

Performance test report

Automotive Mechsense Analog

Mechworks Systems Inc.

August 2004

By: Shahab H.Ghafari M.A.Sc

Quality Assurance

Mechworks Systems Inc.

145 Columbia Street West

Unit # 5

Waterloo, Ontario, Canada N2L 3L2



Scope

This report describes the vibration tests performed on the automotive Mechsense Analog. The following report provides information on the test, instrumentation & set-up, input levels and results.

Test configuration

An automotive Mechsense analog accelerometer with bandwidth 100HZ was used for the purpose of this report. The accelerometer was subjected to periodic chirp and sweep sine for determining the frequency response and time response of the sensors. The test configuration is similar for each test. The specification of test equipment and test configuration are as following.

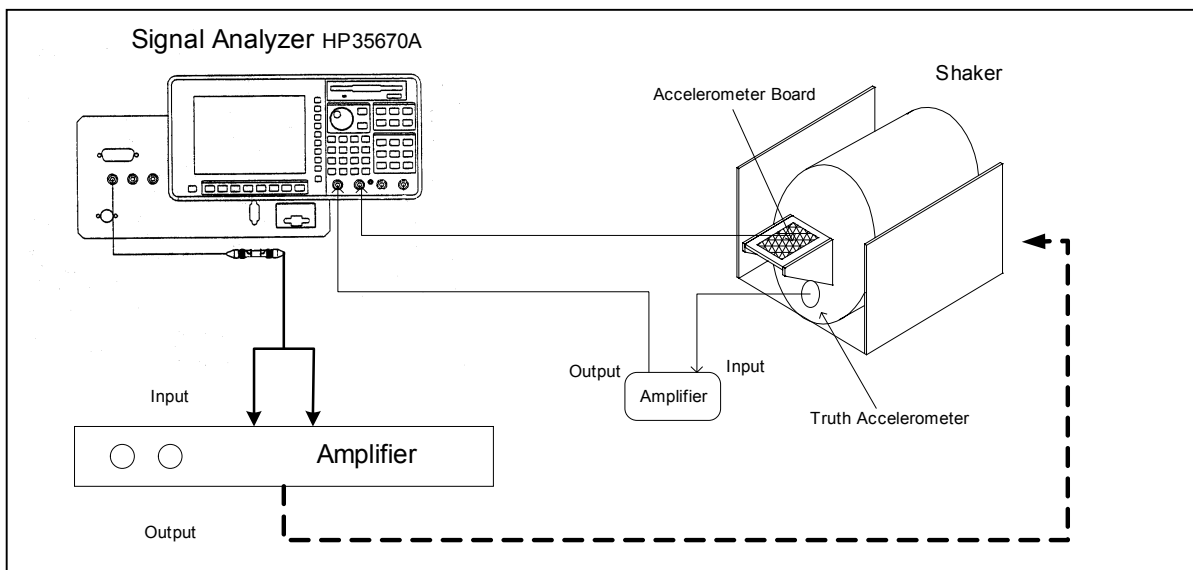
Power Amplifier: B& K Type 2708

Dynamic signal analyzer: HP 35670A

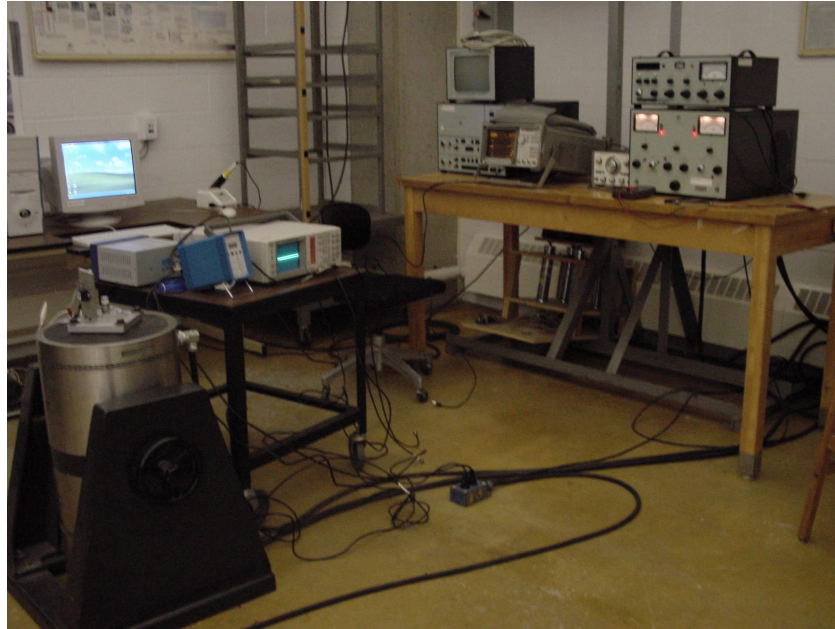
