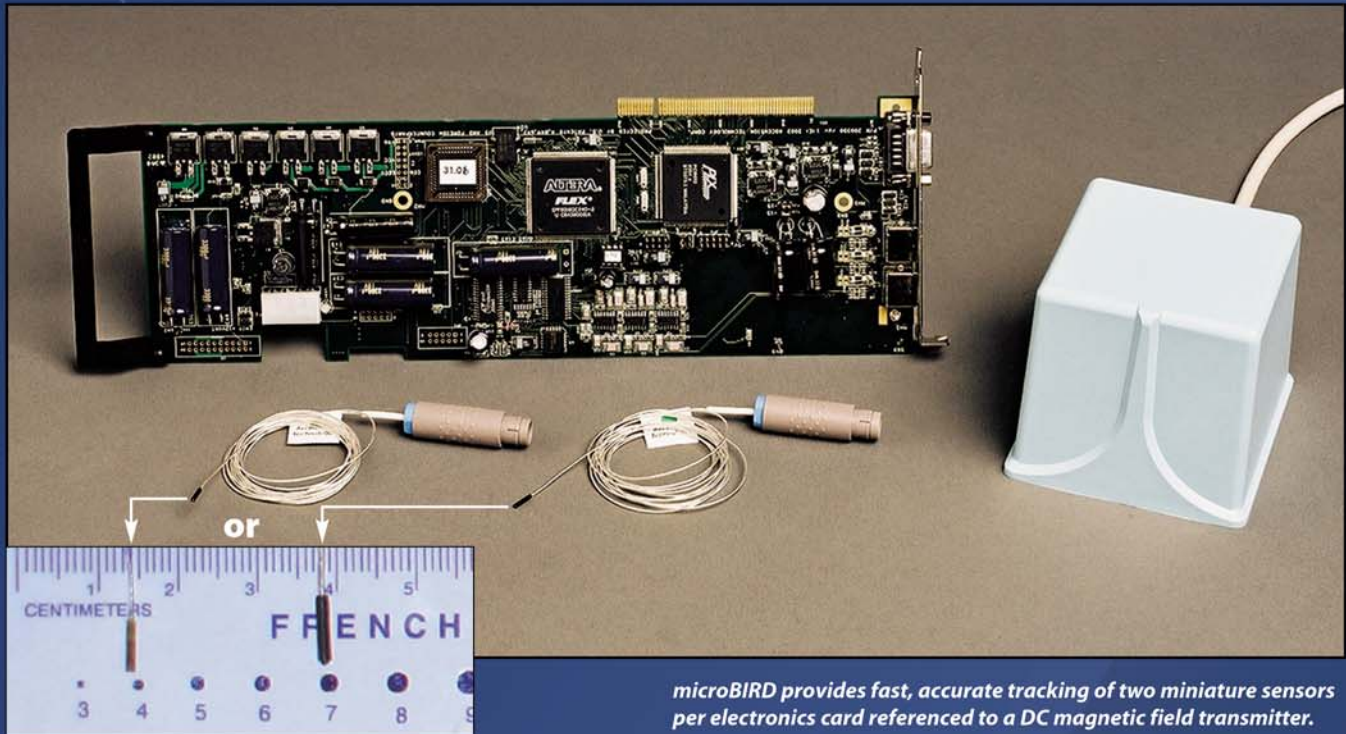


# microBIRD™

6DOF Tracking  
No Line-of-Sight Restrictions



Track up to two 1.3 mm or 1.8 mm sensors per electronics card

microBIRD provides fast, accurate tracking of two miniature sensors per electronics card referenced to a DC magnetic field transmitter.

## Miniaturized DC Magnetic Sensors for Intra-body Navigation and Localization

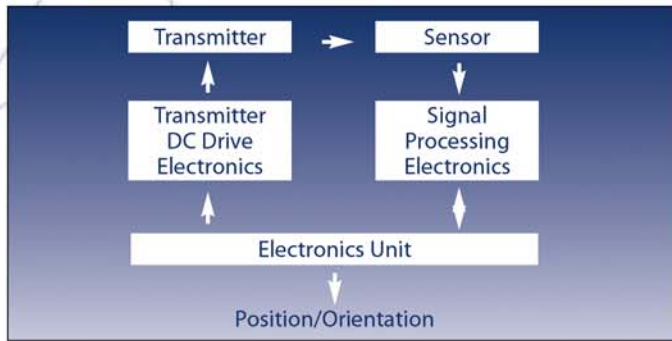
- Measure position and orientation of instruments in real-time
- Locate tips of instruments in 3D space
- Guide flexible tools internally to anatomical targets
- Control catheters in computer-assisted procedures

Precise. Conductive Metal Tolerant. Non-Ionizing.

