m+p SO Analyzer
Vehicle Pass-by Noise Testing

m+p international supplies a complete system for vehicle pass-by noise homologation. Our market-leading pass-by noise testing system based on m+p SO Analyzer uses GPS components for both position and velocity information, thus providing maximum accuracy and repeatability. It allows full operation from within the car by just one person. The portable system frees the user from cumbersome and error-prone manual triggers and radar guns and allows immediate reverse runs and instantaneous pass/fail criteria.

The portable acquisition system is fully expandable to cover other NVH, modal, rotating machinery and acoustic analysis requirements when not in use for pass-by noise testing.

Key Features

- Specially developed GPS system for pass-by noise testing
- Ease of use, quick analysis and access to test results
- Comprehensive online and post-processing facilities
- One person operation from driver’s seat with automatic trigger of data runs
- Wizard-driven set-up for minimum errors in operation
- Integrated data base of results and fully compliant reports
- Built-in calculators, guidance and validation for vehicle types, weight and power requirements
- Detailed 3D waterfall analysis for noise source ranking and identification
- Throttle pedal input for full-throttle monitoring
- Engine speed input
- 2 cm positional accuracy
- 0.1 km/h velocity accuracy
- Sound level meters in accordance with IEC 61672-1
- Vehicle position mapped and plotted during test run
- In-car display of vehicle speed
- Auto reverse selection for return pass run
- Weather station for outdoor temperature, wind speed and humidity
- Portable acquisition systems can be used for other NVH, Modal and Acoustic analysis testing when not in use as pass-by noise system
- 4/8-channel portable data acquisition system - expandable
Operation

With the reduction of system components, i.e. no radar or light beams, the set-up for the pass-by noise system is easily performed by one operative in a short space of time. The in-car system can be configured prior to entering the test track, the out-car system simply needs connection to the sound meters and weather station. Every part of the system has been planned and configured to minimise operation time and reduce test errors.

- Configure system components in-car and out-car ready for testing
- Start and stop ‘gates’ are set by driving the car to relevant positions and selecting software confirmation
- System then sets nominal reference line based upon start and stop positions, this line will be center line of test track
- Weather station data is updated from external weather station and data stored with test details
- Microphones can be checked and calibrated by the system using a standard calibrator

Applications

- Automotive legal pass-by noise testing
- Automotive development pass-by noise testing
- Truck pass-by noise testing
- Rail-based pass-by noise testing
- Tyre testing

Configuration of the GPS-based pass-by noise testing system
Operating System

- Microsoft Windows XP Pro/7 Pro 32 or 64 bit

m+p SO Analyzer is a product of m+p international. All trademarks and registered trademarks are the property of their respective holders. Specifications subject to change without notice.