a concussion / head injury which no helmet system can currently prevent and no impact sensing device can currently predict or diagnose.*

For more information, visit our website at www.triaxtec.com.

WARNING: READ YOUR MANUAL! It is critical to follow these instructions regarding the use and maintenance of the device. You are responsible for ensuring that the SIM-G device is functioning properly before and during use. Failure to follow the User Manual instructions may cause the device to fail to perform as designed, which could result in failure to alert you of a significant hit or cumulative impacts.

* The SIM-G device uses a g-force measurement to gauge severity of impact. Our recommended threshold levels have been derived from peer-to-peer approved research reports. For more information on the research studies that SIM-G references, please contact info@triaxtec.com.

SIM™ Overview

Thank you for purchasing the Triax Technologies Smart Impact Monitor, or SIM™.

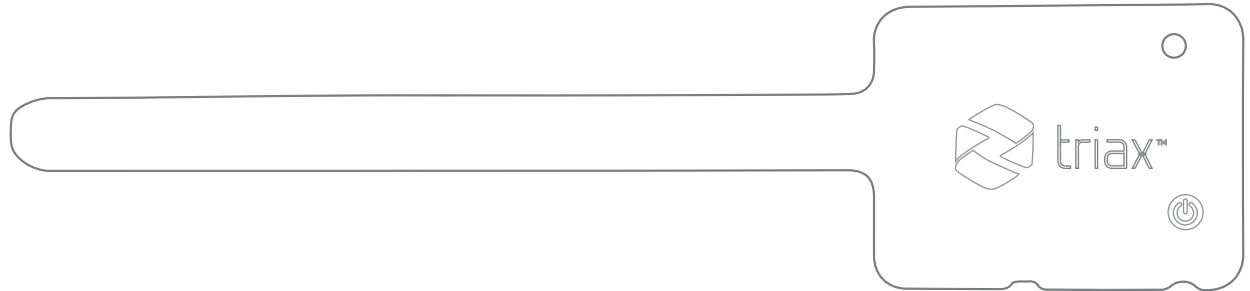
While the long-term effects of head impacts are still being studied, it may be critically important to measure, record and report these events as they happen, and store results for later analysis.

The Triax Technologies SIM™ is a lightweight, highly-sensitive impact-sensing and reporting device, intended for use during sports and related activities.

The SIM™ module may be comfortably worn using either a headband or skullcap style holder. It will record all impacts and accelerations greater than 16 Gs (our pre-programmed set point). All measurements

are transmitted in real time to a nearby base monitoring unit using a low-power wireless link.

More information on this software can be obtained from the www.triaxtec.com website.

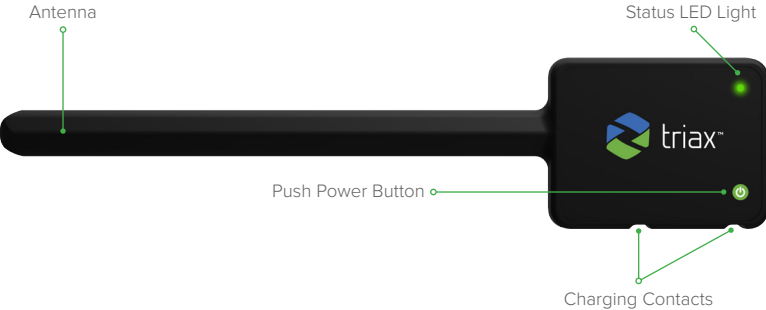


Getting started...

Carefully unpack your SIM™, headband/skullcap, and charging dock.

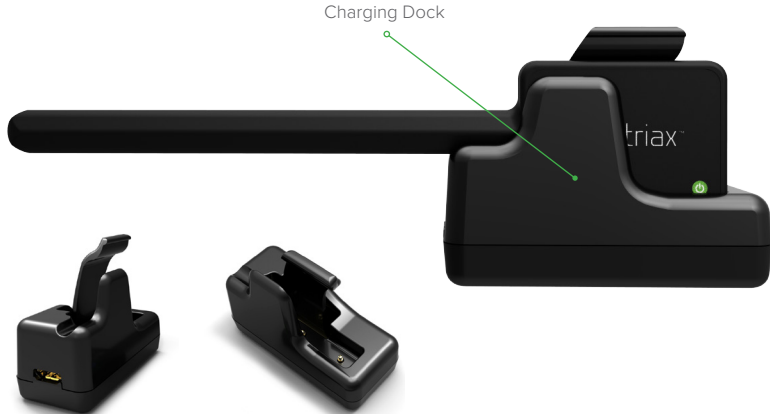
The SIM™ is an environmentally sealed device that is completely waterproof. There is a single LED status indicator (capable of red/green/amber indications) and a single pushbutton. The flexible tail contains the wireless antenna.

