

# VIBRATION TEST AND CONTROL

A wide array of testing strategies is employed today in both RDT&E and production to determine the reliability/quality of products and components. Reliability testing requires induced environments to replicate or simulate natural environments of the unit under test (UUT). Typical test activities include:

- Accelerated Life Testing
- Accelerated Stress Testing
- Life Cycle Testing
- Squeak & Rattle

In cooperation with our strategic partner Vibration Research Corporation, Brüel & Kjær offers a comprehensive suite of tools to run and control vibration test profiles for reliability testing. The basic software modules available are:

- Sine control to run swept and/or fixed frequency sine vibration tests and Sine Resonance Track & Dwell (SRTD)
- Random control to run con-

trolled spectrum random tests

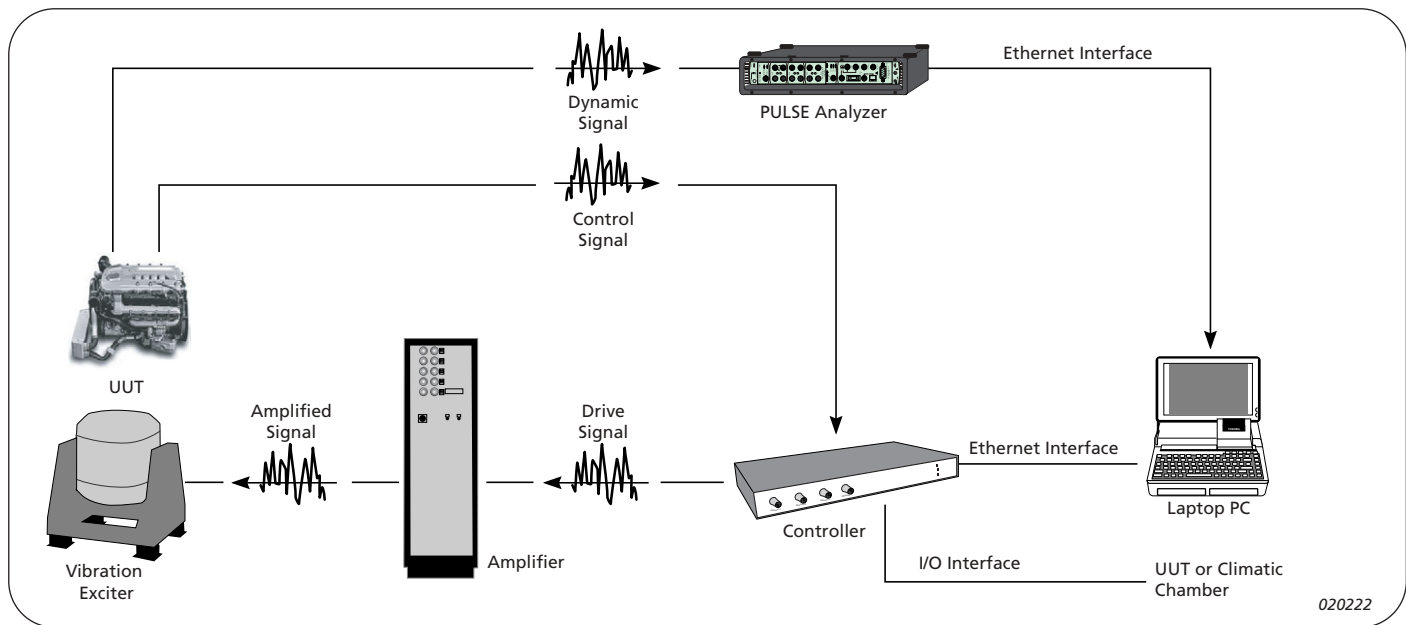
- Classical Shock control to run standard shock pulses and user-defined or Shock Response Spectrum (SRS) synthesised transient pulses
- Sine on Random (SOR) to run mixed mode tests with sine tones superimposed on random background
- Random on Random (ROR) to run tests with swept random "tones" superimposed on random background
- Field Data Replication (FDR) to reproduce, in the time domain, recorded field data in the test lab

The high performance, intuitive human interface and test versatility makes the controller equally suited for RDT&E and production.

Type 1059 Front-end connects to the PC via Ethernet with no PC cards required. It has built-in ICP®/DeltaTron® conditioning with TEDS.



Picture Courtesy of Team Corp.



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## APPLICATION SOFTWARE

Please see page 52 for overview

## GENERAL OPTIONS SOFTWARE

- BZ 5423** Remote Option – I/O interface, includes abort button
- BZ 5416** Web and e-mail Option
- BZ 5415** ActiveX® Option

## BZ 5417

## BZ 5424

## BZ 5432

Alternate Units Option  
Net VibrationVIEW (per seat)  
General Options Bundle incl. all SW listed above except BZ 5424

## ANALYZERS

Basic bundle with FFT 3560 C-S11  
Basic bundle for acoustic measurements (Squeak & Rattle) min. 4 channels  
3560 C-S8

## EXCITER SYSTEMS

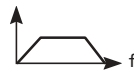
Please see page 52 for overview

## Production Test Screening (1 In/1 Out)

1059 A  
BZ 5405  
BZ 5423  
BZ 5415

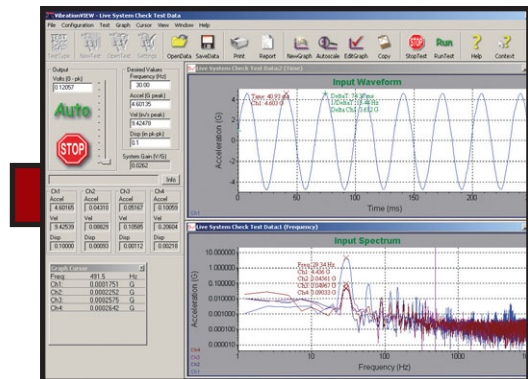
For production test screening employing standard random gaussian spectrum.

