

# ISO 11451-4:2022-05 (E)

## Road vehicles - Vehicle 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</b>	<b>Scope</b> .....	<b>1</b>
<b>2</b>	<b>Normative references</b> .....	<b>1</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>1</b>
<b>4</b>	<b>Test conditions</b> .....	<b>1</b>
<b>5</b>	<b>Test location</b> .....	<b>2</b>
<b>6</b>	<b>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.....	4
6.2.3	50 $\Omega$ load resistor.....	4
6.2.4	Stimulation and monitoring of the DUT.....	4
<b>7</b>	<b>Test set-up</b> .....	<b>4</b>
7.1	BCI Test methods.....	4
7.1.1	Substitution method.....	4
7.1.2	Closed-loop method with power limitation.....	5
7.2	TWC Test methods.....	6
<b>8</b>	<b>Test procedure</b> .....	<b>7</b>
8.1	General.....	7
8.2	Test plan.....	7
8.3	Test methods.....	8
8.3.1	BCI test method.....	8
8.3.2	Tubular wave coupler test method.....	10
8.4	Test report.....	11
<b>Annex A (normative) Calibration configuration (current injection probe calibration)</b> .....		<b>13</b>
<b>Annex B (informative) Test set-up transfer impedance</b> .....		<b>15</b>
<b>Annex C (informative) Function performance status classification (FPSC)</b> .....		<b>22</b>