

Scope of Accreditation

(Measurement Method)

Accreditation Number: VLAC-017-1

Expiration Date: June 15, 2026

[Name of Laboratory]

TÜV Rheinland Japan Ltd.

[Test site name]

Global Technology Assessment Center

[Test site Address]

4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama-shi, Kanagawa, Japan

[Measurement Method]

Emission test

Radiated disturbance: Enclosure Port

Disturbance electric field test

[Test condition] **On the reference ground plane, Measurement distance: 3 m / 10 m**

Measurement Frequency Range: 30 MHz - 1 GHz

[Test condition] **On the reference ground plane, In-vehicle equipment test (1m Method),**

Measurement Frequency Range: 30 MHz - 1 GHz

[Test condition] **Quasi Free Space**

Measurement Frequency Range: 1 GHz - 40 GHz

Disturbance magnetic field strength measurement

[Test condition] **Loop Antenna, 3-axis loop antenna, Isotropic probe**

Disturbance electric power measurement

[Test condition] **Absorbing Clamp**

Conducted disturbance Measurement: AC mains port

Voltage Measurement [Test condition] AMN, High-impedance probe

Conducted disturbance Measurement: Telecommunication port

Voltage Measurement [Test condition] ISN, AAN

Conducted disturbance Measurement: DC power line port

Voltage Measurement [Test condition] AMN, High impedance probe

Electrical transient conduction along supply lines

Immunity test

Electro static discharge test

Contact discharge, Air discharge, Indirect discharge

**Radiated electromagnetic field strength
against in-vehicle**

Measurement frequency: 80 MHz – 6 GHz

Measurement Frequency Range: 200 MHz – 2 GHz

Electrical fast transient/burst (EFT/B)

Mains port, Telecommunication/Signal port

Surge

Mains port, Telecommunication/Signal port

RF conducted interference

Mains port measurement frequency range: 150 kHz – 230 MHz

Telecommunication/Signal port measurement frequency range: 150 kHz – 230 MHz

Bulk current injection test, measurement frequency range: 1 MHz – 400 MHz

Conducted Common mode disturbances

Radiated magnetic field

Pulse magnetic immunity test

Interruptions and Voltage variations

Harmonic current

Harmonic current test

Voltage changes, Voltage fluctuations and Flicker test

Vehicle /In-vehicle equipment test

ESA (In-vehicle equipment) Emission

ESA (In-vehicle equipment) Immunity

Telecommunication equipment performance 1

Intentional Radiators (FCC Part 15 Subpart C)

U-NII without DFS Intentional Radiators (FCC Part 15 Subpart E)

U-NII with DFS Intentional Radiators (FCC Part 15 Subpart E)

Commercial Mobile Services (FCC licensed Radio Service Equipment) (Part 22/Part 24/Part 25 /Part 27)

General Mobile Radio Services (FCC Licensed Radio Service Equipment) (Part 22/Part 90/Part 95 /Part 97/Part 101)

Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment) (Part 96)

Microwave and Millimeter Wave Bands Radio Services (FCC Licensed Radio Service Equipment) (Part 25/Part 30/Part 74/Part 90/Part 95/Part 97/Part 101)

Based on European standards and Canadian standards

Telecommunication equipment performance 2

Magnetic field strength [Test condition] Magnetic probe

Electric field strength [Test condition] Electric field probe

Voluntary EMC Laboratory Accreditation Center Inc.

Scope of Accreditation

(Test standards)

Accreditation Number: VLAC-017-1

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[Name of Laboratory]

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4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama-shi, Kanagawa, Japan

[Test standards]

Emission test

VCCI Technical Requirements: VCCI-CISPR 32:2016^{*1}

J55011(H27), J55014-1(H27), J55015(H29), J55032(H29)^{*1}, CISPRJ 32:2017^{*1}

**Technical requirements under the Electrical Appliances and Materials safety Act appendix 10
Chapter 2/4/5/7/9**

FCC 47 CFR Part 15 Subpart B: ANSI C63.4-2014, ANSI C63.4a-2017 (up to 40 GHz)

FCC 47 CFR Part 18 :FCC MP-5 (February 1986) (up to 40 GHz)

CISPR 11:2015+A1:2016+A2:2019, CISPR 14-1:2020, CISPR 15:2018, CISPR 32:2015+A1:2019^{*1}

EN 55011:2016+A1:2017+A11:2020+A2:2021, EN 55014-1:2017+A11:2020

EN 55015:2013+A1:2015, EN IEC 55014-1:2021, EN IEC 55015:2019, EN 55032:2015+A11:2020^{*1}

AS CISPR 11:2017, AS/NZS CISPR 14.1:2021, AS/NZS CISPR 15:2011,

AS/NZS CISPR 32:2015+A1:2020^{*1}

IEC 61000-6-3:2020, IEC 61000-6-4:2018, IEC 61000-6-8:2020

EN 61000-6-3:2007+A1:2011+AC:2012, EN IEC 61000-6-3:2021, EN 61000-6-4:2007+A1:2011

EN IEC 61000-6-4:2019

AS/NZS 61000.6.3:2021, AS 61000.6.4:2020

JIS C 4411-2:2019, TCVN 7492-1:2018, IEC 62040-2:2016, EN IEC 62040-2:2018

IEC 62236-3-2:2018, EN 50121-3-2:2016+A1:2019, EN 50121-4:2016+A1:2019

ICES-001(Issue 5), ICES-003(Issue 7), CNS 13438(95)