Note: The flexible tail is quite rugged, but it should not be considered a “handle”. The SIM™ module should be held by the main body whenever possible.



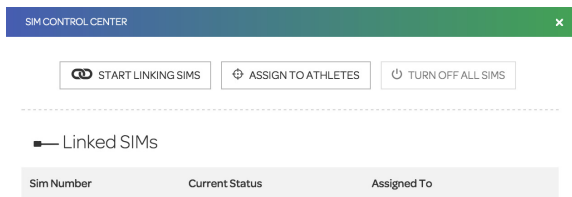
Note: Connecting the Smart Impact Monitoring system differs depending on whether you are using a SKYi, SKYi2 or Access Point. Please refer to the specific, step-by-step instructions included in your deployment kit. These instructions can also be found on our website (triaxtec.com) or via tutorials on our YouTube channel.

Once your base monitoring unit is connected to the Internet, you must 1) Create an organization 2) Add an athlete to your organization 3) Link a SIM and 4) Assign a SIM to an athlete.



Linking a SIM™

1. Open your Field Unit Dashboard, then choose Team
2. Open SIM Control Center, and click “START LINKING SIMS”



3. Press and hold the power button on the SIM until it flashes orange, then release the button.
4. If successful, you should see the SIM Number appear on the list of Linked SIMs.



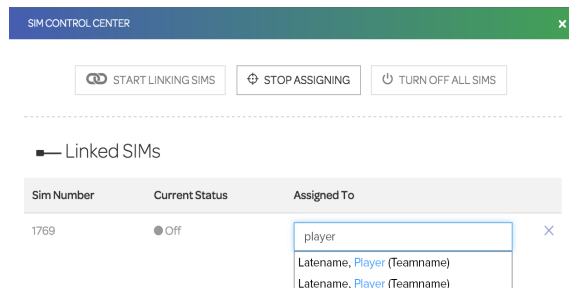
Linked SIMs

Sim Number	Current Status	Assigned To
1769	Off	

5. When you are done, click “STOP LINKING SIMS”.

Assigning a SIM™ to an athlete

1. From the SIM Control Center, click “ASSIGN TO ATHLETES”.
2. Enter the athlete’s name and select the correct profile from the drop down menu



3. When you are done, click “STOP ASSIGNING”.

Turning on your SIM™

Prior to its first use, the SIM™ should be charged for a minimum of 1 hours using **only** the Triax-supplied charging dock.








Press the power button and hold it down until the LED indicator illuminates.



The LED indicator will show the current battery status. Release the button as soon as the LED indicator illuminates.

Note: Once the SIM™ is turned on, it will automatically attempt to communicate with the Triax base station unit. The LED will periodically flash (color as noted below) indicating wireless communications activity. If the button is pressed during normal operation, it will rapidly flash yellow/amber to indicate a button-press.



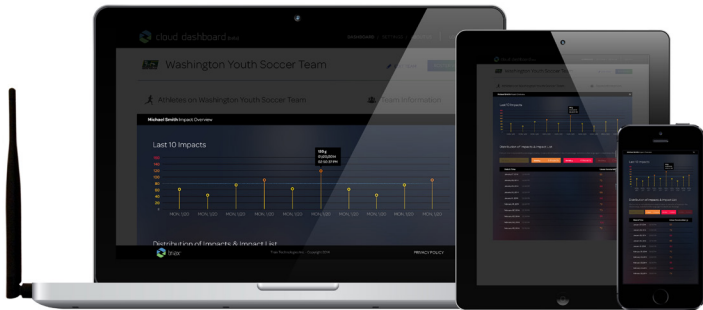
	LED indication	Status
	Solid Green	Battery charge is OK, ready to use.
	Solid Yellow/Amber	Battery charge is low, charge soon.
	Solid Red	Battery charge is very low, charge now.
 x 3	3 Red flashes	Battery is extremely low. SIM has entered battery protection mode. Charge immediately.
 sec.	Solid Red (2 seconds)	The initial self-test detected an internal fault condition, but normal operation is possible. The fault condition will be reported to the SIM™ base station unit the next time the SIM™ links to it.

