

PRODUCT DATA

DTS Exterior Sound Simulator Type 8601-T

DTS Exterior Sound Simulator Type 8601-T is a PULSE™ NVH Vehicle Simulator module that is used for auralising the exterior sound of a moving vehicle as it would be experienced by an external observer. The vehicle can be performing any driving manoeuvre (starting and moving away in a car park, rapid acceleration, etc.) in any scenario (for example, a town) and the observer can also make any trajectory, for example, stationary, or a pedestrian walking through the scenario.



Uses

- Designing and evaluating appropriate sounds for Quiet Vehicles (electric, hybrid and REEV (Range Extended Electric Vehicle))
- Exterior pass-by and sound quality simulation for ICE vehicles (Internal Combustion Engines)

Features

- User predefined paths for observer and target car
- Simple data preparation tools
- Includes a town visual scenario
- User-definable traffic sound and behaviour
- Binaural or 3D sound replay

Capabilities

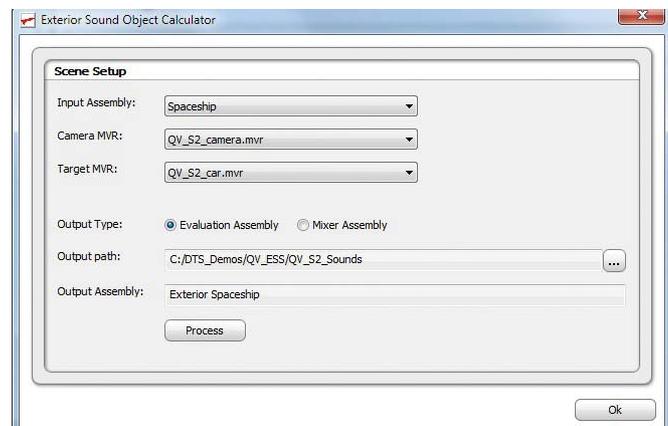
The sound sources assigned to the moving vehicle can either be measured (for example, from a pass-by source decomposition test on an ICE vehicle) or artificially created (for example, to represent potential warning sounds emitted by loudspeakers on an electric vehicle).

The Exterior Sound Object Calculator (see Fig. 1) transforms the source strengths to contributions at the observer's location taking into account factors such as the speed, load and rpm of the target vehicle, the relative speed and heading of the source and observer, the directivity of the source and the head-related transfer functions to the observer. This means that distance attenuation, pan effects, Doppler shift and source attenuation are all included in the synthesized sound just as they would be experienced by an observer in the real world.

Additional environmental sounds (traffic noise, crossing warnings and other soundscape features) can be added to the simulation to make sure that the aural and visual cues are as realistic as possible.

Once the model has been created, you can use your existing DTS modules to modify the sounds to create potential alternatives (Type 8601-B), see Fig. 2, or perform a controlled Jury Evaluation to choose the most preferred sound using single (Type 8601-G) or multi-juror (Type 8601-H) interfaces (see Fig. 3).

Fig. 1 Exterior Sound Object Calculator



You can also export your project for downloading to an embedded sound generation system running on a real vehicle for final on-road demonstration.

Fig. 2 Typical screenshot from Type 8601-B

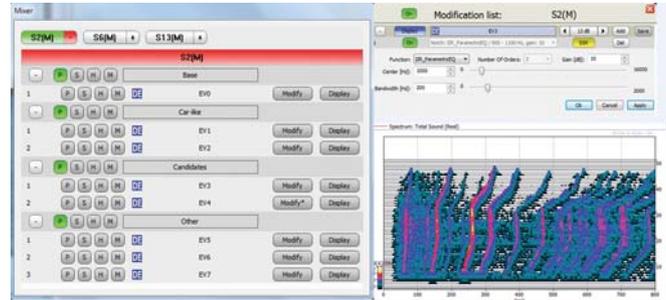


Fig. 3 Typical screenshot from Type 8601-G



Specifications

DTS Exterior Sound Simulator Type 8601-T is an optional module for the [PULSE NVH Vehicle Simulator Type 3644 system](#). Type 8601-T is used for auralising the exterior sound that

would be experienced by a pedestrian as a vehicle is driven around a realistic virtual scenario.

During engineering, contributions from the various sources can be determined using [source path contribution tools](#).

Ordering Information

Type 8601-T-X* DTS Exterior Sound Simulator

REQUIRED SOFTWARE

Type 8601-A-X* DTS Core and Visuals

SYSTEMS

Type 3644-A Desktop NVH Simulator, Jury and Engineering

Type 3644-B Desktop NVH Simulator, Jury only

Type 3644-C Desktop NVH Simulator, Engineering only

OTHER NVH SIMULATOR AND SOURCE PATH CONTRIBUTION SOFTWARE

Type 8601-E-X* DTS Presenter, including Mixer and Jury (no modifications)

Type 8601-H-X* DTS Advanced Jury Evaluation

Type 8601-L-X* DTS Source Level Data Preparation

Type 8601-M-X* DTS Road Creator

Type 8601-P-X* DTS Contribution Analyzer

Type 8601-S-X* SPC Time Insight

Type 7798-A-X* SPC Viewer
Type 7798-B-X* SPC Mount Stiffness and Matrix Methods

Type 7798-C-X* SPC Matrix Method with PCD

Type 7798-D-X* SPC Multiple Coherence Method

Type 7798-E-X* Time Domain SPC

OPTIONAL HARDWARE

Type 4100 Sound Quality Head and Torso Simulator

Type 4101 Binaural Microphone

HT-0018 STAX SRS-3050 II Electrostatic Headphone System

HT-0019 STAX SR-303 Classic Electrostatic Headphones

UA-1692 ECCI Steering Wheel and Pedals Set

SUPPORT PRODUCTS

M1-8601-T-X Software Maintenance and Support Agreement for DTS Exterior Sound Simulator

The installation of DTS Exterior Sound Simulator Type 8601-T is **always** handled as a customer-specified project. Please contact your local Brüel & Kjær representative

* X indicates the license model, either N: node-locked or F: floating license

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