Power supply coupler: Kistler 5134

Shaker: B & K Type 4818

Truth accelerometer: Piezo accelerometer PCB 308 B02



Test Bed

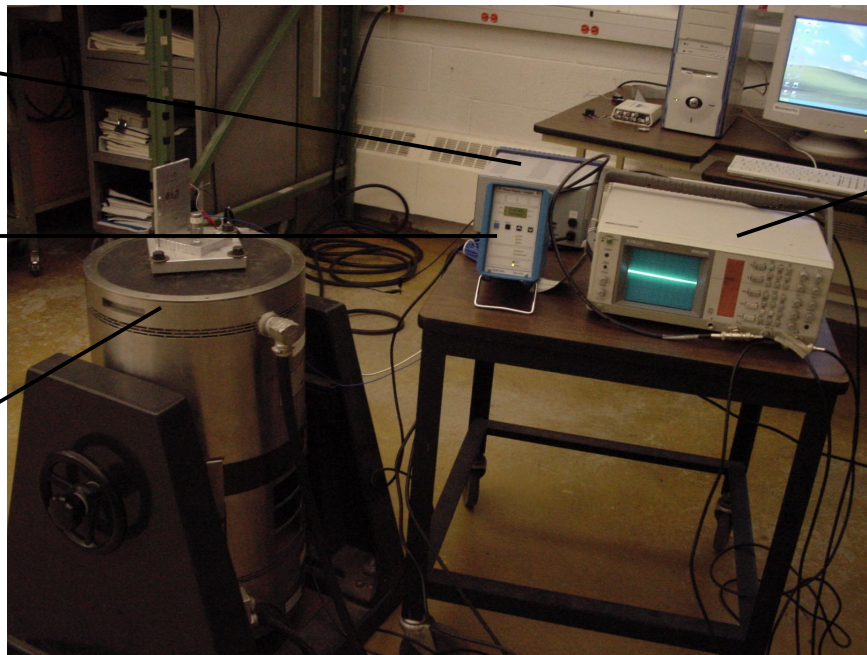


Test facilities

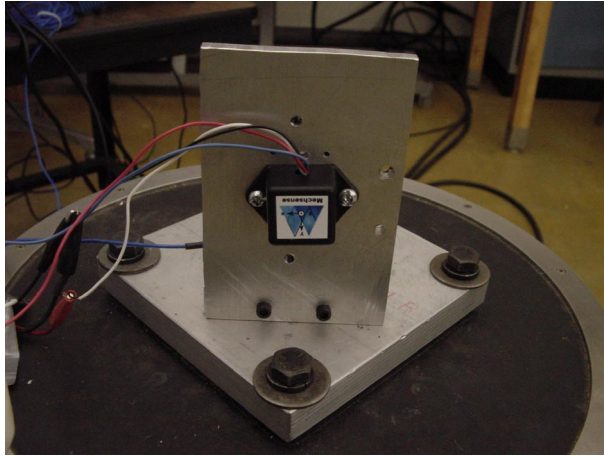
Accelerometer
Power supply

Power supply
coupler

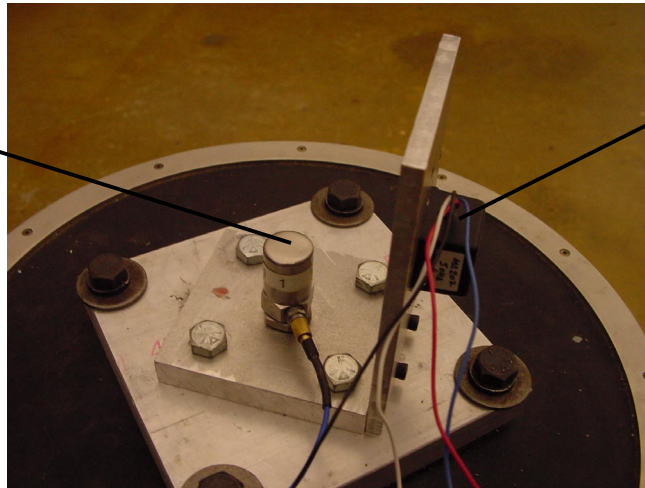
Shaker



Oscilloscope



Mechsense analog mounted on the shaker



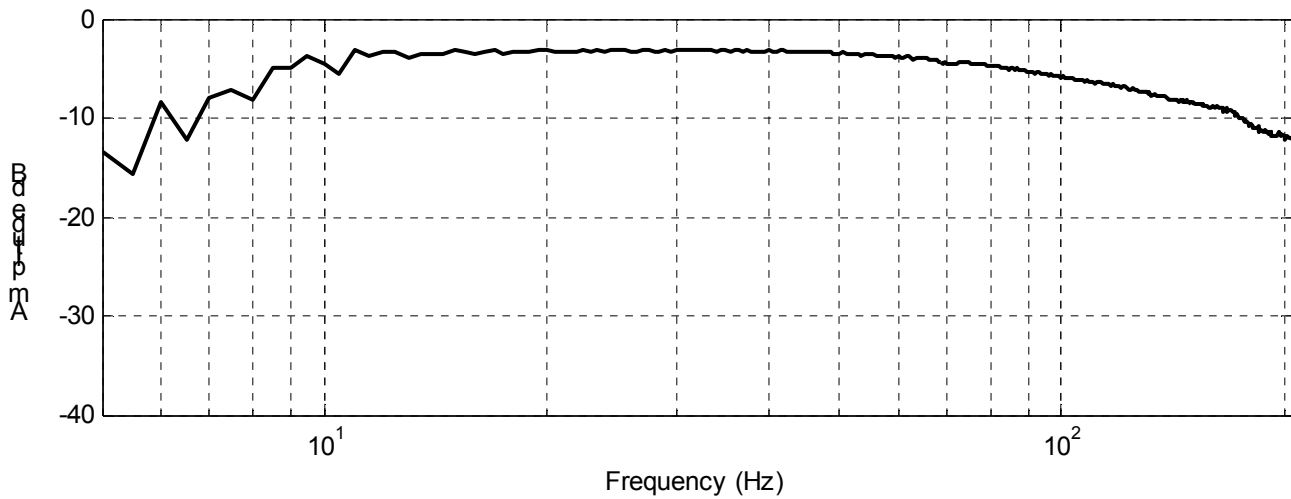
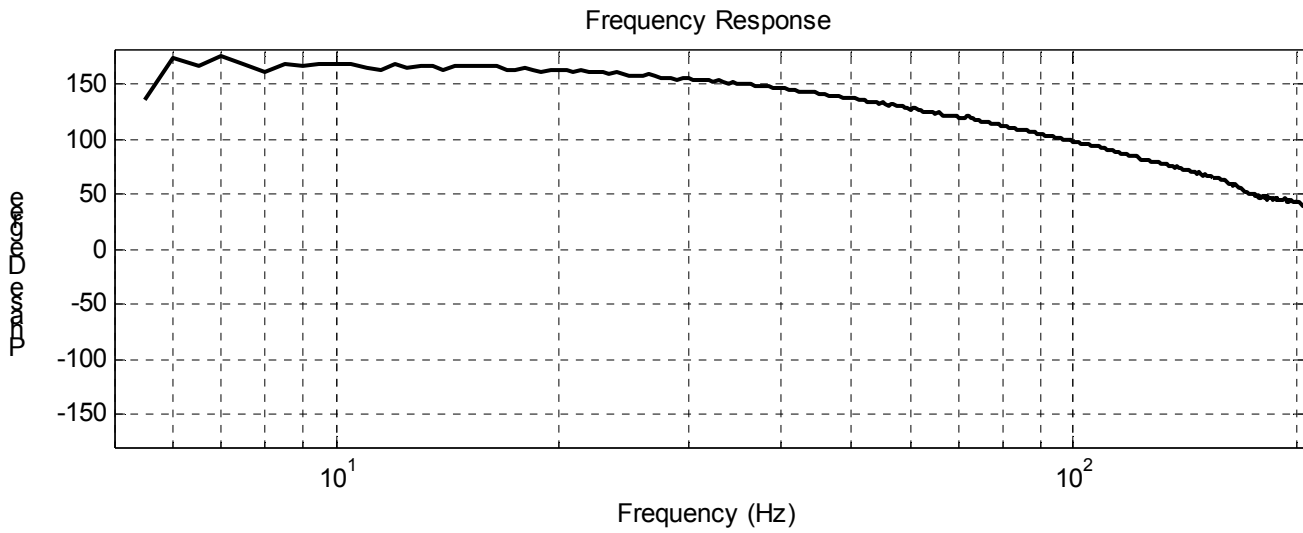
Truth accelerometer
(PCB 308 B02)