 **Ascension**  
Technology Corporation

# microBIRD™

## 6DOF Tracking No Line-of-Sight Restrictions



microBIRD Block Diagram

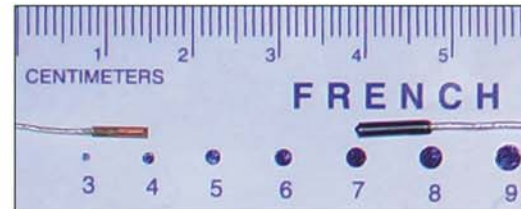
TECHNICAL	
	<ul style="list-style-type: none"> <li>■ microBIRD model 180 (1.8 mm sensors)</li> <li>■ microBIRD model 130 (1.3 mm sensors)</li> </ul>
Degrees of Freedom:	6 (Position and Orientation)
Translation Range:	± 58 cm in any direction
Angular Range:	All Attitude: ± 180° Azimuth & Roll; ±90° Elevation
Static Accuracy*:	Position: 1.4 mm RMS Orientation: 0.5° RMS angular
Static Resolution:	Position: 0.5 mm @ 30.5 cm Orientation: 0.1° @ 30.5 cm
Update Rate:	Up to 90 measurements/second
Outputs:	X, Y, Z positional coordinates, orientation angle, or orientation matrix
Interface:	PCI v.2.1 compliant 5V. Requires disc drive power connector to meet power needs
Data Format:	Binary data records
Communication:	Ascension supplied Windows API
PHYSICAL	
Transmitter:	Contact us for available options
Sensor Specifications:	<ul style="list-style-type: none"> <li>■ Model 130: Max OD 1.3 mm; length 6.5 mm with 0.6 mm OD cable, 1.8 m in length</li> <li>■ Model 180: Max OD 1.8 mm; length 8.4 mm with 0.9 mm OD cable, 1.8 m in length</li> <li>■ Ascension Medi-Mag Cable, USP class 6 jacket material or vinyl encapsulated cable</li> <li>■ USP class 6 epoxy sensor housing</li> <li>■ USP 6 polyester protective wrap (bare sensor only)</li> <li>■ Maximum temperature 150° C</li> <li>■ Sensor assembly and cable materials are EtO, gamma and cold sterilant tolerant.</li> <li>■ Semiconductor devices in connector are not gamma shielded and may be damaged or erased if exposed to gamma radiation</li> </ul>
PCI Card:	Standard full-length board (312 mm x 107 mm), 5V
Power:	+12V at 1.85 amps nominal standard transmitter, 2.5A max +5V, 2A nominal
Operating Temperature:	15° C to 35° C; 95% non-condensing humidity
Environment:	Metal objects and stray magnetic fields in the operation volume may degrade performance. Contact us for assistance in using our "Optimizing Tools" to minimize metallic distortion and noise interference
Warm-up:	System requires 5-minute warm-up for full accuracy

\*Accuracy verified for each sensor size (using mid-range transmitter) as follows:

- Model 130: 20 cm min to 36 cm max X, ± 15 cm Y, Z
- Model 180: 20 cm min to 51 cm max X, ± 23 cm Y, ± 15 cm Z

### Applications for a medically-certified microBIRD:

- Intra-body navigation and 3D guidance
- Computer-assisted procedures
- RF ablation
- Image-guided intervention and therapies
- Robotically-controlled surgery
- 3D Ultrasound
- Electrophysiology
- Brachytherapy
- Telerobotics and telesurgery
- Biomechanical measurement and analysis



microBIRD 1.3 mm and 1.8 mm sensors shown on French Catheter Scale

FEATURES	BENEFITS
Metal tolerant	No distortion in presence of medical grade metals such as 300-series stainless steel and titanium. Capable of driving errors induced by highly conductive metals (such as aluminum) to zero by using microBIRD Optimization Tools.
Advanced new magnetic technology	3rd generation developments overcome environmental limitations of earlier AC and DC tracking technologies.
Low cost sensors	Designed for disposability in volume applications.
No occlusions	Accuracy of measurements unaffected by insertion of sensors in human body.

### Regulatory Certifications

microBIRD is a commercial tracking product; not designed for human use in medical applications. For medical applications, researchers and/or medical device manufacturers must comply with all pertinent FDA and international regulatory standards.

### Notes on Accuracy

Accuracy is defined as the root mean squared (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 translation range and will be degraded if there are interfering electromagnetic noise sources or metal in the operating environment are not identified and minimized using microBIRD optimization tools.



Call: 800-321-6596

Outside N. America: 802-893-6657

Visit our web site at: [www.ascension-tech.com](http://www.ascension-tech.com)

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