

Scope of Accreditation

(Measurement Method)

Accreditation Number : VLAC-001-2

Expiration Date : March 30, 2022

[Name of Laboratory]

Japan Quality Assurance Organization

[Test site name]

Kitakansai Testing Center, Saito EMC Branch

[Test site Address]

7-3-10, Saito Asagi, Ibaraki-shi, Osaka-fu

[Measurement Method]

Emission test

Radiated disturbance : Enclosure Port

Disturbance electric field test

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

Measurement Frequency Range : 9 kHz – 1 GHz

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

Measurement Frequency Range : 150 kHz - 6 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**

Disturbance 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] AAN, Capacitive voltage probe

Current measurement [Test condition] Current probe

Conducted disturbance Measurement: DC power line port

Voltage measurement [Test condition] AMN, High impedance probe

Conductive interference test against in-vehicle equipment

Conducted disturbance Measurement: PLC power line port

Current measurement [Test condition] Current probe

Disturbance electric field test Antenna port / RF Modulator output power / Tuner port / Fiber port

Voltage test [Test condition] AAN, Capacitive voltage probe

Current test [Test condition] Current probe

Wanted signal and Voltage test at the RF output [Test condition] Selective voltmeter

Local oscillator power at the input terminal of the outdoor unit

Immunity test

Electro static discharge test	Contact discharge, Air discharge, Indirect discharge
Radiated electromagnetic field strength against in-vehicle TEM CELL	Measurement Frequency Range : 26 MHz – 6 GHz
	Measurement Frequency Range : 200 MHz – 2 GHz
	Measurement Frequency Range : 1 MHz – 400 MHz
Electrical fast transient/burst (EFT/B)	Mains port, Telecommunication/Signal port
Immunity to transient disturbances conducted along supply lines / other than supply lines	
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: 100 kHz – 2 GHz
Conducted Common mode disturbances	
Radiated magnetic field	
Interruptions and Voltage variations	
Broadcasting receiver immunity	
	Antenna terminal Two signals/Three signals characteristics test (S1)
	Coaxial shield attenuation test (S4), RF conducted interference
	Mains terminal RF conducted immunity test (S2)
	Radiated electromagnetic field/Electric magnetic field immunity test(open strip line) (S3)
Low frequency immunity	Mains Harmonics and Interharmonics

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)
- Test based on European standards and Canadian standards**

Telecommunication equipment performance 2

- Exposure to electric, magnetic, and electromagnetic fields SAR**
[Test condition] **Artificial Body Phantom + Electric field probe**
- 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)

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[Test standards]

Emission test

VCCI Technical requirements : VCCI-CISPR 32

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

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

CISPR 11, CISPR 12, CISPR 13, CISPR 14-1, CISPR 15, CISPR 22, CISPR 32, CISPR 16-2-1/-2-2/-2-3

EN 55011, EN 55012, EN 55013, EN 55014-1, EN 55015, EN 55032, EN 55016-2-1/-2-2/-2-3

IEC 61000-6-3/-6-4, EN 61000-6-3/-6-4

Technical requirements under the Electrical Appliances and Materials safety Act appendix 10 Chapter 2/3/4/5/6/7/8/9

J55011, J55013, J55014-1, J55015, J55022, J55032, CISPRJ 15, CISPRJ 32

Regulations for Enforcement of the Radio Law: Article 46.2 Paragraph 1 Item 4 (Broad band electric power line carrier communication facility) / Notification 520 of the Ministry of Posts and Telecommunications (H18.10.4)

Regulations for Enforcement of the Radio Law: Article 46.7 (Microwave Oven or IH Cooking Heater) / Separate Table 8

