SYSTEM CONTROLS
Versatility is Reality

System Controls Technology Solutions Pvt Ltd

PRECISION SCANNING ASSEMBLY (LIDAR)

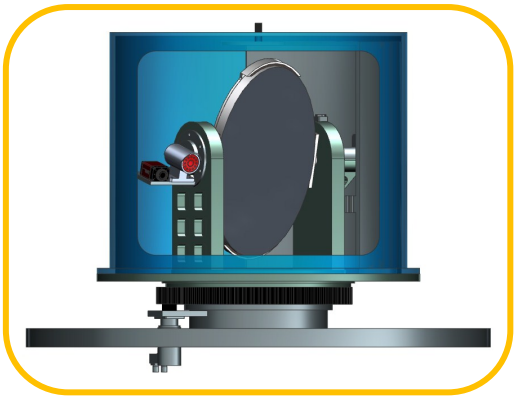
Products:

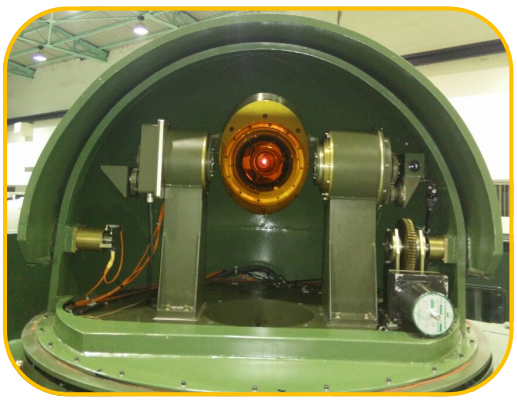
- Stabilized Platforms
- Gimbals
- Positioners
- Pointing Systems
- Pan Tilt Units
- Radar Subsystems
- Electro-Optical Systems
- Opto-Mechanical Systems
- Motion Controls Systems
- Test Benches

Services:

- Engineering Design & Development
- Electronic Testing & Assembly
- CNC Machining & Manufacturing
- System Integration

The Precision Scanning Assembly consists of a Dual Axis (Azimuth and Elevation) Gimbal Assembly, which is mounted on a TATA vehicle. The configuration of the system is that, the whole of the system, excluding the azimuth drive system, is sitting on a sleeve ring, Sleeve ring is driven by the azimuth drive system. Elevation Assembly is housed in the yoke structure originating from the azimuth segment of the pedestal. The primary payload i.e., the elliptical scanning mirror, is held on its minor axis and supported by a back plate. It is a stand-alone system for providing azimuth rotation motion with different RPMs as defined by GUI commands and it is an elevation over azimuth assembly. The LIDAR Gimbal System consists of Azimuth Axis and Elevation Axis with its individual Driver and one Controller. Azimuth is a non-continuous (0-360 deg) with zero backlash (through anti-backlash gears) and DC Motor with an incremental encoder. Elevation is a non-continuously rotating system with zero backlash (through anti-backlash gears) and DC Motor with an incremental encoder. Apart from Scanning Mirror, remaining Electrto-Optical Payloads, namely, a CCD Camera & an IR Camera are mounted on the Elevation Platform of the Scanning System. The Camera images the object in the field of view and acquires through a frame grabber at fast rate. The frames are then processed to identify the required features of the object field.





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Technical Specifications

Azimuth Drive	Scanning Rate	: 20 deg/sec max & 0.1 deg/sec min, variable
	Acceleration	: 10 deg/sec^2
	Field of Regard	: 0 to 360 deg
	Scanning Accuracy	: 0.5 µrad
Elevation Drive	Scanning Rate	: 20 deg/sec max & 0.1 deg/sec min, variable
	Acceleration	: 10 deg/sec^2
	Field of Regard	: -10 to +30 deg
	Scanning Accuracy	: 0.5 µrad
Others	Payload	: 50 kg approx
	Pedestal Weight	: 110 kg
	LOS Jitter	: 0.2 mrad
	Size	: 520 mm (L) x 600 mm (H)
	Range	: 100 m to 5 km
	Scanning Pattern	: Raster / Circular / Spiral
	Disturbance	: Wind Load / Gust & Internal Drags
	Disturbance Spectrum	: 3 mrad up to 1HZ and less at higher frequencies (20 dB/decade roll-off assumed)
	Modes of Operation	: Search Mode/Detection Mode/Concentration Measurement Mode/Home Mode/Slew Mode
	Torque Drive	: Two Direct Drives
	Servo Sensors	: Two sets of Servo Sensors (Positional & Rates)
	Environmental Specifications	: JSS55555
	EMI/EMC	: MIL-STD-461C

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