

ISO 11451-5:2023-05 (E)

Road vehicles - Vehicle test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 5: Reverberation chamber

Contents		Page
Foreword		v
1 Scope	1	1
2 Normative references		1
3 Terms and definitions		1
4 Test conditions		6
5 Test location		6
5.1 Reverberation chamber description		6
5.2 Working volume		7
6 Test instrumentation		7
6.1 General		7
6.2 Field generating device		8
6.3 Field probes		8
6.4 Stimulation and monitoring of the device under test (DUT)		8
6.5 Optional: receiving antenna(s) and spectrum analyser		8
6.6 Optional: vector network analyser		9
7 Test set-up		9
7.1 Vehicle placement		10
7.2 Field generating device location - Antenna constraints		10
7.3 Vehicle test configurations		10
7.3.1 Vehicle not connected to the power grid		10
7.3.2 Vehicle in charging mode 1 or mode 2 (AC powered, without communication)		10
7.3.3 Vehicle in charging mode 3 or mode 4 (AC or DC powered, with communication)		13
7.3.4 Vehicle in charging mode through wireless power transmission (WPT)		17
8 Test procedure		19
8.1 General		19
8.2 Stirring configurations		20
8.3 Test plan		20
8.4 Test methods		20
8.5 Reverb method with substitution method power control		23
8.5.1 Reverb reference points		23
8.5.2 Substitution method with empty chamber calibration		25
8.5.3 Substitution method with calibration including the vehicle		29
8.6 Test report		31
Annex A (informative) Function performance status classification		32
Annex B (normative) Test level definition		33
Annex C (normative) Reverberation chamber characteristics		36
Annex D (informative) Tuned mode and stirred mode		44
Annex E (informative) TLS method		48

Annex F (informative) Cavity mode method	55
Annex G (informative) Reverb method with closed-loop power control	59
Annex H (informative) Chamber time constant method	61
Annex I (informative) VNA method	67
Annex J (informative) Measurement of total antenna efficiency	74
Annex K (informative) Measurement of diffuse field correction factor Fdf	77
Annex L (informative) Measurement of , Q, and ACS	80
Annex M (normative) Additional AAN(s)	85
Bibliography	86