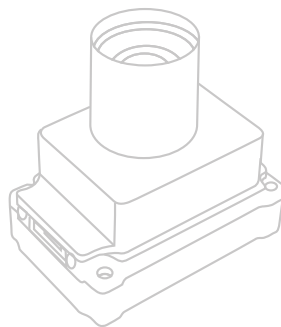




IS-1200 VisTracker

Wide area inertial-optical motion tracking system

Mobile augmented reality applications can rise to a higher level of capability with the new IS-1200 VisTracker wide area inertial-optical motion tracking system. Designed to be completely autonomous, you can now track an object or person over building-sized areas on your mobile computing platform with the precision required for mixed and augmented reality systems.



Total Mobility

Small package and low power consumption bring you extended mobility, energy savings, and battery life. Our unique passive tracking reference patterns (fiducials) enable you virtually unlimited tracking area, from single room tracking to multiple room or building-wide tracking. The power and interface for the VisTracker comes from the USB port of your mobile computing platform so now you do not need an extra power supply.

Unprecedented Performance

New advanced sensor fusion algorithms, plus the embedded Blackfin DSP, tackle the task of accurate and robust tracking. This allows your mobile platform to track motions that ordinary optical systems can not track.

Simplicity

The VisTracker makes your life a little simpler. We give you a factory calibrated unit and a simple installation procedure for a one time initial registration. You need no additional calibration during operation. Furthermore, you can now operate over a wide range of natural lighting conditions and volumes.

Ruggedness and Reliability

The VisTracker can withstand the rigors of wide range of challenging mobile environments. Designed for industrial conditions, our tough yet precise machined aluminum packaging seals out surrounding contaminants and protects the precision optics and electronics.

New InertiaCam Inside

The heart of the VisTracker system is our new high resolution optical-inertial sensor that allows you to track greater distances with smaller and fewer fiducials. The new streamlined design combines the inertial sensor, camera components, and image processing all in one small precision industrial package.

What's in the VisTracker System

- One InertiaCam
- Software to generate position referencing fiducials
- InterSense Sensor Fusion Server (SFServer) Software for a Windows Host PC
- The InterSense SDK
- Optional: RS-232 or RS-422 with external 6V power supply

VisTracker Performance Specifications

Degrees of Freedom	6 (Yaw, Pitch, Roll, X, Y, and Z)
Maximum Angular Rate	1000° per second
Maximum Linear Acceleration	4.0 G
Orientation Accuracy	1.0° RMS
Position Accuracy	2 - 5 mm RMS, factory conditions*
Latency (RS-232 and RS-422 interface)	1 - 2 ms (with prediction off)
Latency (USB interface)	5 - 8 ms (with prediction off)
Prediction	Adjustable 0 to 50 milliseconds
Lens Field of View (FOV)	85°
Max Tracking Range	20 times the fiducial diameter
Minimum Fiducials for Tracking	2 in FOV
Update Rate	180 Hz

*Specifications are determined in a controlled and quantified environment; actual performance will vary due to factors such as distance from fiducials, density, and the accuracy with which fiducial locations can be calibrated.

InertiaCam Specifications

InertiaCam Interface	RS-422 with RS-232 or USB adaptor
Inertial Sensing Core	6-axis MEMS inertial measurement unit
Image Sensor	1280 x 1024 CMOS monochrome
Compute Core	500 MHz Blackfin DSP
Position Referencing System	User-printed paper fiducials (with supplied SW), or custom active, passive or natural marker types (inquire)
Resolution	1280 x 1024
Size	47.7 mm x 29.4 mm x 25.8 mm, excluding lens
Weight	58 grams
Power	1.7 W @ 6 V DC
Max Cable Length	60 m (200 ft.)

SFServer Specifications

System Requirements	800 MHz PIII-class or better
Host O/S Compatibility	Windows XP Professional
Typical CPU load	1 - 3% on 2.8 GHz PC
Genlock Modes	Free Run, automatic (cable free synchronization to host display), Internal, External
Tracking Data Outputs	Shared memory, internal or external Ethernet (TCP or UDP broadcast), and serial – compatible with all InterSense-enabled applications through the InterSense API

Additional Software Utilities

Test & Configuration Programs	ISDemo, InertiaCamTest, FiducialPrint
InterSense SDK	Example source code, Include files and library support for Windows (.dll) and Linux (.so)

Tracking Area Options

The IS-1200 VisTracker can support over 30,000 fiducials, giving full building tracking coverage.

Please visit the InterSense website for up to date specifications @ www.intersense.com

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