***1: Except for broadcast receiver equipped products.**

The scopes of the following standards groups are limited to emission tests, immunity tests, and harmonic current tests. [refer to Note 1]

IEC 61326-1:2020, IEC 61326-2-1:2020 /-2-2:2020 /-2-3:2020 /-2-4:2020 /-2-5:2020 /-2-6:2020

EN 61326-1:2013, EN 61326-2-1:2013 /-2-2:2013 /-2-3:2013 /-2-4:2013 /-2-5:2013 /-2-6:2013

EN IEC 61326-1:2021, EN IEC 61326-2-1:2021 /-2-2:2021 /-2-3:2021 /-2-4:2021 /-2-5:2021

/-2-6:2021, JIS C 61326-1:2017

IEC 60601-1-2:2014+A1:2020, IEC 60601-2-2:2017 /-2-16:2018 /-2-18:2009 /-2-21:2020

/-2-22:2019 /-2-23:2011 /-2-24:2012 /-2-33:2022 /-2-37:2007+A1:2015 /-2-47:2012

EN 60601-1-2:2015+A1:2021, EN 60601-2-18:2015 /-2-23:2015 /-2-24:2015

/-2-33:2010+A11:2011+A1:2015+A2:2015+A12:2016 /-2-37:2008+A11:2011+A1:2015 /-2-47:2015

EN IEC 60601-2-2:2018 /-2-16:2019 /-2-21:2021 /-2-22:2020

JIS T 0601-1-2:2018, JIS T 0601-2-2:2020 /-2-18:2013 /-2-21:2019 /-2-24:2018 /-2-205:2015

[Note-2] In emission testing, In-Situ are outside the scope of accreditation.

Immunity test

[Including the test standards listed in Note 1.]

CISPR 14-2:2020, CISPR 35:2016*2

EN 55014-2:2015, EN IEC 55014-2:2021, EN 55035:2017+A11:2020*2

AS/NZS CISPR 14.2:2021, AS/NZS CISPR 24:2013+A1:2017

IEC 61000-4-2:2008 /-4-3:2020 /-4-4:2012 /-4-5:2014+A1:2017 /-4-6:2013+COR1:2015 /-4-8:2009 /-4-11:2020, EN 61000-4-2:2009 /-4-3:2006+A1:2008+A2:2010 /-4-4:2012 /-4-5:2014+A1:2017 /-4-6:2014 /-4-8:2010 /-4-11:2004+A1:2017

IEC 61000-4-9:2016 /4-13:2002+A1:2009+A2:2015 /-4-14:1999+A1:2001+A2:2009 /-4-16:2015 /-4-28:1999+A1:2001+A2:2009, EN 61000-4-9:2016 /4-13:2002+A1:2009+A2:2016 /-4-14:1999+A1:2004+A2:2009 /-4-16:2016 /-4-28:2000+A1:2004+A2:2009

EN IEC 61000-4-3:2020 /-4-11:2020

IEC 61000-6-1:2016, IEC 61000-6-2:2016, IEC 61000-6-7:2014*3

EN 61000-6-1:2007, EN 61000-6-2:2005, EN 61000-6-7:2015*4

EN IEC 61000-6-1:2019, EN IEC 61000-6-2:2019

AS/NZS 61000.6.1:2006, AS/NZS 61000.6.2:2006

JIS C 61000-6-1:2019, JIS C 61000-6-2:2019

EN 61547:2009, EN 50130-4:2011+A1:2014, IEC 62236-3-2:2018, IEC 62236-4:2018

EN 50121-3-2:2016+A1:2019, EN 50121-4:2016+A1:2019

*2: Excluding Annex A and Annex H

*3: Excluding IEC 61000-4-29 and IEC 61000-4-34.

*4: Excluding EN 61000-4-29 and EN 61000-4-34.

Harmonic Test in Public Low Voltage Systems

[Including the test standards listed in Note 1.]