- ActiveX® interface for one-click test start and end. Automated report generation
- I/O Interface to communicate with UUT or other test equipment
- Multi-level password security



\* One year SW maintenance

A comprehensive line of safety features is incorporated in the system to protect the UUT and the exciter system. Safety features include input overload, open loop, loss of control signal and smooth failure shutdown

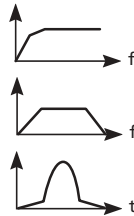


## Vibration Test and Control (4 In/1 Out)

1059 D  
BZ 5428  
BZ 5402

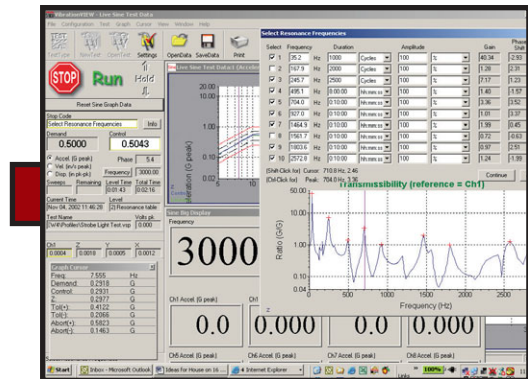
For meeting standard RDT&E test requirements and to establish proof of quality according to standards such as MIL, DIN, ISO, IEC, ASTM, etc.

Is ideal for varied test requirements incorporating sine sweep, random, classical shock, transient waveform control, SRTD and SOR.



\* One year SW maintenance

Resonance tables are generated based on a sine sweep for Sine Resonance. A variety of automated control strategies are applicable including resonance tracking with constant amplitude for fatigue testing

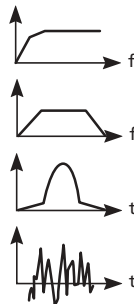


## Vibration Test and Control (16 In/4 Out)

1059 G  
BZ 5430  
BZ 5431  
BZ 5425  
BZ 5422  
BZ 5409  
3560 C-S11

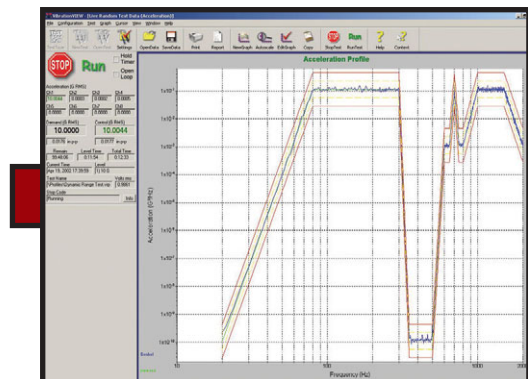
Delivers the control application software to suit practically all RDT&E needs with unsurpassed performance in this price range.

- All application software included
- Extends the upper frequency to 20 kHz
- Offers the advanced analysis capabilities of PULSE



\* One year SW maintenance

This random software performs real-time closed loop control of PSD. The controller's high dynamic range enables it to meet even the strictest test specifications capable of +90 dB dynamic range

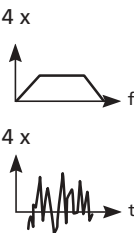


## Four Poster Test and Control (16 In/4 Out)

1059 G  
BZ 5433  
BZ 5434  
BZ 5422  
3560 C-S8

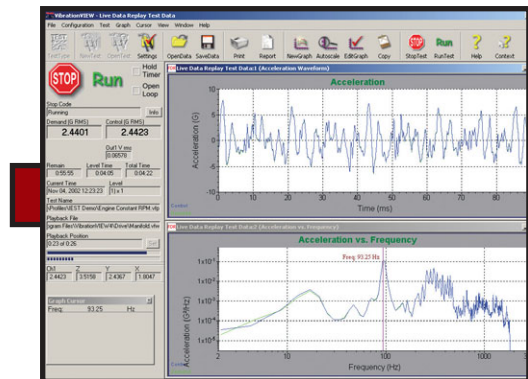
For life cycle testing and Squeak & Rattle applications. A typical application is test of vehicles and other products requiring 4 points of excitation.

- Pre-recorded waveforms can be up to 50 hours long with an impressive 12 kHz sample rate
- Closed loop control applying random or FDR test



\* One year SW maintenance

Field Data Replication was pioneered by Vibration Research. A unique advantage is that over or under testing of the UUT is minimised compared to standard test techniques



**ACCELEROMETERS**  
**EE 0035** Piezoelectric 50 pC/g, stud mounting  
**EE 0033** Piezoelectric 10 pC/g, stud mounting  
**EE 0003** Piezoelectric 17 pC/g, through hole mounting.

**EE 0010** Piezoelectric 3 pC/g, adhesive mounting  
**4506 B** Miniature Triaxial DeltaTron Accelerometer  
**4507 B** DeltaTron Accelerometer  
**4508 B** Miniature DeltaTron Accelerometer

**CABLES**  
**EE 5078** Cable 1.8 m long  
**EE 5072** Cable 3 m long  
**EE 5074** Cable 6 m long  
**EE 5077** Cable 15 m long  
**AO 0531** Microdot to BNC Cable