RTSS

Videoextensometer (Real Time Strain Sensor)

Applications

- Measurement of material properties
- True strain controlled tensile tests
- Exploration of cracks
- Strain behaviour on dynamic tensile tests
- Dynamic and high speed tests
- Vibration analysis

Features

- A modern, configurable and intuitive user interface using OpenGL
- Fully automatic operation by interfaced tensile test machine
- Using templates for different measurement tasks
- Many options for data communication
- Integrated generation of image sequences
- The multithread-analysis-kernel supports multi-core-processors to achieve a low processor load

Introduction

RTSS (*Real Time Strain Sensor*) is a non-contact optical measurement system based on a digital camera and real-time image processing. It measures the longitudinal and transverse strain between two user-defined lines with a rate of up to 4000 Hz. The live strain data can be interfaced, via an analog signal or digital interface, with the tensile test machines for further processing or controlling.

Upgradable to Digital Image Correlation

Utilizing common hardware, the RTSS is fully upgradable to both 2D and 3D Digital Image Correlation systems for full-field deformation and strain analysis.

Product Variants

- **Multi-Camera-System**

Simultaneous measurement of different specimen sides (up to 360°). Small and large FOV for accurate E-modulus and full stress-strain curve

- **RTSS_HR**

For quasi-static tensile test with high accuracy (20µstrains)

- **RTSS_HS**

For dynamic applications with up to 4kHz measurement rate. Automatic measurement of frequency response curve: e.g Hydropulser / Shaker

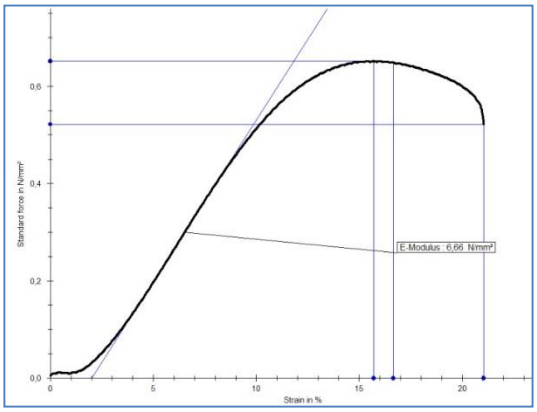
DANTEC DYNAMICS

LIMESS Messtechnik & Software GmbH

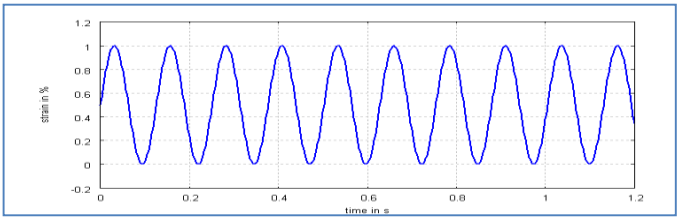
NOVA INSTRUMENTS
a Nova Instruments company

Examples

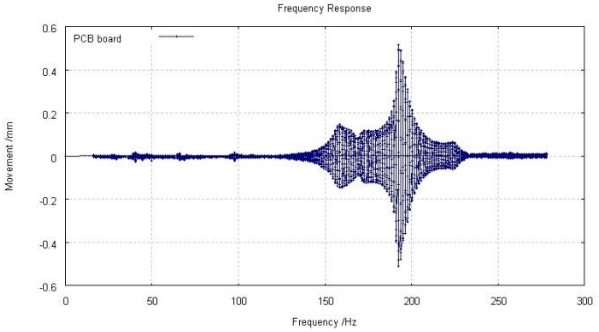
RTSS set up on a tensile test machine



Determination of Young's modulus and Poisson's ratio



Dynamic strain measurement between two indicated lines or markers. e.g. Hydropulser



Automatic measurement of the frequency response curve of an electronic board on a shaker

General Specifications RTSS		
	High Accuracy Version	**Fast Version**
Accuracy	0.002% strain	0.02% strain
	1µm @ 100mm FoV	10µm @ 100mm FoV
Sampling rate	50 Hz	4000 Hz
Analog Output	+/- 10V; 16 bit	+/- 10V; 16 bit
Strain Range	> 500%	> 500%
Camera res.	2.0 MPixel	VGA

The specifications in this document are subject to change without notice.

Additional Information
For additional information, please contact your Dantec Dynamics representative or visit www.limess.com