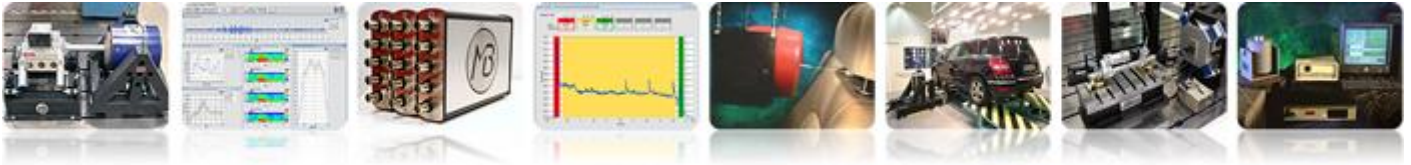


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**MB Dynamics GmbH**  
Technology, Test Processes & Engineering Services

**Newsletter**  
Edition 1/2015



[Squeak & Rattle](#)

[Test & Measurement](#)

[Modal Shaker](#)

[Steering Test Systems](#)

[Calibration Systems](#)

Dear Sir/Madam,

With our newsletter we would like to inform in a short form of new products and applications. For more detailed information please follow the respective link. You have questions or want to discuss your application in person with us? Then please send us your [request by E-mail](#) or contact us directly by phone. We look forward to your call on.

Best Regards

Tobias Achten - MB Dynamics GmbH

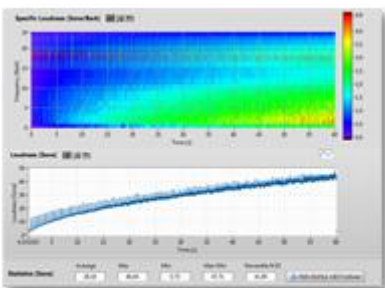
### **Topics of this newsletter:**

**BSR SUITE** - New algorithm for improved objective BSR Testing

**BSR SUITE** - Version 1.5 now supports up to 64 channels for mobile RLDA

**VPR+4D** - One test system helps fulfill multiple OEM test specs

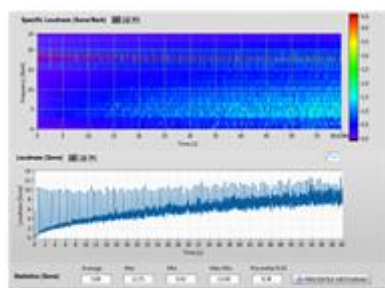
## **BSR SUITE** - New algorithm for objective BSR Testing using Adaptive Background Noise Compensation



No Background Noise Compensation - Loudness is dominated by increasing Background Noise

The use of quiet shaker systems is the basic requirement for BSR testing. Differences in the resulting operating background noise due to environmental background noise, room acoustics and floor conditions in the test room, fixture design and noise radiation from the fixture lead to larger deviations in the measurement results. Typical Squeak & Rattle metrics such as N10 Time Varying Loudness with fixed HP-filters, 1/3 octave

band spectra or OCIAN are strongly influenced by the background noise. **Adaptive Background Noise Compensation (ABNC) over the entire audio range** eliminates the influence of stationary or slow changing background noise without influencing the Loudness measures of overlaid Squeaks & Rattles. Test results are determined by the appearance of Squeaks & Rattles and not by background noise! [Read more...](#)



Random Background Noise compensated - Ticking Noise is determining the Loudness level

### **Features:**

- Time varying Loudness according to DIN45631/A1
- Switchable Adaptive Background Noise Compensation
- Nx Percentile Levels
- Loudness spectra over time
- Real-time analysis & testing against thresholds and reference spectra
- Time synchronized playback
- Import of Audio data in WAV-format

### **Key Differentiators:**

- Improves repeatability & comparability of BSR tests in different test environments
- Reduces influence of room acoustics
- Improves distinctiveness of good & noisy test items
- Easy & safe: Works with different road profiles and test items without any adjustments

## BSR SUITE - Version 1.5 now support up to 64 channels for mobile Road Load Data Acquisition

**BSR SUITE** is the complete solution for all measurement tasks in the fields of Squeak & Rattle and Sound Quality testing. Version 1.5 now supports up to 64 input channels with switchable IEPE-supply for Road Load Data Acquisition and Drive-File generation. In combination with the compact and mobile hardware and the intuitive user interface Road Load Data Acquisition becomes easy and safe.



64 channel USB-frontend for Sound & Vibration  
24-bit A/D, IEPE supply, RPM input, dig I/O



Drive-File development - Cut & Paste from different test tracks, PSD calculation & level statistics

Drive-File generation for full vehicles, subsystems and components based on proven algorithms, integrated know-how and procedures to transfer vibration conditions from the road to the lab improve the simulation quality and correlation to road testing. Arithmetic combinations of different input channels enable measurements of relative accelerations, velocities and displacements.

[Read more...](#)

### Features:

- 4-64 input channels with IEPE
- 24-bit A/D, up to 105.4kHz
- Sound & Vibration recording to HD in parallel to real-time analysis
- Vibration gRMS, CREST, PSD & Sound analysis in real-time
- Cut&Paste, filter, limiter, sample rate conversion, drift compensation
- Data formats: TXT,CSV,RPCIII, WAV...

### Key Differentiators:

- Compact & mobile
- Predefined RLDA setups for components & full vehicles
- Preview & signal statistics enable quick check of measurement data in the field
- Build-in know-how and proven algorithms for Drive-File development
- Virtual channels enable measurement of relative motions

## VPR+4D - One test system helps fulfill multiple OEM test specs



The **VPR+4D** shaker system allows simultaneous multi-axis excitation and single axis excitation in different directions in one test system. The typical operating background noise of less than 35dB(A) does not mask any Squeak & Rattle noises and enables effective root cause analysis and objective acoustic measurements. The system can be operated in an environmental chamber

from -20°C to +60°C. The VPR+4D thus fulfills multiple OEM test specs for Squeak & Rattle, durability and S&R aging. Simple operation, rapid changeover times from VPR to 4DOF mode and low maintenance make the VPR+4D an ideal tool for product validation during design and development as well as for production verification and in-plant quality audits.

[Read more...](#)



### Features:

- 5 degree-of freedom response in VPR mode with MIMO-controller
- Sequential excitation in x-,y- & z-axis
- Typical background noise <35dB(A)
- Payload: 225kg (standard)
- Frequency range: 2Hz-400Hz
- Forces up to 16000N
- Displacement up to 44mm

### Key Differentiators:

- Extremely quiet!
- Fulfills requirements of different OEM tests specs
- Operation inside environmental chamber from -20°C to +60°C
- Powerful enough for durability and S&R aging tests
- Rapid changeover times without turning the test item

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