



SURFACE VEHICLE STANDARD

J1113™-4**FEB2020**Issued 1995-04
Revised 2020-02

Superseding J1113-4 APR2014

(R) Immunity to Radiated Electromagnetic Fields - Bulk Current Injection (BCI) Method

RATIONALE

This test method is being revised as required by SAE Five-Year Review. This revision of this method will reference the international standard ISO 11452-4. However, since the differential bulk current injection (DBCI) is not yet included in the current version of the ISO 11452-4, it will be retained in this revision with modifications to meet the latest practice.

TABLE OF CONTENTS

1.	SCOPE.....	2
2.	REFERENCES.....	2
2.1	Applicable Documents	2
2.1.1	SAE Publications.....	2
2.1.2	IEEE Publications.....	2
2.1.3	ISO Publications.....	2
3.	DEFINITIONS	2
4.	DBCI TEST METHOD.....	3
5.	NOTES	4
5.1	Revision Indicator.....	4
APPENDIX A	EXAMPLE OF TEST SEVERITY LEVELS (INFORMATIVE)	5
Figure 1	Typical DBCI test configuration.....	3

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 © 2020 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 J1113_4_202002

For more information on this standard, visit
https://www.sae.org/standards/content/J1113/4_202002

Documents

Document Sharing Hub

1. SCOPE

This SAE Standard defines a method for evaluating the immunity of automotive electrical/electronic devices to radiated electromagnetic fields coupled to the vehicle wiring harness. The method, called bulk current injection (BCI), uses a current probe to inject RF onto the wiring harness in the frequency range of 1 to 400 MHz. BCI is one of a number of test methods that can be used to simulate the electromagnetic field.

The test method refers to ISO 11452-4 (please refer to ISO 11452-4 for test procedures).

In addition to ISO 11452-4, this test method also includes a differential bulk current injection (DBCI) test. DBCI is described in Section 4 of this document.

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 +1 724-776-4970 (outside USA), www.sae.org.

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 J1812 Function Performance Status Classification for EMC Immunity Testing

2.1.2 IEEE Publications

Available from IEEE Operations Center, 445 and 501 Hoes Lane, Piscataway, NJ 08854-4141, Tel: 732-981-0060, www.ieee.org.

IEEE Std C95.1 IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz

2.1.3 ISO Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ISO 11452-1 Road Vehicles - Component Test Methods for Electrical Disturbances from Narrowband Radiated Electromagnetic Energy - Part 1: General Principles and Terminology

ISO 11452-4 Road Vehicles - Component Test Methods for Electrical Disturbances from Narrowband Radiated Electromagnetic Energy - Part 4: Harness Excitation Methods

3. DEFINITIONS

Refer to SAE J1113-1 and ISO 11452-1.