

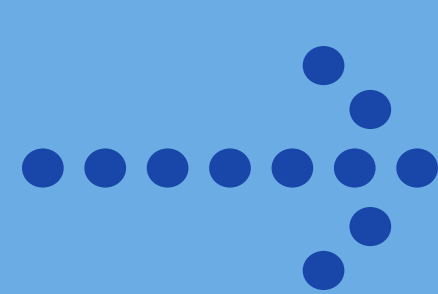
Creating an Automotive EMC Test Plan



Automotive suppliers are responsible for creating an EMC test plan that complies with OEM requirements - before conducting any formal verification or validation via testing operations.

Test Categories

Tests can be categorized as necessary for:



Design Verification (DV)

Product Validation (PV)

Any testing outside of these parameters is categorized as Engineering Validation (EV) and will not be viewed as an official segment of the formal results.

What to Include in the Test Plan?

The test plan should clearly define:

- 1 The product to be tested
- 2 The product's options or variants
- 3 The exact sample size for each test (Two components are typically required at a minimum, although this can vary with specific OEM requirements.)



The test plan must describe all of the components and their normal functions/modes of operation, broken down by:

Inputs/outputs required to trigger the device's normal modes of operation, plus any relevant details on modes that isolate broadband or narrowband noise

Methods of measuring component response to input/output actions to establish a baseline for normal operation, such as +/- tolerances

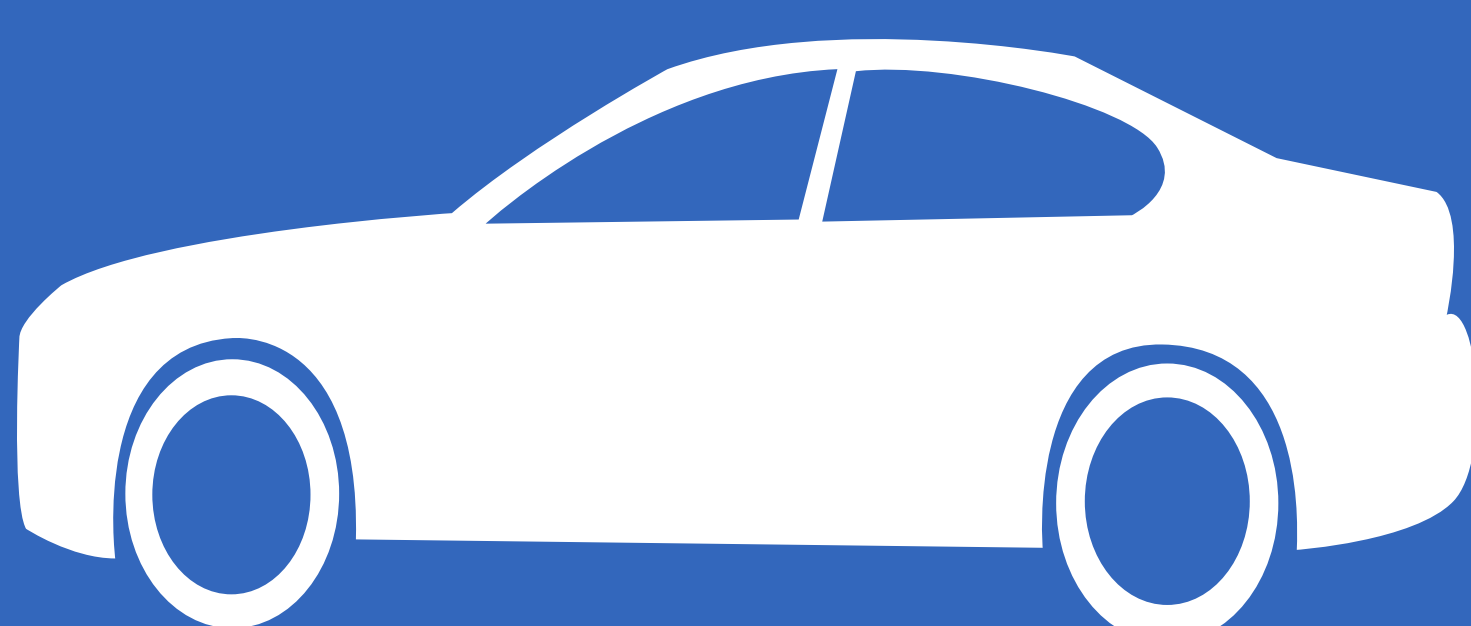
Signals defined by pin-out diagrams

Defined orthogonal orientations for the device (depicted with photographs or diagrams)

Information on power or ground lines requiring transient tests

Performance requirements based on the four performance-level definitions as described in ISO 11451-1 Annex A (whether normal operation is required during and/or after each test, and to what extent)

Other details that may be incorporated include information about how a component was manufactured, supplier data, environmental conditions for tests, pass/fail criteria, severity levels and relevant safety procedures



Third-party EMC Labs

When working with a third-party lab, consider:

Who provides equipment for generating signals during the test process?

What response monitoring protocols will be utilized (particularly for any tests conducted in an EMC chamber)?

Lab personnel can review the unfinished plan and make suggestions, but cannot conduct any advanced testing.

Suppliers should provide software, equipment or any other informational/operational collateral necessary for the lab to understand the component and properly conduct testing.

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