ISO 11452-1:2025-06 (E)

Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 1: General principles and terminology

Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 General aim and practical use ... **6**

5 General test conditions ... **7**
5.1 General ... 7
5.2 Test temperature ... 8
5.3 Supply voltage ... 8
5.3.1 Low voltage (LV) power supply ... 8
5.3.2 HV DC power supply (excluding charger) ... 8
5.3.3 Charger power supply (a.c. or d.c.) for HV battery ... 8
5.4 Modulation ... 8
5.5 Dwell time ... 9
5.6 Frequency step sizes ... 9
5.7 Definition of test severity levels ... 10
5.8 Evaluation of test instrumentation uncertainties ... 10

6 Instrumentation ... **10**
6.1 Grounding and shielding ... 10
6.2 AN, HV-AN, AMN, and AAN ... 10
6.3 Power supply ... 11
6.3.1 LV power supply ... 11
6.3.2 HV DC power supply (excluding charger) ... 11
6.3.3 Charger power supply (a.c. or d.c.) ... 11
6.4 Load simulator ... 11
6.5 Test signal quality ... 11

7 Test procedure ... **12**
7.1 Test plan ... 12
7.2 Test methods ... 12
7.2.1 General ... 12
7.2.2 Substitution ... 12
7.2.3 Closed loop levelling ... 13
7.2.4 Disturbance application process ... 13
7.3 Test report ... 14

Annex A (normative) **Function performance status classification (FPSC)** ... **15**

Annex B (normative) **Artificial network (AN), high voltage artificial network (HV-AN), artificial mains network (AMN) and asymmetric artificial network (AAN)** ... **18**

Annex C (normative) **Constant peak test level for amplitude modulation** ... **27**

Annex D (informative) **Example of load simulator design** ... **30**

Annex E (informative) **Broadband test signal generation** ... **33**

Annex F (informative) **Remote/local grounding** ... **42**

Annex G (informative) **Evaluation of test instrumentation uncertainties** ... **44**

Bibliography ... **47**