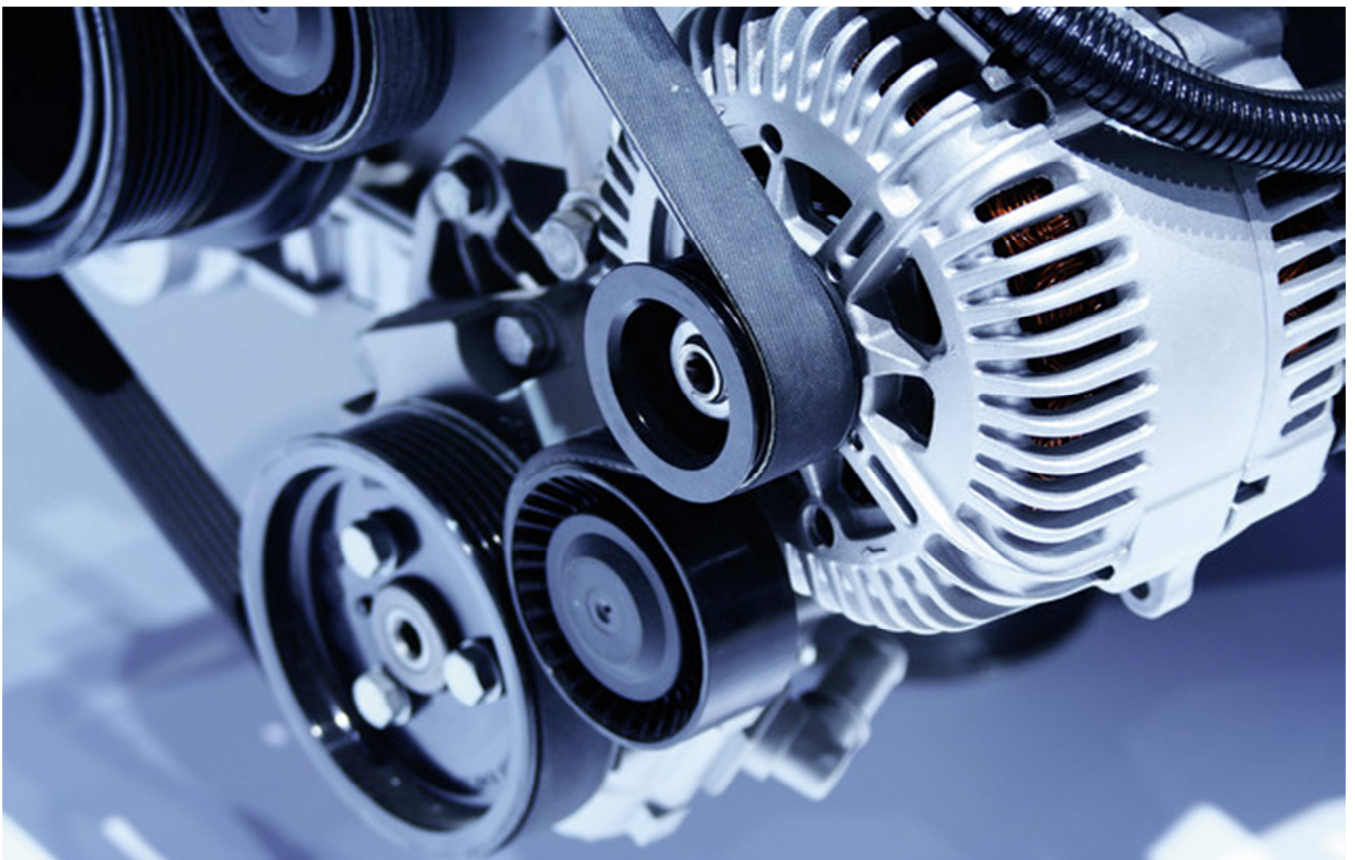


BOSCH Car Generator Sound Test

Application Note #13



Questi prodotti sono distribuiti e supportati in Italia da:



