Model SB-6200

PRELIMINARY

BoreCast™ Extended Range Pointing System

RF-based Long Range Collimating and Boresighting Tool

Applications

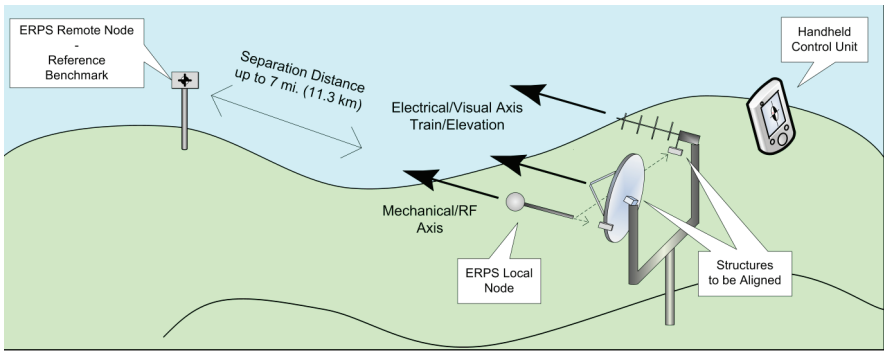
- Collimation of multi-system platforms
- Cross-Range Alignment of RF-propagation and visual axes
- Point radars, directional RF antennas, cameras, etc.
- Calibrate/Verify Antennas and Inertial Navigation or Fire Control Systems, Directors, & Platforms
- Ground, Air, or Shipboard Boresighting
- Augment Shore Boresight Tower Systems
- Mobile Tracking and Threat Emitter Systems
- Systems Repair, Overhaul, Upgrade, and Fielding
- RF Link and Range Setup, Testing, and Operation

Key Features

- Fast, simple operation
- Sub-degree accuracy for distances up to 7 miles
- RF-based operation - no laser or visual limitations
- Works at night or in inclement weather
- Independent of user visual acuity
- Self-positioning; no external resolvers or gages
- Wireless Handheld Control Unit
- Electronic Crosshairs Show Position
- Real-time Angle-Error Readings
- Zero-train Peaking Indicators
- Flexible MIL-STD-1913 Rail mounting
- Accurate and Repeatable Alignment on Mobile or Stationary Land, Air, or Sea Vehicles and Platforms

The SB-6200 BoreCast™ Extended Range Pointing System, or ERPS, brings the power and range of RF systems to boresighting and collimation requirements, shattering the distance limitations of legacy visual, laser, and GPS-based systems. SRI's BoreCast ERPS provides fast, simple collimation of multiple sub-systems, adjustment or validation of reference planes, and other orientation tasks over distances of up to 7 miles. Initially designed for fast and accurate collimation of Microwave Threat Emitter systems, BoreCast can be applied to a variety of similar tasks requiring the determination and maintenance of pointing angles in radar, fire acontrol directors, LOS communications, video and optical tracking, and other directional systems. Whether "that-a-way" is called azimuth, heading, train, or bearing, an SRI BoreCast is unmatched for long-range alignment, collimation, and boresighting tasks.

Extended Reach Pointing Systems are used to augment older boresight and collimation tools, overcoming range limitations and allowing the alignment or coordination of collocated elements over distances of up to 7 miiles (11 kilometers) within a localization area of over 150 square miles (200 square kilometers). The extended range enabled by an ERPS can often more accurately reproduce the operating environment of deployed systems than can be achieved with near-field visual or laser adjustments.



The BoreCast system includes a Remote Node target designator used as a reference benchmark point and a Local Node that can be simply and easily attached using a common MIL-STD-1913 Picatinny or Weaver Accessory Mounting rail foot coaxially mounted to antennas, reflectors, video housings, or other devices to be aimed. With the aid of an intuitive wireless controller, a user mechanically or electrically positions the antenna to align the optical and electrical axes. Aiming is based on minimizing the difference in angle between the train or elevation reference axis and the RF propagation or optical axis (angle-error). The ability to stream angle-error and ordinal position information allows the BoreCast ERPS to be used for dynamic alignment or verification in applications where the components of a system are in motion such as alignment afloat, in flight, while driving, and other mobile situations.

