

# ISO 11452-4:2020-04 (E)

## Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 4: Harness excitation methods

---

<b>Contents</b>	<b>Page</b>
Foreword.....	iv
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Test conditions</b> .....	<b>1</b>
<b>5 Test location</b> .....	<b>2</b>
<b>6 Test instrumentation</b> .....	<b>2</b>
6.1 BCI test method.....	2
6.1.1 General.....	2
6.1.2 Injection probe.....	3
6.1.3 Current measurement probe.....	3
6.1.4 Stimulation and monitoring of the DUT.....	3
6.2 TWC test method.....	3
6.2.1 General.....	3
6.2.2 Tubular wave coupler.....	3
6.2.3 50 $\Omega$ load resistor.....	4
6.2.4 Stimulation and monitoring of the DUT.....	4
<b>7 Test set-up for DUT powered by an unshielded power system</b> .....	<b>4</b>
7.1 Ground plane.....	4
7.2 Power supply and AN.....	4
7.3 Location of the DUT.....	5
7.4 Location of the test harness.....	5
7.5 Location of the load simulator.....	5
7.6 Location of the harness excitation.....	6
7.6.1 BCI test method.....	6
7.6.2 TWC test method.....	6
<b>8 Test setup for DUT powered by a shielded power system</b> .....	<b>10</b>
8.1 Ground plane.....	10
8.2 Power supply and AN, HV-AN, AMN and AAN.....	10
8.3 Location of DUT.....	10
8.4 Location of test harness.....	11
8.5 Location of load simulator.....	12
8.6 Location of the harness excitation.....	12
8.6.1 BCI test method.....	12
8.6.2 TWC test method.....	13
<b>9 Test procedure</b> .....	<b>26</b>
9.1 General.....	26
9.2 Test plan.....	26
9.3 Test methods.....	26
9.3.1 BCI test method.....	26
9.3.2 Tubular wave coupler test method.....	29
9.4 Test report.....	30
<b>Annex A (normative) Calibration configuration (current injection probe calibration)</b> .....	<b>32</b>
<b>Annex B (informative) Test set-up transfer impedance</b> .....	<b>34</b>
<b>Annex C (informative) Remote/local grounding</b> .....	<b>40</b>
<b>Annex D (informative) Function performance status classification (FPSC)</b> .....	<b>42</b>