

MotionSTAR Wireless LITE™

Long Range, DC Magnetic Tracking System



IMAGE COURTESY RAY KURZWEIL

Instantly Capture Human Motions without Occlusion, Drift or Linkages



IMAGE COURTESY INNOVATIVE SPORTS AND TRAINING

- ▶ **Six degrees-of-freedom measurements** – each sensor tracks position & orientation for objective quantification of movement.
- ▶ **Real-time 3D motion capture** – precisely measure movement of up to five people (100 sensors) simultaneously.
- ▶ **No data loss** – outputs never blocked by bodies, tools, or props.
- ▶ **Environmental toolkit** – pre-installation equipment available to optimize magnetic tracking in your workspace.



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UNBEATABLE PRICE, PERFORMANCE, SUPPORT

MotionSTAR Wireless LITE

Technical

Degrees of Freedom	6 (Position and Orientation)
Max. Number of Sensors	100 (20 per performer) plus 2 serial interface inputs for user devices
Translation Range	±10 ft. in any direction, 2 transmitters max.
Angular Range	All Attitude: ± 180° Azimuth & Roll, ± 90° Elevation
Static Accuracy Position	0.3 in. RMS at 5 ft. range, 0.6 in. RMS at 10 ft. range
Static Accuracy Orientation	0.5° RMS at 5 ft. range, 1.0° RMS at 10 ft. range
Static Resolution Position	0.03 in. at 5 ft. range, 0.10 in. at 10 ft. range
Static Resolution Orientation	0.1° at 5 ft. range, 0.2° at 10 ft. range
Update Rate	Up to 100 measurements/second
Outputs	X, Y, Z position and orientation angles, rotation matrix, or quaternions
Interface	Ethernet, RS-232
Line of Sight Restrictions	None
Metallic Distortion	Always keep transmitter & sensors away from floor, walls & ceiling if metal present.

Physical

Performer Mounted Components —

Sensors	1.0 in. x 1.0 in. x 0.8 in. (l x w x h) (attached via wires to electronics unit in backpack) Weight: 0.6 oz. per sensor without cable
Backpack	6.9 in. x 5.5 in. x 2.0 in. (l x w x h) Weight: 35 oz.
Battery	5.9 in. x 2.6 in. x 0.9 in. (l x w x h) Weight: 19 oz.
Operating Time	Up to 2 hrs. continuous

Base Station Components —

PC Chassis	18 in. x 19 in. x 10 in. (l x w x h) Weight: 22 lbs.
Remote Sensor Unit	6.5 in. x 4.2 in. x 2.5 in. (l x w x h) Weight: 0.7 lbs.
Extended Range Controller	9.5 in. x 11.5 in. x 4.8 in. (l x w x h) Weight: 6.5 lbs.
Extended Range Transmitter	12 in. x 12 in. x 12 in. (l x w x h) Weight: 45 lbs.

Environment

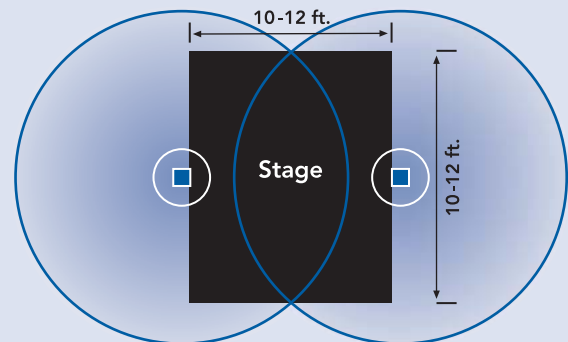
Toolkit	Metal objects and stray magnetic field in the operation volume will degrade performance. Use our Environmental Analyzer tool kit to find the optimal location for installation and to minimize metal and noise interference.
Wired Communication Cable	30 ft. cable that enables LITE to operate in a non-wireless mode.



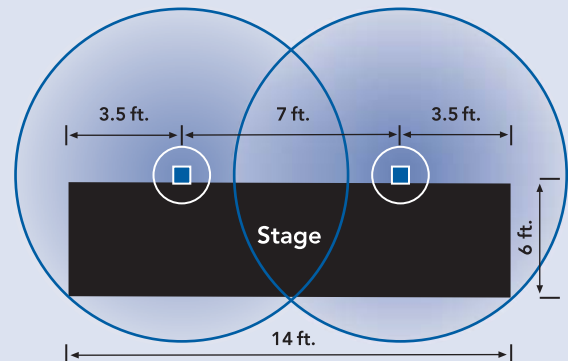
LITE system components: PC base station (left), extended range transmitter and controller (rear right), performer mounted electronics pack with sensors and RF transmitter (right foreground).

Set-Up Options

Two Transmitters Facing Each Other



Two Transmitters Side by Side



One or more untethered LITE users are free to move anywhere on a motion capture stage with dimensions as shown above. Sensors are attached to users with straps or a cybersuit. LITE instantly captures motions and wirelessly sends data to its base station for processing and high speed transmission to your host computer.

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