
SpacePad®

Ascension's low-cost motion-tracker for virtual applications

SpacePad brings low-cost magnetic tracking to virtual reality game developers and designers of interactive experiences.

Use ***SpacePad*** to instantaneously determine the position and orientation of one or more lightweight sensors attached to a person experiencing virtual reality. Its outputs furnish the motion cues needed to interact in real time with your virtual world.

SpacePad smashes the existing price-per-sensor barrier. You can now buy a robust four-sensor tracker for less than the price of any competitive tracking product.

SpacePad takes its name from the design of its unique magnetic-field transmitting antenna. The antenna is completely flat. It consists of a loop of wire locatable in a pad near the user. Antenna size and placement are user-adjustable. ***SpacePad*** lets you create virtual environments ranging in size from a few cubic feet to thousands of cubic feet.

You will find ***SpacePad*** perfectly suited for VR games in location-based entertainment and arcade settings. It lets you, for the first time, locate your own transmitter loops in the base of a game pod, configure loops between adjacent pods, embed loops in a sit-down module, or even on a wall to create a virtual room. Loops may also be configured to

accommodate multiple users in virtual rides.

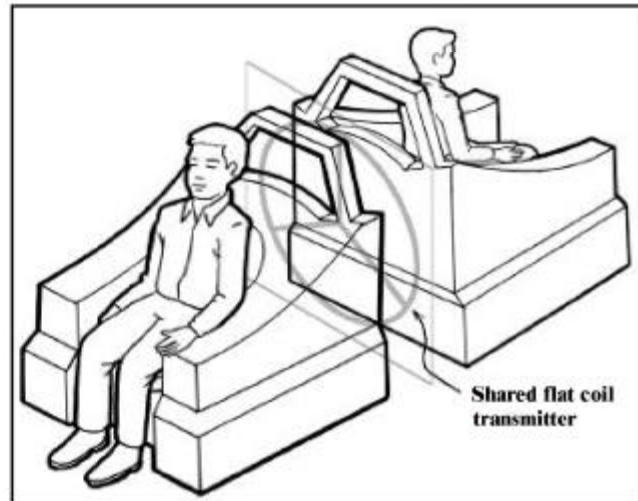
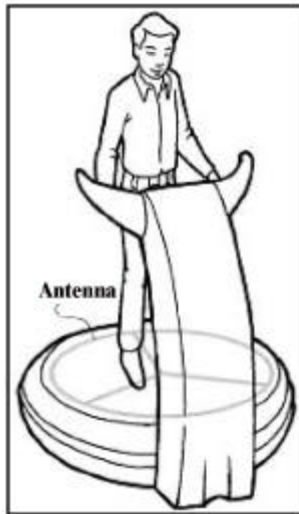
SpacePad's single electronics card is capable of simultaneously controlling two transmitters and up to four sensors. Since the transmitter is just a piece of wire, you provide it yourself once we configure it for your application. ***SpacePad*** eliminates your recurring transmitter costs. The electronics card is compatible with PCs and all other computers with an ISA-bus slot. Additional ***SpacePads*** may be used in close proximity to one another without interference.

We'll work with your engineering team to customize it for your game pod or VR application. We'll integrate ***SpacePad*** hardware and software into your product for you or if you'd rather do the integration yourself, we'll send you a free evaluation model.

SpacePad -- the breakthrough tracker -- destined to make a difference in your virtual world.

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Shown below are two of many transmitter-antenna configurations available with SpacePad. The transmitter's flexible design lets you match its shape to your needs and eliminate recurring cost.



SPECIFICATIONS

Performance

■ Translational range:	Configuration dependent
■ Angular range:	Unlimited: $\pm 180^\circ$ in azimuth & roll; $\pm 90^\circ$ in elevation
■ Update rate:	120/second for one sensor; 60/ second for each of two; 30 per second for each of four
■ Outputs:	X, Y, Z position, Euler angles, rotation matrix or quaternions
■ Interface:	ISA bus on PC-compatible card version
■ Software:	Sample source code in C provided.
■ Electrical noise interference:	Operating frequency is changeable under software control to reduce interference from CRTs and other noise sources.
■ Proximity to other SpacePads:	Up to eight transmitters may operate near one another (contact Ascension for assistance and set-up instructions).
■ Stand-off requirements:	For proper operation, a minimum separation between SpacePad's sensor(s) and flat-coil transmitter must be maintained. This separation is equal to 80% of the transmitter's radius. For more information, contact: support@ascension-tech.com

Physical

■ Number of sensors:	Up to four per electronics card
■ Sensor size:	L x W x H: 1.3 inches x 1.1 inches x 0.8 inch (3.3 cm x 2.8 cm x 2 cm) with 10 ft (3 m) cable
■ Number of transmitters:	Up to two
■ Transmitter size:	Maximum coil size 8 ft x 8 ft (2.4 m x 2.4 m)
■ Power:	5V @ 0.5A, +12V @ 1.1A, -12V @ 0.6A from the ISA bus
■ Environmental:	0° to 60° C, 95% non-condensing humidity.
■ Mechanical:	ISA version: 13.45 inches x 4.5 inches x 0.5 inches (34 cm x 11 cm x 1.3 cm) single-slot card with 16-bit edge connector.

Ascension Technology Corporation

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