Instrumentation Devices Srl

Via Acquanera 29 - 22100 COMO (Italy)

ph +39 031 525 391- fax +39 031 507 984

info@instrumentation.it - www.instrumentation.it

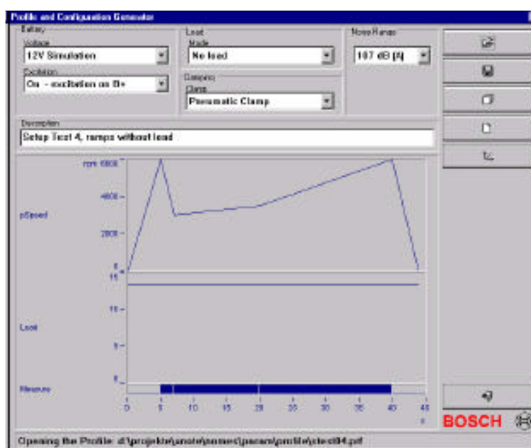
Efforts to reduce noise pollution from cars are not limited to tires and exhaust systems alone. Automobile alternators and generators, with their high rotation speed, are currently also coming more and more into the focus of measurement engineers. On high-speed roads, in particular, sound emissions play a crucial role. There's no question that BOSCH, one of the world's leading producers of car components, invests all its know-how into the development of quieter car generators.



BOSCH component test stand with tested alternator

To test such generators, BOSCH has chosen the imc μ -MUSYCS measurement system to create a sound and vibration test stand.

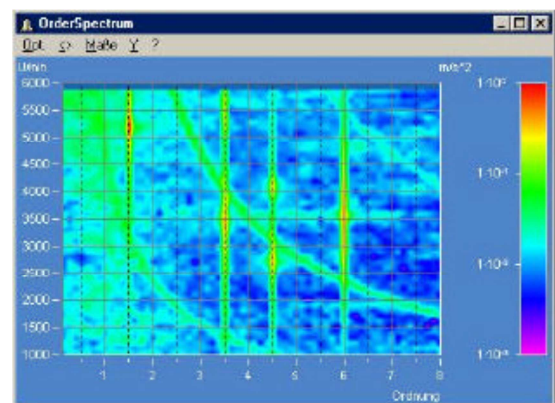
With the help of the test rig, accelerometer signals, microphone signals and RPM signals can be measured at the same time under different load and speed conditions. Due to its online calculation capabilities, the PC connected with the measurement system can directly display the real-time results.



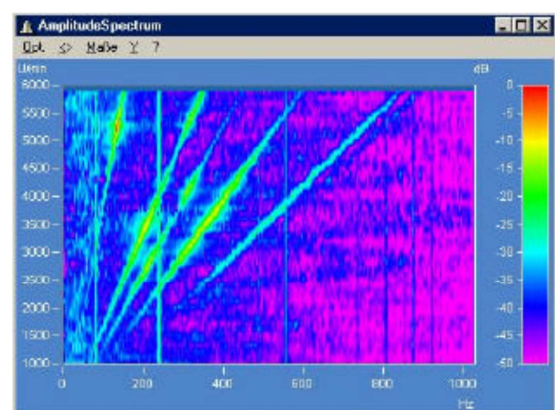
Sound level and sound intensity calculations can also be performed as Order-spectra, Fast-Fourier Transformations or digital filters. In conjunction with this test bench, which can produce every possible operating point, the real behavior of the generator can be observed and examined.

To standardize the results of the tests, a BOSCH internal database can be used to verify the results with current standards or internal BOSCH quality requirements.

Results of measurement or online calculations can be transferred to imc FAMOS. A BOSCH company license of the imc offline analysis and evaluation program provides every engineer and technician with the performance which that program offers.



A sound signal order spectrum in conjunction with the RPM signal



A amplitude spectrum of the same signal as above