

miniBIRD[®]

- Model 800
- Model 500

Miniaturized Sensors Real-time Tracking



miniBIRD sensors are now available in two models — 8mm and 5mm — increasing the possibilities for highly accurate internal space and movement tracking.



Model 800 — 8mm sensor



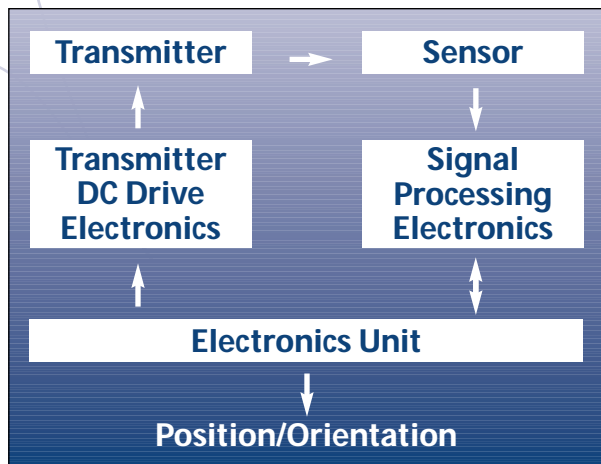
Model 500 — 5mm sensor

Magnetic tracking with amazingly small sensors!

- **Position and orientation measurements** — of miniaturized sensors for instantaneous tracking of probes, scopes and instruments.
- **Unrestricted range of motion** — without occlusion; sensors fully tracked both outside and inside the body.
- **Proven clinical application** — in image-guided procedures, navigation and instrument localization.
- **DC magnetic tracking** — for use in the presence of scanheads and scopes as well as non-magnetic instrumentation.

Accurate. Unobtrusive. Non-radiating.

 **Ascension**
Technology Corporation



miniBIRD Block Diagram

Applications

- 3D ultrasound reconstruction
- Measurement of anatomical structure and function
- Instrument tracking and placement
- Laparoscope, endoscope, microscope tracking
- Placement of biopsy needles and biomedical devices
- Intrabody navigation, localization and guidance
- Real-time simulation and visualization
- Biomechanical monitoring and analysis

Features	Benefits
Miniaturized Sensors	Excellent for internal measurements.
Pulsed DC magnetic technology	Minimal sensitivity to metal. (Medical grade stainless steel does not effect tracker.)
6 degrees-of-freedom	Unrestricted range of motion.
1-4 sensor with dedicated processors	Simultaneous tracking of multiple sensors with highest measurement rates.

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 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.

Regulatory Certifications

- FCC Part 15, Class A
- CE: EN 50081-1, Class A
EN 50082-1, Class 2
EN 61010-1



Specifications

TECHNICAL (miniBIRD 500 & 800 unless otherwise noted.)

Degrees of Freedom:	6 (Position and Orientation)
Translation Range:	Model 800: ±76.2 cm in any direction Model 500: ±45.7 cm in any direction
Angular Range:	All attitude: (±180° Azimuth & Roll, ± 90° Elevation)
Static Accuracy:	Position: 0.07" (1.8mm) RMS Orientation: 0.5° RMS
Static Resolution:	Position: (0.5mm) Orientation: 0.1° @ 30.5cm
Update Rate:	Up to 120 measurements/sec.
Outputs:	X, Y, Z positional coordinates and orientation angles or rotation matrix
Interface:	RS-232 with selectable baud rates to 115,200
Data Format:	Binary
Modes:	Point or Stream

PHYSICAL

Transmitter:	9.6cm cube with 3 m cable
Sensor:	Model 800: 18 mm x 8 mm x 8 mm Model 500: 10 mm x 5 mm x 5 mm
Electronics Unit:	24cm x 29cm x 6.6cm
Power:	External plug-in: US/European version
Operating Temperature:	10°C to 40°C (50°F to 104°F)
Operating Humidity:	10% to 90% non-condensing