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**SURFACE SYSTEMS & INSTRUMENTS, LLC**

Custom Test Equipment • Mobile Technology Solutions

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# High Speed Surface Profiling System

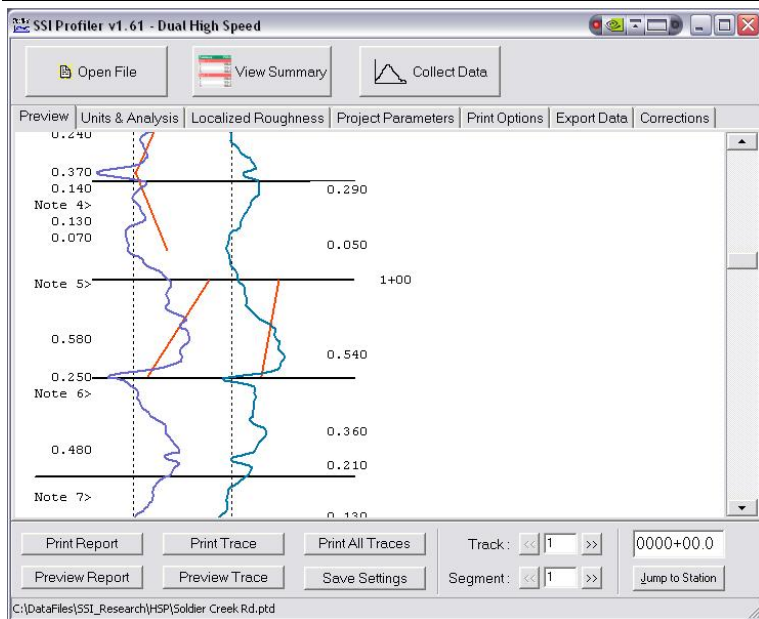


▲ CS9000 Robust Front Mounted System ▲



▲ CS9300 Portable Rear Mounted System ▲

## Precise Surface Profile Measurement at Highway Speeds



▲ Patented Windows Data Collection & Analysis Software ▲



▲ In-Vehicle Workstation and Touch-screen Toughbook ▲

HARDWARE FEATURES	SOFTWARE FEATURES
<ul style="list-style-type: none"> <li>Profiling system kit package (removable) mounts onto front or rear of standard vehicles. • On-site installation assistance and training.</li> <li>True ASTM Class I Profiler at all speeds. Guaranteed to meet or exceed DOT specifications and certification requirements (DOT, Transport Ministry, FHWA, AASHTO PP492).</li> </ul>	<ul style="list-style-type: none"> <li>Feature rich Windows software for calibration, data collection and analysis software run on touch-screen Toughbook computer.</li> <li>On-Screen user's manual and instructions for profiling software.</li> <li>Real time diagnostics continually monitor health of profiling system and facilitate prompt resolution of support issues.</li> </ul>
<ul style="list-style-type: none"> <li>Ultra-compact profiling system components. All electronics and sensors smaller than Toughbook operator computer.</li> <li>100% Non-contact inertial system—no sensors touch road surface.</li> <li>Core components field installable and available by express shipping</li> </ul>	<ul style="list-style-type: none"> <li>Instant test results and on-screen view of profile traces and reports.</li> <li>Collection system pauses if vehicle slows &lt;5mph or when stopped.</li> <li>Add new profile data to existing data files for comparison of original condition with constructed surfaces.</li> </ul>
<ul style="list-style-type: none"> <li>Professionally engineered sensor mounts are vibration free and allow for lateral and horizontal repositioning of sensors.</li> <li>Panasonic <a href="#">Toughbook 30</a> military specification notebook computer with daylight readable Touchscreen controls.</li> </ul>	<ul style="list-style-type: none"> <li>Profile reports and traces available on-screen, one-touch PDF images, hard copy from on-board printer, or in electronic format.</li> <li>Colorized traces and highlights of bonus/penalty profile areas.</li> <li>One-touch data export to ERD, PPF, and Excel templates (supplied).</li> </ul>
<ul style="list-style-type: none"> <li>Single or dual track systems available. (<i>Note: single track systems have patented ability to report dual track profiles</i>).</li> <li>All-in-Cab operation—collect/analyze data without leaving vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>Unmatched precision in detecting surface features exact dimensions of localized roughness—<i>Proven and Guaranteed!</i></li> <li>Localized roughness reports predict dimensions of grind/fill areas.</li> </ul>
<ul style="list-style-type: none"> <li>Wide range of speeds (~5 mph to 70 mph).</li> <li>Multiple data collection methods allow versatility and cost savings: (1) SSI reverse direction trigger collects exact stations without pre-marking test sections, (2) electric-eye sensor triggers by reflective tape, and (3) touchscreen push button trigger for start/stop.</li> </ul>	<ul style="list-style-type: none"> <li>Profile data reported under various profile indices [International Roughness Index (IRI), Profilograph Index (PI), Ride Quality Index (RQI), Half Car Ride Index (HRI), Ride Number, etc.]</li> <li>User-selectable data collection and analysis parameters (project details, filtering methods, blanking band, bump/dip templates, etc.).</li> </ul>
<ul style="list-style-type: none"> <li>Optional wide footprint sensor configurations reduce impact of tinning, grooving and coarse textures on profile index and localized roughness values. (Multiple single point or RoLine sensors available)</li> </ul>	<ul style="list-style-type: none"> <li>Multiple profile trace reporting for lateral surface analysis.</li> <li>Simulation routines for estimating ride index and localized roughness after corrective grinding or overlays.</li> </ul>
<ul style="list-style-type: none"> <li>GPS subsystem (optional) with real-time display of GPS position, GPS correlation with profile stations, and Google Earth integration.</li> <li>Surveying subsystem with high resolution RTK corrections available with integrated site design and machine control options.</li> </ul>	<ul style="list-style-type: none"> <li>Industry leading Windows software designed by PhD engineers with decades of profiling industry experience.</li> <li>Desktop software supplied for viewing, analyzing, printing and emailing of profile data.</li> </ul>
<ul style="list-style-type: none"> <li>Buy or Rent.</li> </ul>	<ul style="list-style-type: none"> <li>Encrypted raw data for infinite reanalysis with variable parameters.</li> </ul>

