



# Frequency and Damping Test Stand SAE J2598

## FDT

### SAE J2598

- Frequency Range better than standard requirement (500Hz to 16 kHz)
- Frequency Resolution < 1 Hz at 20 kHz
- Calculation of Damping or Loss Factor according to SAE J2598
- Selectable dB Values for Damping Estimation for each Natural Frequency
- Quality Sentencing based on Frequency Tolerances
- Temperature Measurement with optional Frequency Correction

### Measurement Types

- Part Type Definition
- Serial Measurement
- Repetition Measurement
- Master Part Measurement

### Data Management

- SQL Data Base
- User Management
- Work Order
- Part Types
- Measurement Data
- Reporting

## High Precision Automotive Disc Brake Pad Natural Frequency and Damping Test



The Frequency and Damping Test Stand is optimized for the determination of

- Natural Frequencies
- Damping Values of brake parts following SAE J2598.

It consists of an aluminium construction with the following components:

- Excitation Unit
- Vibration Sensor
- Data Acquisition
- Windows PC

### **Excitation Unit**

The broad band excitation is done with an Automatic Impact Hammer:

- Frequency Range 0.3 to 40 kHz
- Impact Force up to 200N peak
- High Reproducibility

### **Vibration Sensor**

The following sensors can be used with the FDT:

- Microphone
- Laser Doppler Vibrometer
- Acceleration Sensor

### **Data Acquisition**

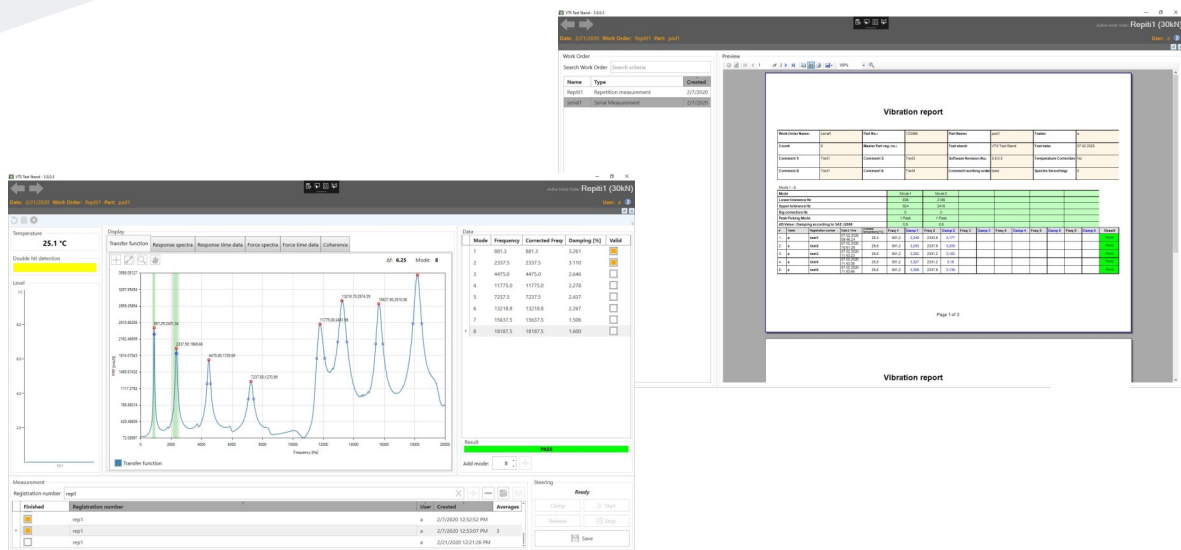
4 Channel DAQ with synchronous sampling

- Frequency Ranges 1 kHz to 100 kHz
- Frequency Resolution 100 to 26500 FFT Lines
- AC, DC and IEPE Coupling

### **Windows PC**

All in One PC with Windows 10

- 8 GB RAM
- 256 GB SSD



## Software

The software handles the complete test procedure. It covers user management, parts and work order handling, measurements, analysis, documentation and reporting.

### Part type specification:

- Name and Meta data
- Frequency range | kHz - 100 kHz selectable
- Frequency Resolution (No of FFT lines) selectable
- Frequency bands, Frequency Tolerances
- dB Values for Damping Calculation (0.5 to 3dB)

### Measurement Procedure based on Work Order:

- Serial Measurement
- Repetition Measurement

### Automatic Measurement Procedure:

- Triggering of Automatic Impact Hammer
- Measurement of Excitation Force and Vibration Response
- Averaging and Analysis
- Peak Picking, Damping Calculation and Sentencing

### Reporting

Output of Work Order Results as Chart to:

- Printer, PDF, Excel, CSV, etc.

### Data Export

- ASCII Files