AS CISPR 11, AS/NZS CISPR 12, AS CISPR 14.1, AS CISPR 15, AS/NZS CISPR 32

AS/NZS 61000.6.3, AS/NZS 61000.6.4

CNS 13803, CNS 13438, CNS 13439, CNS 13783-1, CNS 14115, CNS 15936

GB 4343.1, GB 4824, GB 9254, GB 13837, GB 17743

KN 11, KS C 9811^{*2}, KN 12, KN 14-1, KS C 9814-1^{*2}, KN 15, KS C 9815^{*2}, KN 32, KS C 9832^{*2}

KN 16-2-1/-2-2/-2-3, KS C 9816-2-1/-2-2/-2-3^{*2}, KN 61000-6-3/-6-4, KS C 9610-6-3/-6-4^{*2}

IEC 61326-1, IEC 61326-2-1/-2-2/-2-3/-2-6

EN 61326-1, EN 61326-2-1/-2-2/-2-3/-2-6

JIS C 61326-1, JIS C 61326-2-1/-2-2/-2-3/-2-6

IEC 60601-1-2, IEC 60601-2-2/-2-5/-2-6/-2-8/2-10/-2-12/-2-16/-2-17/-2-18/-2-21/-2-23/-2-24/-2-25/-2-29/-2-33/-2-34/-2-36/-2-37/-2-39/-2-40/-2-41/-2-43/-2-44/-2-45/-2-46/-2-47/-2-49/-2-50/-2-54/-2-63/-2-65, IEC 80601-2-26/-2-27/-2-30/-2-35/-2-77/-2-78, ISO 80601-2-55/-2-56/-2-61

EN 60601-1-2, EN 60601-2-2/-2-5/-2-6/-2-8/2-10/-2-12/-2-16/-2-17/-2-18/-2-21/-2-23/-2-24/-2-25/-2-29/-2-33/-2-34/-2-36/-2-37/-2-39/-2-40/-2-41/-2-43/-2-44/-2-45/-2-46/-2-47/-2-49/-2-50/-2-54/-2-63/-2-65, EN 80601-2-26/-2-27/-2-30/-2-35/-2-55/-2-56/-2-61/-2-77/-2-78

JIS T 0601-1-2, JIS T 0601-2-2/-2-5/-2-6/-2-10/-2-16/-2-18/-2-21/-2-24/-2-25/-2-37/-2-39/-2-40/-2-47/-2-49/-2-50/-2-61/-2-65/-2-201/-2-202/-2-203/-2-204/-2-205/-2-206/-2-207/-2-208, JIS T 80601-2-35/-2-55/-2-77/-2-78,

JIS Z 4620, JIS T 1115, JIS T 1203, JIS T 1304, JIS Z 4751-2-29/-2-43/-2-44/-2-45/-2-54, JIS Z 4951

KN 60601-1-2, KS C IEC 60601-1-2^{*2}

YY 0505, JIS T 9206, IEC 60533, EN 60533, JIS F 8081, IACS UR E10

Nippon Kaiji Kyokai Technical rule of Materials and Equipment for Marine Use : Article 7 Chapter 1

IEC 60945, EN 60945, IEC 60974-10, EN 60974-10, IEC 62040-2, EN 62040-2, IEC 61204-3, EN 61204-3

IEC 62236-3-2, EN 50121-3-2, IEC 61131-2, EN 61131-2, EN 50270, EN 50370-1

ICES-Gen, ICES-001, ICES-002, ICES-003, ICES-005, BETS-7, ISO 13482

^{*2} : Added as of April 20, 2021

Immunity test

CISPR 14-2, CISPR 20, CISPR 24, CISPR 35*¹, EN 55014-2, EN 55020, EN 55024, EN 55035*¹

IEC 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-13/-4-16/-4-29

EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-13/-4-16/-4-29

JIS C 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-16

KN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11, KS C 9610-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11*²

IEC 61000-6-1/-6-2/-6-7, EN 61000-6-1/-6-2/-6-7, JIS C 61000-6-1/-6-2

KN 14-2, KS C 9814-2*², KN 35*¹, KS C 9835*^{1,2}, KN 61547, KS C 9547*²

KN 61000-6-1/-6-2, KS C 9610-6-1/-6-2*²

IEC 61326-1, IEC 61326-2-1/-2-2/-2-3/-2-6, IEC 61326-3-1

EN 61326-1, EN 61326-2-1/-2-2/-2-3/-2-6, EN 61326-3-1

JIS C 61326-1, JIS C 61326-2-1/-2-2/-2-3/-2-6, JIS C 1806-3-1

IEC 60601-1-2, IEC 60601-2-2/-2-5/-2-6/-2-8/2-10/-2-12/-2-16/-2-17/-2-18/-2-21/-2-23/-2-24/-2-25/-2-29/-2-33/-2-34/-2-36/-2-37/-2-39/-2-40/-2-41/-2-43/-2-44/-2-45/-2-46/-2-47/-2-49/-2-50/-2-54/-2-63/-2-65, IEC 80601-2-26/-2-27/-2-30/-2-35/-2-77/-2-78, ISO 80601-2-55/-2-56/-2-61

