

G4

6DOF WIRELESS Electromagnetic Tracker

THE PORTABLE TRACKER THAT FITS IN YOUR POCKET!

With a system electronics unit the size of most mobile phones, G4™ harnesses the powerful performance that only A/C electromagnetic technology offers. Sporting a sleek, compact design, G4 allows for uninhibited movement. It delivers true 6 Degree-Of-Freedom technology, with consistent, high-quality data, without the complications of hybrid technologies.

FEATURES

WIRELESS COMMUNICATION

Position and orientation data is sent wirelessly to the PC via simple Radio Frequency (RF) links

COMPACT SIZE

Hub is lightweight, portable, and can be belt-worn

10+ HOURS OF BATTERY LIFE*

Long-life battery is easily recharged via wall charger or a PC USB port

HIGH SPEED AND ACCURATE

Each individual sensor samples at 120 times per second

SCALABLE

Capable of increasing range and number of people or objects tracked by adding hardware components

AUTO TRACKING RECOGNITION

User-friendly system allows you to set up quickly, turn the system on and start tracking

MULTIPLE OUTPUT FORMATS

Select position in Cartesian coordinates (English or metric); orientation in Euler angles (degrees or radians) or quaternions

ZERO DRIFT

Not an Inertial Measurement Unit (IMU) based system—drift-free, solid state performance

*As with all batteries, capacity (run-time) will diminish over time due to battery age and charging cycles.

APPLICATIONS

G4 paves the way for cutting-edge solutions and advancement in the areas of training and simulation, rehabilitation and physical therapy, biomechanical and sports analysis, and virtual or augmented reality.



THE LIGHTWEIGHT AND PORTABLE G4 HUB

WIRELESS MATTERS

G4 is a wireless data transmitting tracking system—enabling you to move freely, without being bound by cumbersome tether cables. Each G4 hub is capable of accepting up to three sensors, each operating at 120 Hz, and up to eight discrete digital inputs for event triggers. Sensor data calculations are transmitted directly to the PC, providing a seamless stream of drift-free data.

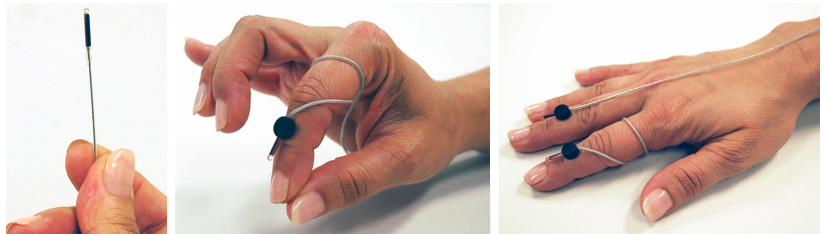
SCALABLE + VERSATILE = LONG-TERM VALUE

G4 allows for full 6DOF solutions over large areas. As your application needs evolve, you can continue to expand G4's capabilities to meet your needs. Each individual hub is capable of tracking up to three sensors. Track additional objects or people by increasing the number of hubs. To increase the range of coverage, simply add additional sources.

OPTIONS

MICRO SENSOR 1.8

Ask about Micro Sensor 1.8™ options for G4



THE STANDARD MICRO SENSOR 1.8, THE MICRO SENSOR 1.8 EXTRA FLEX, BOTH OPTIONS SIDE BY SIDE

POWERTRAK 360

PowerTrak 360™ is an optional accessory for G4. This 3D pointing device is ideal for CAVES and other 3D mouse applications.



POWERTRAK 360, SHOWN WITH THE G4 HUB

COMPONENTS

The standard G4 system includes a System Electronics Unit (hub), one sensor, one source, and one RF/USB module. You can easily expand the system's capabilities by adding additional sensors, sources, and hubs.