Activating your SIM™

Once the SIM™ is powered on, it will automatically attempt to establish a link with its access point or SKYi. You can expect a maximum operating range of 150 yards (137 meters). The LED status indicator will periodically flash to indicate wireless communications activity.

Please refer to the SKYi / Access Point operating instructions included in your Triax deployment kit for further assistance. This information can also be found on the Support section of the Triax website.

Please note: The SIM will not register or relay any impact information if it has not been properly linked and recognized by your access point.



Maximum Operating Range:
150 yards (137 meters)



Base Monitoring Station

Wearing your SIM™

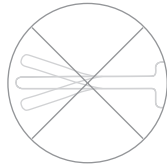
After you have turned on your SIM™, carefully insert it into the pocket built into the headband / skullcap.

Important handling notes:

Use care in handling the flex-tail (antenna). It is rugged, but should not be considered a "handle".



For proper operation and maximum wireless range, the antenna must always be extended – never folded or bent.



The SIM™ is sealed against moisture and perspiration that would occur during typical use. It is NOT designed to withstand a trip through a washing-machine or clothes-dryer cycle, and these activities will invalidate the warranty.



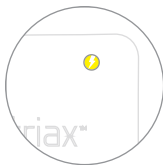
The headband (or skullcap) must be worn correctly to ensure accurate and consistent impact measurements. First, insert the SIM-G into your headband/skullcap antenna-first so that the serial number is facing towards you (i.e. you should be able to see the white sticker). This is so that when the device is being worn on your head, the power button will not accidentally be pushed and turned off during play. It should be worn so that the enclosed SIM™ sensor module is positioned at the back of the head and at the base of the skull, so that green is to the grass, blue is to the sky, as shown below:



Turning off your SIM™



Press and hold the button.



The LED indicator will rapidly flash yellow/amber.



Continue to hold the button until the LED indicator turns red.



Release the button and the SIM will then turn off.

Note: The SIM™ will automatically turn off after 30 minutes of continuous ON time without an impact being recorded to conserve battery power in the event you forget to turn off the device. This does not apply if the SIM device is within range of the base monitoring unit.

Note: The SIM™ can be turned off remotely by a command issued at the base monitoring station. Please remember to turn off your SIMs when you are done recording impact data.

Available accessories & spares



0001
SIM-P headband



0011
SIM-P skullcap, black

Note: For up-to-date colors and sizes, visit www.TriaxTec.com.



1010
SIM™ (single unit, no accessories)



1030
SIM™ 7-up charging dock (kit)



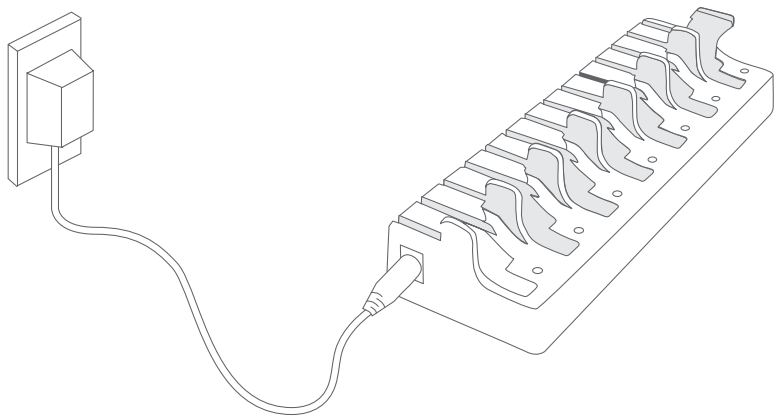
1031
SIM™ 7-up charging dock AC adapter only.

100-240VAC, 50/60Hz input, 5VDC@4A output

Charging your SIM™

The SIM™ must be charged using only Triax-supplied charging docks.

To charge your SIM™, first connect the charging dock to its AC/DC adapter. Then, carefully insert the SIM™ into the charging dock port. Note that the SIM™ will only fit with the charging contacts facing downward into the charging dock:



LED indication	Status
----------------	--------



Flashing
Green

Battery is charged 100%.
SIM™ is ready to use.



Flashing
Yellow/Amber

Battery is charging
normally.



Flashing Red

Battery is not charging
due to an internal fault.
Contact your Triax dealer
for additional assistance.

Note: Once the SIM™ is fully charged (LED = flashing green), simply remove it from the charging dock. It will automatically enter the OFF state.

Note: The SIM™ does not need to be turned off first before charging. The SIM™ will not transmit to the base monitoring station while charging.

Note: It is safe to leave the SIM™ in its charging dock indefinitely. This will not overcharge or harm the internal battery.