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Model SB-6200 BoreCast™ Extended Range Pointing System

System Level

Range: up to 7 miles (11 km) non-constrained line of sight
Localization Area: >150 sq mi (>400 sq km) centered at Local Node
Operating Frequency: 2.4 GHz
Accuracy, Unconstrained Line of Sight
Acquisition Scan Mode: ±90° from reference vector
Coarse Alignment Mode: ±5° from reference vector (300 MOA)
Fine Alignment Mode: ±0.5° from reference vector (30 MOA)
Super-Fine Alignment Mode: ≤±0.1° from reference vector (~5 MOA)

BoreCast ERPS Local Node

Train Field of View: 14 miles at 100 yds (22 km at 100 m) min
Elevation Field of View: 7 miles at 100 yds (11 km at 100 m) min
Angle-error Reporting Rate: 300 mS
Interface to HHCU or user-supplied interface device: WiFi or USB
Physical Size: TBD (estimated to be contained within 24" spherical volume) mounted with 24" offset to Upper Mounting Base interface plate
Mounting:

Upper Mounting Base: The Upper Mounting Base includes a circular interface plate with a diameter of TBD inches and a minimum thickness of TBD inches. The mounting base has a thru-hole a minimum of TBD inches in diameter to allow passage of cables.

Lower Mounting Base: The lower mounting base attaches to the Upper Mounting Base and consist of a mechanism to affix the EPRS Local Node to a structure using a MIL-STD-1913 Picatinny or Weaver Accessory Mounting rail configuration. The Lower Mounting Base has the ability to rotate in order to properly orient the ERPS relative to the position of the 1913 rail foot. The Lower Mounting Base allows removal and replacement of the ERPS Local Node while ensuring co-axial mechanical orientation.

BoreCast ERPS Remote Node

Antenna Size: TBD (estimate approx. 1m)
Enclosure Size: TBD (estimate approx 27" x 16" x 10")
Weight: TBD (estimate 5-10 lbs w/o Solar charger, enclosure or battery)
Battery Life, Continuous Operation: 6 hrs. min.
Mounting: Pole mount, diameter 1.0 in to 3.0 in (26.9 cm - 7.6 cm)
Transmit Power: TBD (estimate 12 VDC / 3 A)
Standby Power: TBD (estimate 12 VDC / 10 mA)
Solar Power: Optional, includes deep cycle gel cell battery

BoreCast Handheld Control Unit

Type: Handheld, PDA-like
Measurement Method: Discrete Angle-error
Numeric Display: train angle in Degrees
elevation in degrees from normal
Graphic Display 1: reticle/crosshair pattern, center equivalent to on-bore train and elevation
Graphic Display 2: Bar-graph meter style, 100% equivalent to on-bore train and elevation
Battery Type: Standard Commercial Variety
Security Capability: Capable of running from removable memory or secure sanitization of non-volatile memory
Interface with ERPS Local Node: WiFi or USB

Environmental Specifications, BoreCast Nodes

Operating Temperature: 0 °C to +70 °C (Lower temp option avail)
Storage Temperature: -40 °C to +85 °C
Drop: 4 ft. (122 cm)
Operating Altitude: 15,000 ft.
Transportation Altitude: 50,000 ft.
Humidity: Up to 95% Humidity
Rain and Blowing Rain: Up to 4 in/hr
Blowing Sand & Settling Dust: Dry Desert, 90 Minutes min.

Note: Specifications are preliminary and subject to change.

Summation Research, Inc (SRI) is a qualified Small Business engineering and manufacturing company founded in 1989 and located in Melbourne, Florida. SRI provides design, development and production capabilities for high performance data acquisition, satellite telemetry, and communication products and systems to defense, government and commercial markets worldwide. SRI's diverse in-house skills and experience allow the company to provide full end-to-end system and/or product design and development, manufacturing and technical support services with the cost and schedule effectiveness of a small business entity. This expertise, augmented by a well equipped facility (in excess of 40,000 square feet) provide the basis to accommodate both large and small program requirements.

SRI's standard communications product line addresses both satellite and private land mobile data telemetry markets. The designs conform to a wide variety of standards and requirements, including USB, SGLS, AFSCN, FCC, ETSI, MIL-STD's and others. The products incorporate a multitude of waveforms (PSK, FSK, AM, PM, FM, PM/PSK, FM/FSK ...) with a wide range of data rates. The RF portion of these designs covers 130 to 500 MHz for land mobile and 1.4 to 2.6 GHz for satellite telemetry, but can be modularly adapted for user specific frequency bands of interest. SRI's Products support data rates ranging from 50 bps to 400 Mbps.

Learn more about SRI at www.SummationResearch.com.

* All specifications subject to change without notice or obligation to retrofit.
Consult factory for custom options and/or alternate specifications

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