SYSTEM ELECTRONICS UNIT (HUB)

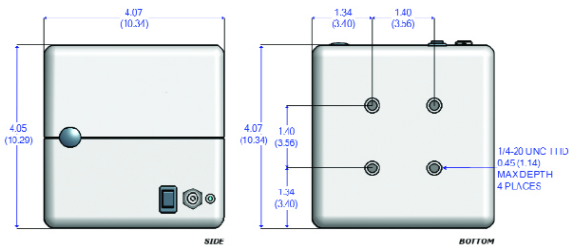
The hub contains embedded hardware and software necessary to compute the position and orientation of each sensor and wirelessly transmit this data to your PC. Approx. 4.2 in (10.6 cm) L x 0.75 in (1.9 cm) W x 2.6 in (6.6 cm) H

WEIGHT

Approx. 4 oz (114 g)

SOURCE

The source is the system's reference frame for sensor measurements and the magnetic field generator. Measurement in inches (cm)



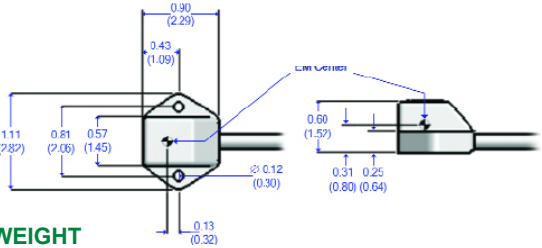
WEIGHT

TX4: 1.60 lb (726 g) Thread size: 1/4" x 20

SENSOR

A lightweight, small cube, the sensor's position and orientation is precisely measured as it is moved.

Measurement in inches (cm)



WEIGHT

0.32 oz (9.1 g)

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40 Hercules Drive • PO Box 560 • Colchester, Vermont 05446-0560
US & Canada: 800.357.4777 • 802.655.3159 • Fax: 802.655.1439

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SPECIFICATIONS

UPDATE RATE

120 Hz per sensor, simultaneous sampling

LATENCY

Less than 10 milliseconds in optimal RF communication conditions

STATIC ACCURACY (WITH RX2)

Range	Orientation	Position
1 meter/3.3 ft	0.50 degrees RMS	0.08 inches/0.20 cm RMS
2 meter/6.5 ft	0.75 degrees RMS	0.25 inches/0.64 cm RMS
3 meter/9.8 ft	1.00 degrees RMS	0.50 inches/1.27 cm RMS

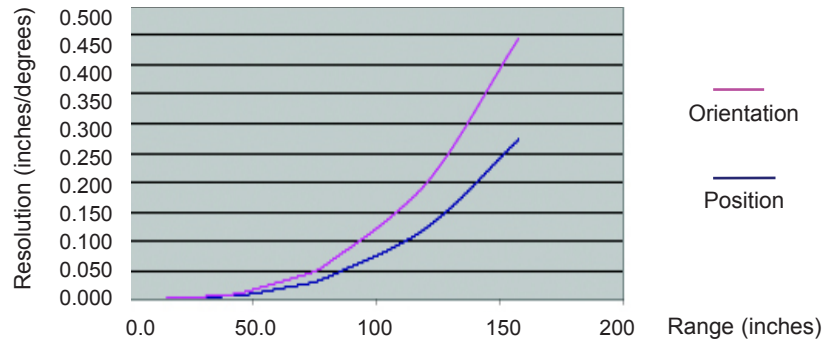
STATIC ACCURACY (WITH MICRO SENSOR 1.8™)

Range	Orientation	Position
1.5 meter/5 ft	0.50 degrees RMS	0.40 inches/1.016 cm RMS

INTERFACE

Proprietary RF link; 2.4 GHz frequency-hopping architecture

RESOLUTION VS. RANGE (WITH RX2)



Range (inches)	Position Resolution (inches)	Orientation Resolution (degrees)
12.0	0.0003	0.0008
24.0	0.0010	0.0020
48.0	0.0080	0.013
96.0	0.0610	0.100

SOFTWARE TOOLS

PiMgr GUI for Microsoft Windows®

GUI for Linux®

Setup and Configuration Utilities for Microsoft Windows® and Linux®

PDI SDK for Microsoft Windows®

C Programming APIs for Microsoft Windows® and Linux®

OPERATING TEMPERATURE

10°C to 40°C at a relative humidity of 10% to 95%, noncondensing

POWER REQUIREMENTS

Source: 5 volt, 1 amp/hub: 5 volt, 500 ma/RF dongle: 5 volt, 30 ma
Internal battery, rechargeable via USB or included power supply

REGULATORY

FCC Part 15, Class B

EN61326-1: 2006 Emissions

EN61326-1: 2006 Immunity

2.4 GHz Radio Approval:

FCC Part 15

EN 301489-1 V1.8:2008 Emissions

IC RSS 210

EN 301489-3 V.1:2002 Immunity

*Large metallic objects, such as desks or cabinets, located near the source or sensor, may adversely affect the performance of the system.