

Shock test solutions

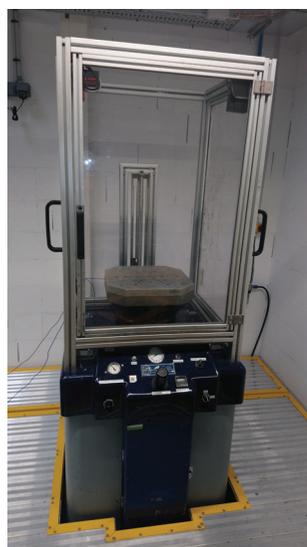
Engineers at Continental Automotive's R&D center in Toulouse, France, have noted the significant benefits of a suite of newly installed vibration and shock control systems

Specializing in the production of electronic components for the automotive industry (including electronic injection ignitions, electronic gearbox controls, sensors and onboard navigation systems), international equipment company Continental Automotive has three plants in the southwest of France. This includes a sensor factory in Boussens; an injection management systems plant in Foix; and a facility in Toulouse where it produces wheel pressure sensors, vehicle access badges, onboard computers and more.

In 2017, Continental's R&D facility in Toulouse, which has more than 2,000 employees, gained an additional department (and 150 extra employees) in order to develop an ultra-connected car.

The company's environmental testing laboratory in Toulouse, which was renovated recently, is equipped with four m+p VibControl vibration controllers and eight-channel m+p VibPilot front ends for control of its electrodynamic shakers, which are coupled with climatic chambers. m+p Analyzer software and another m+p VibPilot front end are used for capturing shock test data on an Avco system and for post-processing. Two additional m+p eReporter licenses enable post-processing of vibration test results.

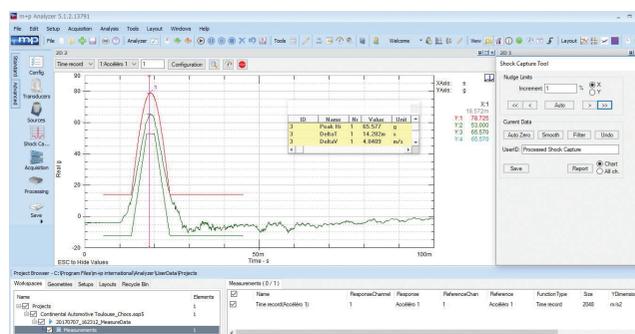
These vibration and shock tests enable validation of the



behavior and performance of electronic components used in driver assistance and vehicle safety systems.

For capturing shock data, the new generation of m+p VibPilot front end, which is equipped with both Ethernet and USB connections, and has an increased sampling frequency of up to 204.8kHz, is a better fit for daisy-chained systems and for short-term/hard shock capture. By coupling two front ends (up to four m+p VibPilot front ends can be synchronized), Continental Automotive can very easily measure vibration/shock channels and electric channels in order to check the proper operation of circuits and components under test.

An additional feature in the m+p Analyzer software computes SRS (shock response spectrum) online or in post-processing.



ABOVE: Half-sine shock measured with the m+p Analyzer. Data can be processed online or offline

LEFT: The m+p technology coupled with the Avco system has provided many benefits for the engineers

The front end used with the m+p Analyzer software could either be the compact four/eight-channel m+p VibPilot, the high-channel count m+p VibRunner, the standalone multi-channel m+p VibMobile or the NI Compact DAQ mobile measurement system.

Continental Automotive's plant in Toulouse has been using m+p systems for years. The first four-channel m+p VibControl-m+p VibPilot system was purchased in 2005, the second in 2011, and a third in 2012. In 2014, it upgraded the three systems from four to eight channels. In 2017 Continental Automotive invested in an eight-channel system including the m+p VibPilot Ethernet front end and the m+p Analyzer software to instrument the Avco machine. This year, a

fourth eight-channel m+p VibControl-m+p VibPilot system was added.

Christophe Barthes, manager of the environmental testing department at Continental Automotive Toulouse, notes that the team are extremely satisfied with the many different applications available within m+p VibControl and m+p Analyzer software. Equipment is updated on a regular basis with new functionalities available through the Microsoft Windows updates. Users' unique requests are taken into account, as are new vibration standards. Barthes also notes the excellent technical support from training to consultancy to user support and calibration from m+p international.

m+p VibPilot front ends are calibrated every year on-site by both m+p international and Sopemea according to ISO 17025.

Beyond the Toulouse plant, other Continental Automotive sites in France and worldwide are also equipped with m+p international's systems. ◀