It is safe to leave the charging dock connected to its power-source (AC/DC adapter or USB port).

General troubleshooting

Symptoms	Possible Cause	Possible Resolution
SIM™ does not power on.	Battery may be completely dead, or possibly damaged.	Charge the SIM™ in the supplied charging dock for at least 1 hour. If the SIM™ does not power-on, contact your Triax dealer for help.
	Push-button may be damaged internally or moisture may have entered the SIM™.	Contact your Triax dealer for help.
SIM™ does not communicate with base monitoring station.	Battery may need charging.	Charge the SIM™ in the supplied charging dock for at least 1 hour. If the SIM™ does not then power-on, contact your Triax dealer for help.
	SIM™ may not be properly registered with the base monitoring station.	Ask your system administrator, athletic trainer or coach to confirm your SIM™ has been properly registered with the base monitoring station software.
	Flexible antenna may have been damaged by rough handling.	Contact your Triax dealer for help.

Symptoms	Possible Cause	Possible Resolution
SIM™ does not seem to charge completely, or at all.	Improper insertion of the SIM™ into the charging dock.	Remove the SIM™ and ensure you have it oriented correctly. The charging contacts must face downwards into the dock.
	Charging dock is not powered.	Confirm the AC/DC adapter power cable is firmly connected to the dock and that it is plugged into a working AC outlet.
	SIM™ Charging contacts are dirty.	Visually inspect the SIM™'s charging contact. If necessary, gently clean with a cotton-swab. If there is visible corrosion, contact your Triax dealer for help.
Charging dock contacts are dirty.	Visually inspect the charging dock's contact. If necessary, gently clean with a cotton-swab or gently remove any foreign objects. If there is visible corrosion, contact your Triax dealer for help.	

Note: The SIM™ is a sealed device with no user-serviceable parts inside.

Product warranty

The Triax SIM™, Multi-SIM™ charging dock (7-up), and related power-adapters are warranted against defects in quality or workmanship for a period of 1 year from the date of purchase.

Product Returns & Customer Service

Triax has a 30 day satisfaction-guaranteed return policy. If you are dissatisfied with your purchase for any reason, you may receive a full refund within 30 days of the date of purchase.

To return your purchase, please include a copy of your receipt along with your order number. Please ensure that all parts of the product are included in the original packaging and that the device is in good physical condition. We will not accept returns on products that have been mishandled or damaged.

Safety Information

Servicing: Unless otherwise stated in this manual, there are no user-serviceable parts inside the SIM itself. Refer all servicing to Triax service technicians.

Adapters: Use of chargers and power-adapters other than those provided by Triax Technologies, Inc., may result in fire, electric shock, or personal injury.

Disposal: Dispose of your SIM™ according to local regulations for products containing Lithium Polymer batteries.

Product specifications

Smart Impact Monitor (SIM™)

Wireless operating range	Typically up to 150 yards (137m), depending on environmental factors.
Size	Body: 1.04"(26.4mm)W x 1.33"(33.78mm)L x 0.285"(7.24mm)Thk Flex-tail: 0.285"(7.24mm)W x 0.129"(3.28mm)T x 3.3"(84mm) Long
Weight	0.34 oz (9.6 grams)
Enclosure Material	Black polyamide thermoplastic
Battery	Internal Lithium Polymer cell. (Not user serviceable)
Charging Voltage	5VDC @ 100mA maximum. Use approved chargers only. Charge time 1.5 hours max., auto-shutoff.
Run-time	Approximately 1 week between charges, assuming typical usage. Auto shut-off after 30 minutes idle time (i.e. out of range, without recording impacts).

Multi-SIM™ charging dock (7-up)

Input Voltage	USB-1.1, 2.0, 3.0 compliant, 5VDC @ 500mA maximum
Power source	Use Triax-supplied AC/DC adapter only (100-240VAC, 50/60Hz, output rated at 5V@4A)

Headband (all colors)

Style	Thin Mid-width
Care Instructions	Machine wash (cold water preferred to retain elastic qualities). Hang to dry. Do not machine-dry. You MUST remove the SIM from the headband (or skullcap) before washing, or it may damage the SIM and void the warranty.

Skullcap (all colors)

Size	One size fits most
Material	30% cotton, 70% Lycra
Care Instructions	Machine wash cold water preferred to retain elastic qualities. Hang to dry. Do not machine-dry.



Triax Technologies Inc.
66 Fort Point Street
Norwalk, CT 06855 US