Track Objects with Magnetic DC Technology

➤ Fast, dynamic tracking – as many as 420 updates per second.
➤ Miniaturized passive sensors – outputs immune to “power-line” noise sources.
➤ Compact packaging – electronics conveniently fit into drive bay of your PC.
➤ All attitude tracking – no inertial drift or optical interference.
➤ High metal immunity – no distortion from non-magnetic metals.
3D Guidance driveBAY™

**Technical**

**Sensor Configurations**
- Model 55 (0.56 mm), Model 90 (0.9 mm), Model 130 (1.5 mm), Model 180 (2.0 mm), Model 800 (8.0 mm)
- Degrees of Freedom: 6 (Position and Orientation)
- Update Rate: Up to 420 updates/second for each sensor (Default: 240 updates/second)

**Translation Range**
- **MODEL 55 SENSOR**
  - Mid-Range Transmitter: 25 cm (10.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 90 SENSOR**
  - Mid-Range Transmitter: 36 cm (14.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 130 SENSOR**
  - Mid-Range Transmitter: 46 cm (18.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 180 SENSOR**
  - Mid-Range Transmitter: 58 cm (23.0 inches)
  - Short-Range Transmitter: Contact Ascension
- **MODEL 800 SENSOR**
  - Mid-Range Transmitter: 78 cm (31.0 inches)
  - Short-Range Transmitter: Contact Ascension

**Angular Range**
- All Attitude: ± 180° Azimuth & Roll, ± 90° Elevation

**Static Accuracy**
- Position: 0.5 mm (0.02 inch) at 30.5 cm (12.0 inches)
- Orientation: 0.5° RMS

**Static Resolution**
- Position: 1.4 mm (0.055 inch)
- Orientation: 0.1° at 30.5 cm (12.0 inches)

**Outputs**
- X, Y, Z positional coordinates, orientation angles, orientation matrix or quaternions

**Interface**
- USB 2.0

**Data Format**
- Binary data records

**Communication**
- Windows API and Drivers

**Physical**

**Electronics Unit**
- 20.0 cm (7.9 inches) x 14.7 cm (5.8 inches) x 4.1 cm (1.6 inches) metal box fitting into a 13.3 cm (5.25 inches) PC drive bay

**Transmitters**
- Mid-Range: 9.6 cm (3.8 inches) cube
  - Short-Range: Contact Ascension
- Short-Range: 5.3 cm (2.1 inches) x 5.3 cm (2.1 inches) x 6.9 cm (2.7 inches) cable

**Passive Sensors**
- Model 55: 0.56 mm (0.02 inch) x 80 mm (3.2 inches)
  - to 210 mm (8.27 inches) for biopsy needle configurations only, with 2.3 m (7.5 ft.) cable
- Model 90: 0.9 mm (0.04 inch) x 7.25 mm (0.29 inch)
  - with 3.3 m (10.9 ft.) cable
- Model 130: 1.5 mm (0.05 inch) x 7.7 mm (0.30 inch)
  - with 3.3 m (10.9 ft.) cable
- Model 180: 2.0 mm (0.07 inch) x 9.9 mm (0.38 inch)
  - with 3.3 m (10.9 ft.) cable
- Model 800: 8.0 mm (0.31 inch) x 20.0 mm (0.78 inch)
  - with 3.3 m (10.9 ft.) cable

**Power**
- Model 55, 90, 130 & 180 only:
  - Ascension Medi-Mag Cable, USP class 6 jacket material.
  - USP class 6 sensor housing.

**Operating Temperature**
- 4°C (such as aluminum) to zero by adjusting measurement rate.

**Advanced new magnetic technology and signal processing**
- Improved dynamic performance over longer ranges.
- *Power-line* noise filtered out.

**Oclusion and drift free**
- Clear line-of-sight between transmitter and sensor(s) is not required.

**Body mountable transmitter**
- New lightweight coil set can be mounted on head or body.

**Onboard diagnostics**
- Self-diagnostics and run-time monitoring for improved tracker reliability and safety.

**Software support**
- USB tracker control API for XP/Pro, XP, Vista, Window 7, 32 & 64 bit, Sample programs.

**F E A T U R E**

**Metal tolerant**
- Outputs unaffected by composite materials. Capable of driving errors induced by highly conductive metals such as aluminum.

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Tracker electronics fit into the drive bay of a PC chassis and uses its power. No additional power supply required.

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**Regulatory Certifications**
- Class I Medical Device with Type B Applied Part (Sensors).
- RoHS and WEEE compliant.
- Medical users must comply with all pertinent FDA/CE/IRB certifications prior to using this device in human patients.

**Note on Accuracy**

Accuracy is defined as the root mean square (RMS) deviation of a true measurement of the magnetic center of a single sensor with respect to the magnetic center of a single transmitter measured over the specified translation range. Accuracy varies from one location to another over this range and will be degraded if there are interfering electromagnetic noise sources or metal in the operating environment, which have not been identified and minimized.