SSI
SURFACE SYSTEMS & INSTRUMENTS, INC.
Custom Test Equipment • Mobile Technology Solutions

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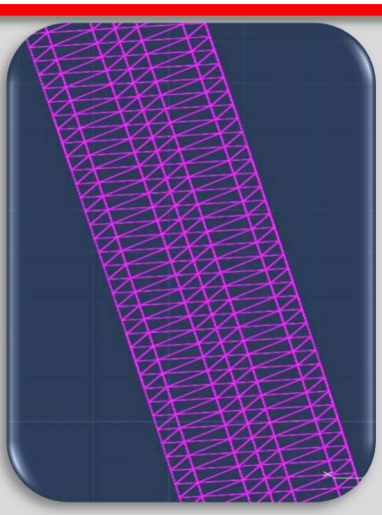
3D Modeling & IRI Testing

The Preferred All-in-One System

▲ CS9550 Full Lane Survey Scanner ▲

Webpage

Full Lane Scanning – Only 1 Pass Per Lane Required
2D or 3D Machine Control Models by Slope or Elevation
Quickly Create 2D Surfaces in LAS or PNEZD Formats
Instantaneous IRI Reporting
Inertial Profiler Compliant with ASTM E950 & AASHTO r56
No Need for Additional Smoothness Equipment
Scalable: Start with IRI; add Cross-Slope, Rut, & 3D Scan



CS9500 Full Lane Survey Scanner

All Properties Dependent on System Build and Features Installed:

IP Conforming Specifications	ASTM E950, E1926; AASHTO R56 & R57, M328; TxDOT 1001-S
Collection Speed	0-160 mph for inertial system with Zero-Speed upgrade 56 mph for 2-inch grid on scanning system
Smoothness Report Metrics	**IRI, MRI, HRI, RN, RMS, PRI**
CS9500 Mounting	Rear (bed rails) or front mounted (tow hooks)
Smoothness Localized Roughness Metrics	IRI, Straightedge, Profilograph must-grinds, Texas 1001-S method
Typical Point Cloud Sampling	2”x0.5” at 55mph (50mm x 12mm at 88kph)
Smoothness Data Export Formats	ProVAL (PPF, ERD), GIS, Excel, PDF, TxDOT PRO, CAD, Txt.
Survey Scan Export Formats	LAS, DXF, Text/CSV (PNEZD)
Software Requirements	Windows 10
GPS Features Available	**Constellations:** GPS, Glonass, Galileo, Beidou; L1/L2 frequencies; **Correction Services:** WAAS, SBAS, PPK/RTK, NTRIP
PPK 2D GPS Accuracy	~10mm horizontal, ~25mm vertical
3D Control Point Spacing	2,500 – 4,000 feet (800-1,200 meters)
PPK 3D Elevation Accuracy	≤ 6mm for ~95% of point cloud
Inertial Profiler Laser Vertical Accuracy	< 0.01-inches (Per AASHTO r56)
Inertial Profiler Laser Standoff Height	12-inches (305mm)
Inertial Profiler Laser Width	4-6 inches (100-150 mm)
Scanning Laser Vertical Accuracy	0.56 mm (0.022-inches)
Scanning Laser Z-axis Linearity	0.05% of MR
Scanning Laser Measurement & Frequency (each)	1200 points at 5kHz
Minimum Scan Width	3-Laser: 7.5-feet (2.3 meters) 6-Laser: 13.5-feet (4.1 meters)
Scanning Laser Mount Height	60-inches (1.52 meters)
Accelerometer	±10g (0.0001g resolution)
GPS-DMI Accuracy	< 0.05%
Encoder DMI Accuracy	< 1-ft/528-ft
IMU Pitch/Roll Accuracy	0.02 degrees
IMU Heading Accuracy	0.01 degrees
Power Connection	Host Vehicle Battery
Power Supply	12V DC
Power Draw	2.4 amps per laser

Features: *25 Years Refined*

- Guided calibrations for bounce test, laser verification, accelerometer, and distance.
- Only 1 pass per lane required
- Immediate reporting of IRI and texture
- Built-in GPS Post-Processing (**PPK**)
- 2D or 3D surfaces for modeling
- SSI Survey Correction Program merges scan data & corrects to 3D elevations
- Intellicut Corrective Grind Optimization Software.
- Profile Design software creates smoothed machine control models based on machine dynamics and IRI values
- Navigate to defects and locations with our real time **GPS Tracker**
- Real time display of traces, speed, position during collection.
- Configurable hot-key shortcuts.
- Real-time system health monitoring and diagnostics
- Support for Google Earth and Google Maps.
- User configurable analysis parameters and data editing.
- Rewritable raw data: change parameters at any time.
- Automatic software updates with SSI Profiler 3.
- Real-time error logging and web-based reporting.

Operation, Training & Support

- Designed for safe, one-person operation.
- Sensor modules adjust to meet different agency specifications.
- Operator training and technical support worldwide.
- Portable, modular components for in-field replacement.
- Warranty and rapid response customer support.

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