IEC 61000-3-2:2018+A1:2020, IEC 61000-3-3:2013+A1:2017+A2:2021

EN 61000-3-2:2014, EN 61000-3-3:2013+A1:2019+A2:2021

EN IEC 61000-3-2:2019+A1:2021, JIS C 61000-3-2:2019

AS/NZS 61000.3.2:2013, AS/NZS 61000.3.3:2012

IEC 61000-6-3:2020, EN 61000-6-3:2007+A1:2011+AC:2012, EN IEC 61000-6-3:2021

AS/NZS 61000.6.3:2021

Electronic equipment in vehicles

ECE R-10 6.5/ 6.6/ 6.7/ 6.8/ 6.9/7(ESA のみ):Rev.6

ECE R116, Annex 9:Rev.1+A1:2023

IEC 61851-21(EMC Part only):2001, EN 61851-21(EMC Part only):2002

CISPR 25:2016, EN 55025:2017, EN IEC 55025:2022, AS/NZS CISPR 25:2010

EN 13309:2010, EN 50498:2010

Telecommunication equipment performance 1

Intentional Radiators (FCC Part 15 Subpart C) :ANSI C63.10-2013 / 2020 (up to 325 GHz)

U-NII without DFS Intentional Radiators (FCC Part 15 Subpart E) : ANSI C63.10-2013 / 2020 (up to 40 GHz)

U-NII with DFS Intentional Radiators (FCC Part 15 Subpart E): ANSI C63.10-2013 / 2020 , FCC KDB Publication 905462 D02 U-NII DFS Compliance Procedures New Rules v02 (April 8, 2016) (up to 40 GHz)

Commercial Mobile Services (FCC licensed Radio Service Equipment) (Part 22/Part 24/Part 25 /Part 27) : ANSI C63.26-2015 (up to 200 GHz)

General Mobile Radio Services (FCC Licensed Radio Service Equipment) (Part 22 /Part 90 /Part 95 /Part 97 /Part 101): ANSI C63.26-2015 (up to 325 GHz)

Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment) (Part 96): ANSI C63.26-2015 (up to 40 GHz)

Microwave and Millimeter Wave Bands Radio Services (FCC Licensed Radio Service Equipment) (Part 25/Part 30/Part 74/Part 90/Part 95/Part 97/Part 101) : ANSI C63.26-2015 (up to 325 GHz)

FCC Part 20, FCC Part 101

KDB 447498 (Calculation Method only), KDB 653005, KDB 789033, KDB 971168

**RSS-Gen(Issue 5), RSS-130(Issue 2), RSS-132(Issue 4), RSS-133(Issue 6+A1), RSS-139(Issue 3)
RSS-195(Issue 2), RSS-210(Issue 10), RSS-247(Issue 2), RSS-252(Issue 1), RSS-310(Issue 5)**

EN 300 220-1:V3.1.1, EN 300 220-2:V3.1.1 / V3.2.1, EN 300 328:V.2.1.1 / V.2.2.2

EN 300 330:V2.1.1, EN 300 330-1:V1.8.1, EN 300 330-2:V1.6.1

EN 300 440:V2.1.1 / V2.2.1, EN300 440-1:V1.6.1, EN300 440-2:V1.4.1

EN 301 091-1:V1.2.1 / V1.3.3 / V2.1.1, EN 301 091-2:V1.2.1 / V1.3.2 / V2.1.1

EN 301 489-1:V1.9.2 / V2.2.3, EN 301 489-3:V1.6.1 / V2.1.1, EN 301 489-7:V1.3.1

EN 301 489-17:V3.2.4, EN 301 489-19:V.1.2.1 / V2.1.1, EN 301 489-24:V1.5.1

EN 301 489-34:V1.4.1 / V2.1.1, EN 301 489-51:V2.1.1

EN 301 893:V.2.1.1, EN 301 511:V12.5.1*⁵, EN 301 908-1:V15.1.1*⁵

EN 302 264:V2.1.1, EN 302 291-1:V1.1.1, EN 302 291-2:V1.1.1

EN 303 396:V1.1.1, EN 303 413:V1.1.1 / V1.2.1, EN 303 417:V1.1.1

EN 305 550:V2.1.0(Draft), EN 305 550-1:V1.2.1, EN 305 550-2:V1.2.1

ETSI TS 151 010-1 clauses 12.2.1 and 12.2.2:V12.9.0

3GPP TS 51.010-1 clauses 12.2.1 and 12.2.2:V12.9.0

***⁵: Spurious emission only.**

Telecommunication equipment performance 2

IEC 62233:2005, IEC 62311:2019, IEC 62369-1:2008, IEC 62479:2010,

EN 62233:2008, EN 62311:2008, EN 62369-1:2009, EN 62479:2010

EN 50364:2018, EN 50366:2003+A1:2006, EN 50371:2002, EN 50383:2010+AC1:2013

EN 50385:2017, RSS-102(Issue 5)

Voluntary EMC Laboratory Accreditation Center Inc.

**The laboratory is only accredited for testing activities outlined within the test methods listed above.
If test standards do not include the edition, it means the latest one at the date of renewal (6.16, 2024).**