



SURFACE VEHICLE STANDARD

J1812™

SEP2018

Issued 1988-10
Revised 2013-06
Stabilized 2018-09

Superseding J1812 JUN2013

Function Performance Status Classification for EMC Immunity Testing

RATIONALE

The document has reached its Five-Year Review. The SAE EMC Standards Committee agreed at its April 26, 2018, meeting to initiate an action to "Stabilize" SAE J1812.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE Electromagnetic Compatibility (EMC) Standards Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2018 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE J1812_201809

SAE values your input. To provide feedback on this Technical Report, please visit http://standards.sae.org/J1812_201809

Documents
Document Sharing Hub

TABLE OF CONTENTS

1.	SCOPE.....	2
2.	REFERENCES.....	2
2.1	Applicable Documents	2
3.	DEFINITIONS	3
4.	MEASUREMENT PHILOSOPHY	3
5.	ESSENTIAL ELEMENTS OF FUNCTION PERFORMANCE STATUS CLASSIFICATION (FPSC)	4
5.1	Test Signal and Test Method	4
5.2	Function Performance Status.....	4
5.3	Test Signal Severity Level.....	5
6.	NOTES.....	5
6.1	Marginal Indicia	5
APPENDIX A	ILLUSTRATION OF FUNCTION PERFORMANCE STATUS CLASSIFICATION.....	6
APPENDIX B	APPLICATION OF FUNCTION PERFORMANCE STATUS CLASSIFICATION.....	7
FIGURE A1	ILLUSTRATION OF FUNCTION PERFORMANCE STATUS CLASSIFICATION.....	6
TABLE B1	ILLUSTRATION OF FPSC WITH 3 CATEGORY OF FUNCTIONS.....	7
TABLE B2	EXAMPLE OF SEVERITY LEVELS - (IMMUNITY TO CONDUCTED TRANSIENTS)	8
TABLE B3	EXAMPLE OF SEVERITY LEVELS – IMMUNITY TO CONDUCTED TRANSIENTS PULSE 1	8
TABLE B4	EXAMPLE OF SEVERITY LEVELS - (RADIATED IMMUNITY TEST METHOD)	8
TABLE B5	EXAMPLE OF SEVERITY LEVELS FOR BULK CURRENT INJECTION TEST METHOD FOR 3 FREQUENCY BANDS	8
TABLE B6	EXAMPLE OF SEVERITY LEVELS - ESD - DIRECT CONTACT DISCHARGE.....	9

1. SCOPE

This SAE Standard provides a general method for defining the acceptable function performance status classification for the functions of automotive electronic devices upon application of the test conditions specified as described in appropriate EMC immunity test standards (for example, SAE J1113 and SAE J551). Testing of devices could be performed either on or off vehicles. Appropriate test signal and methods, Function Performance status, and test signal severity level would have to be specified in the individual cases.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

- | | |
|--------------|--|
| SAE J551-1 | Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz) |
| SAE J551-11 | Vehicle Electromagnetic Immunity - Off-Vehicle Source |
| SAE J551-12 | Vehicle Electromagnetic Immunity - On-Board Transmitter Simulation |
| SAE J551-13 | Vehicle Electromagnetic Immunity - Bulk Current Injection |
| SAE J551-15 | Vehicle Electromagnetic Immunity - Electrostatic Discharge (ESD) |
| SAE J551-17 | Vehicle Electromagnetic Immunity - Power Line Magnetic Fields |
| SAE J1113-1 | Electromagnetic Compatibility Measurement Procedures and Limits for Components of Vehicles, Boats (up to 15 m), and Machines (Except Aircraft) (16.6 Hz to 18 GHz) |
| SAE J1113-2 | Electromagnetic Compatibility Measurement Procedures and Limits for Vehicle Components (Except Aircraft) - Conducted Immunity, 15 Hz to 250 kHz - All Leads |
| SAE J1113-3 | Conducted Immunity, 250 kHz to 400 MHz, Direct Injection of Radio Frequency (RF) Power |
| SAE J1113-4 | Immunity to Radiated Electromagnetic Fields - Bulk Current Injection (BCI) Method |
| SAE J1113-11 | Immunity to Conducted Transients on Power Leads |
| SAE J1113-12 | Electrical Interference by Conduction and Coupling - Capacitive and Inductive Coupling via Lines Other than Supply Lines |
| SAE J1113-13 | Electromagnetic Compatibility Measurement Procedure for Vehicle Components - Part 13: Immunity to Electrostatic Discharge |
| SAE J1113-21 | Electromagnetic Compatibility Measurement Procedure for Vehicle Components - Part 21: Immunity to Electromagnetic Fields, 30 MHz to 18 GHz, Absorber-Lined Chamber |