

# VIPER™

CUSTOMIZABLE, REAL-TIME TRACKING. REDEFINED.

VIPER™ is the fastest and most customizable electromagnetic tracker available. With a sleek, small SEU size, update rates up to 960Hz, and latency as low as one millisecond, VIPER offers scaled-up capability in a scaled-down package. With added FTT® (Fly True Technology), VIPER delivers what you need, when you need it.



## HOW IT WORKS

The VIPER tracking system uses a source that emits an electromagnetic field. Finely tuned sensors within the field of range are tracked in full 6DOF, measuring both position and orientation at sub-millimeter accuracy. VIPER is a portable system that's easy to set up. Due to the nature of the technology, there is no need for a line-of-sight for continuous tracking. VIPER tracks people and objects through clothes, gloves, and walls, and does not require any special lighting conditions.

## CUSTOMIZABLE AND SCALABLE

VIPER is not one size fits all; it's a fully customizable tracking system. It's easy to "build" a system tailored to your specific needs. And the user-friendly SDK allows you to start tracking right away.

1. Select your SEU Size
2. Select a Sensor or Multiple Sensors
3. Select a Source or Multiple Sources

## FEATURES




- ✓ Up to 960Hz Update Rate
- ✓ 1 Millisecond Latency (960Hz model)
- ✓ Up to 16 Sensors / 4 Sources
- ✓ VIPER FT Sensors
- ✓ Real-Time Distortion Mitigation
- ✓ No Line-of-Sight Occlusions
- ✓ Fully Embeddable Sensors
- ✓ Zero Drift

## OPTIONS



# COMPONENTS

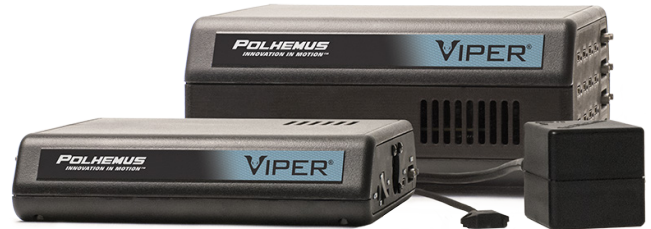
The VIPER™ system allows you to select from three different Systems Electronics Units. Then choose one or more sensors (up to 16), and one or more sources (up to 4 per SEU) to complete your system. There are multiple sensor options, with varying size, shape, and capabilities. Select one type, or mix and match sensors, based on your needs. Choose from three different sources.

<p><b>SYSTEM ELECTRONICS UNIT</b> Contains the hardware and software necessary to generate and sense the magnetic fields, compute position and orientation, and interface with the host computer via RS-422 or USB.</p> 	<p><b>SENSOR</b> The sensor's position and orientation is precisely measured as it is moved. Up to 16 sensors can be tracked simultaneously. All sensors connect to the SEU.</p> 	<p><b>SOURCE</b> The source generates the magnetic field in which the sensor is tracked. Up to 4 sources can be connected, increasing tracking range or providing multiple points of origin. All sources connect to the SEU.</p> 
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## SPECIFICATIONS

<b>UPDATE RATE</b>	240Hz per sensor max (VIPER 4) 960Hz per sensor max (VIPER 8/16)
<b>INTERFACE</b>	USB; RS-422, both standard; dual output available
<b>LATENCY</b>	1ms at 960Hz/ 2ms at 480Hz/ 3ms at 240Hz
<b>STATIC ACCURACY</b>	0.015 in (0.38mm) RMS for X, Y, Z position; 0.10° RMS orientation* for FT-Standard sensor and TX2, TX4, & HR sources  0.02 in (0.50mm) RMS for X, Y, Z position; 0.15 degrees RMS orientation* for FT-Standard sensor and TX1 source  <i>Specified accuracy within 30 in (76 cm) radius from Source (using FT-Standard Sensor), smaller sensors and/or TX1 source may reduce specified accuracy range</i>
<b>RESOLUTION</b>	0.00004 in (0.0010 mm) at 12 in (30 cm) range; 0.0003° orientation (FT Standard Sensor and TX2 Source)
<b>RANGE</b>	Useful operation up to 72 in (182 cm) and beyond** Smaller sensors may reduce specified or useful range slightly
<b>SYNC INPUT/ OUTPUT</b>	Sync signal can be used as input or output to sync to or from another device
<b>OPERATING TEMPERATURE</b>	10° to 40°C
<b>POWER REQUIREMENTS</b>	5 Volts DC @ 5.5 Amps direct or 24 Volts DC @ 1.3A via external DC-DC converter 32 Watts
<b>PREDICTION</b>	User adjustable position & orientation prediction built-in
<b>SOFTWARE TOOLS</b>	GUI and SDK included Microsoft Windows® 10 and forward Unity: Sample open source code included Linux: Sample open source code included
<b>REGULATORY</b>	EMC/EMI: IEC 60601-1-2 Medical Electrical Equipment, Edition 4.0 Electrical Safety Approvals: IEC 60601-1 Medical Electrical Equipment, Edition 3.1

*VIPER 4/8 and VIPER 16 System Electronics Units. Small, TX2 Source and high-performing VIPER FT Standard Sensor, offering special FTT capabilities.*



\*Some metallic objects, such as desks or cabinets, located near the source or sensor, may adversely affect the performance of the system. Accuracy specified in a magnetically clean environment with FTT® off. FTT real-time magnetic distortion mitigation may help restore performance to your satisfaction.

\*\*Tracking range out to 72 inches and beyond using FT-Standard Sensor and HR, TX2 or TX4 Source; multiple Sources increase range capability.

## GET IN TOUCH

Our technology powers applications in a wide variety of markets, catering to healthcare, military, and countless other areas.

Talk with our Motion Tracking Experts™ today.

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**POLHEMUS**  
INNOVATION IN MOTION™

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