Automotive
Mechsense
Analog

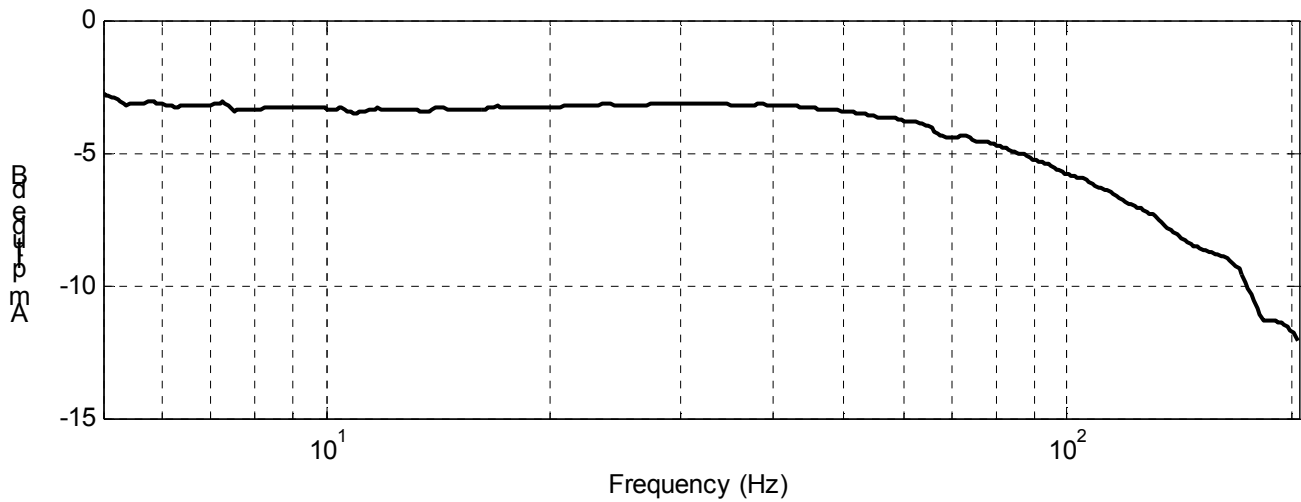
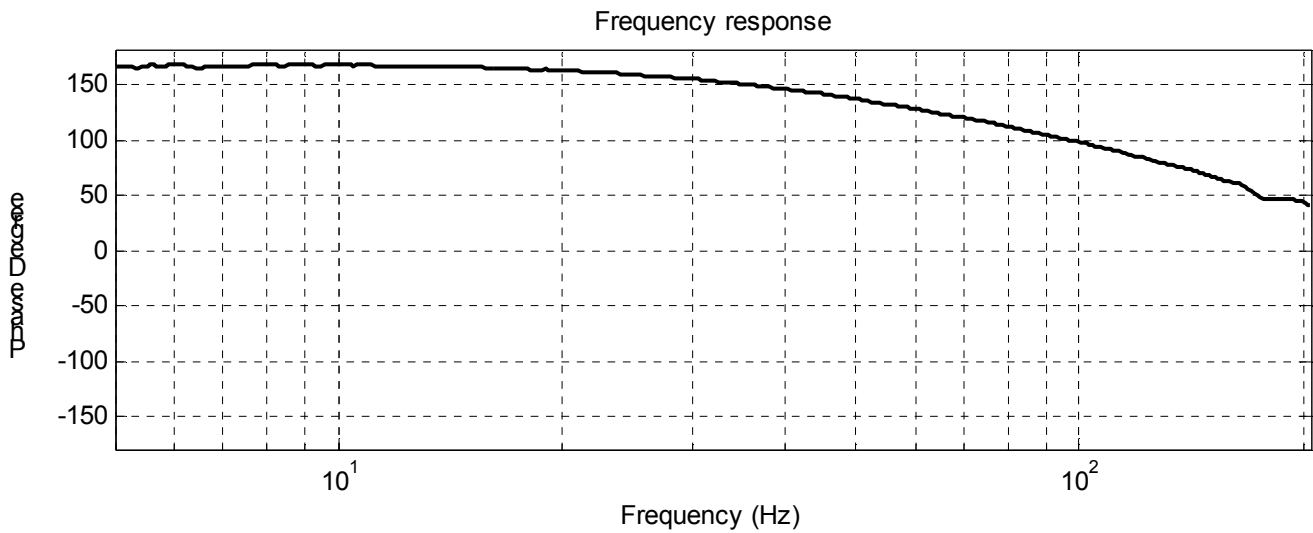


Signal Analyzer HP 35670A

Type of Test	Frequency Response Transfer Function
Tested Product	Mechsense/PCB
Truth Accelerometer	Automotive Mechsense Analog 100 Hz
Input	PCB 308 B02
Gain	Periodic Chirp
Filter	5
Tested Band width	N/A
Tested Direction	5 – 205 Hz
	Y



Type of Test	Frequency Response Transfer Function
	Mechsense/PCB
Tested Product	Automotive Mechsense Analog 100 Hz
Truth Accelerometer	PCB 308 B02
Input	Sweep Sine
Gain	5
Filter	N/A
Tested Band width	5 – 205 Hz
Tested Direction	Y



Type of Test

Time Response Comparison

Tested Product

Mechsense Analog 100 Hz, Mechsense Analog 75 Hz, Mechsense Analog 50 Hz, Truth accelerometer (PCB 308 B02)

Input

Periodic Chirp

Gain

5

Filter

N/A

Tested Band width

5 – 55 Hz

Tested Direction

For all accelerometers Y direction