### ▼ Sample Screens From SSI's Windows Profiling System Software ▼

Segment	Station	End	IRI	Average	Defects	Notes
Summary	0+00.0	766+80.3	154.5	177.7	166.1	247 379
1	0+00.0	5+28.0	146.1	158.2	152.1	1 3 StartAcquis
2	5+28.0	10+56.0	141.9	155.3	148.6	2 1 42 42 27.85
3	10+56.0	15+84.0	96.7	166.3	131.5	1 2 42 42 27.64
4	15+84.0	21+12.0	112.4	188.7	150.6	0 5 42 42 27.41
5	21+12.0	26+40.0	165.7	212.9	189.3	0 3 42 42 27.14
6	26+40.0	31+68.0	142.0	203.4	172.7	1 4 42 42 26.87
7	31+68.0	36+96.0	167.0	187.5	177.2	3 4 42 42 26.60
8	36+96.0	42+24.0	283.8	431.9	357.8	10 14
9	42+24.0	47+52.0	198.6	233.9	216.2	2 4 42 42 26.33
10	47+52.0	52+80.0	130.6	167.2	148.9	1 2 42 42 26.05
11	52+80.0	58+08.0	104.9	127.6	116.2	0 1 42 42 25.79
12	58+08.0	63+36.0	161.2	169.1	165.2	0 1
13	63+36.0	68+64.0	145.1	277.2	211.2	0 7 42 42 25.54
14	68+64.0	73+92.0	132.2	167.7	150.0	0 0 42 42 25.29
15	73+92.0	79+20.0	153.4	167.0	162.0	0 1
16	79+20.0	84+48.0	173.0	214.7	196.9	3 2 42 42 25.07
17	84+48.0	89+76.0	138.6	171.9	155.2	0 1
18	89+76.0	95+04.0	178.4	202.1	190.2	0 4 42 42 24.86
19	95+04.0	100+32.0	203.3	208.0	205.6	2 5 42 42 24.68
20	100+32.0	105+60.0	182.4	258.1	220.2	0 7
21	105+60.0	110+88.0	207.0	253.6	230.3	3 7
22	110+88.0	116+16.0	201.8	232.5	217.1	2 2 42 42 24.52
23	116+16.0	121+44.0	232.5	280.4	256.4	7 10 42 42 24.40
24	121+44.0	126+72.0	181.7	201.9	191.8	2 2 42 42 24.29
25	126+72.0	132+00.0	170.5	204.1	187.3	0 2

### ▲ Computer Instructed Data Collection and Calibration Routines ▲ Immediate Results and Advanced Data Analysis Features ▲

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