EN 60601-1-2, EN 60601-2-2/-2-5/-2-6/-2-8/2-10/-2-12/-2-16/-2-17/-2-18/-2-21/-2-23/-2-24/-2-25/-2-29/-2-33/-2-34/-2-36/-2-37/-2-39/-2-40/-2-41/-2-43/-2-44/-2-45/-2-46/-2-47/-2-49/-2-50/-2-54/-2-63/-2-65, EN 80601-2-26/-2-27/-2-30/-2-35/-2-55/-2-56/-2-61/-2-77/-2-78

JIS T 0601-1-2, JIS T 0601-2-2/-2-5/-2-6/-2-10/-2-16/-2-18/-2-21/-2-24/-2-25/-2-37/-2-39/-2-40/-2-47/-2-49/-2-50/-2-61/-2-65/-2-201/-2-202/-2-203/-2-204/-2-205/-2-206/-2-207/-2-208, JIS T 80601-2-35/-2-55/-2-77/-2-78,

JIS Z 4620, JIS T 1115, JIS T 1203, JIS T 1304, JIS Z 4751-2-29/-2-43/-2-44/-2-45/-2-54, JIS Z 4951

KN 60601-1-2, KS C IEC 60601-1-2*²

YY 0505, JIS T 9206, IEC 60533, EN 60533, JIS F 8081, IACS UR E10

Nippon Kaiji Kyokai Technical rule of Materials and Equipment for Marine Use : Article 7 Chapter 1

IEC 60945, EN 60945, IEC 60974-10, EN 60974-10, IEC 62040-2, EN 62040-2, IEC 61204-3, EN 61204-3

IEC 62236-3-2, EN 50121-3-2, IEC 61131-2, EN 61131-2, EN 50270, EN 50370-2

IEC 60335-1 Subclause 19.11.4, EN 60335-1 Subclause 19.11.4

IEC 61496-1 Subclause 4.3.2 and 5.4.3, EN 61496-1 Subclause 4.3.2 and 5.4.3

JIS B 9704-1 Subclause 4.3.2 and 5.4.3, JIS B 7611-2 Annex B.3

IEC 61547, EN 61547, GB4343.2, ISO 13482

*¹ : Except for “Broadband impulsive conducted disturbances”

*² : Added as of April 20, 2021

Harmonic Test in Public Low Voltage Systems

IEC 61000-3-2/-3-3, EN 61000-3-2/-3-3, JIS C 61000-3-2, GB 17625.1, IEC 61000-6-3, EN 61000-6-3

IEC 61326-1, IEC 61326-2-1/-2-2/-2-3/-2-6

EN 61326-1, EN 61326-2-1/-2-2/-2-3/-2-6

JIS C 61326-1, JIS C 61326-2-1/-2-2/-2-3/-2-6

IEC 60601-1-2, IEC 60601-2-2/-2-5/-2-6/-2-8/2-10/-2-12/-2-16/-2-17/-2-18/-2-21/-2-23/-2-24/-2-25/-2-29/-2-33/-2-34/-2-36/-2-37/-2-39/-2-40/-2-41/-2-43/-2-44/-2-45/-2-46/-2-47/-2-49/-2-50/-2-54/-2-63/-2-65, IEC 80601-2-26/-2-27/-2-30/-2-35/-2-77/-2-78, ISO 80601-2-55/-2-56/-2-61

EN 60601-1-2, EN 60601-2-2/-2-5/-2-6/-2-8/2-10/-2-12/-2-16/-2-17/-2-18/-2-21/-2-23/-2-24/-2-25/-2-29/-2-33/-2-34/-2-36/-2-37/-2-39/-2-40/-2-41/-2-43/-2-44/-2-45/-2-46/-2-47/-2-49/-2-50/-2-54/-2-63/-2-65, EN 80601-2-26/-2-27/-2-30/-2-35/-2-55/-2-56/-2-61/-2-77/-2-78

JIS T 0601-1-2, JIS T 0601-2-2/-2-5/-2-6/-2-10/-2-16/-2-18/-2-21/-2-24/-2-25/-2-37/-2-39/-2-40/-2-47/-2-49/-2-50/-2-61/-2-65/-2-201/-2-202/-2-203/-2-204/-2-205/-2-206/-2-207/-2-208, JIS T 80601-2-35/-2-55/-2-77/-2-78

JIS Z 4620, JIS T 1115, JIS T 1203, JIS T 1304, JIS Z 4751-2-29/-2-43/-2-44/-2-45/-2-54, JIS Z 4951

KN 60601-1-2, KS C IEC 60601-1-2*²

YY 0505, JIS T 9206, IEC 60974-10, EN 60974-10, IEC 62040-2, EN 62040-2, IEC 61204-3, EN 61204-3

EN 50270, ISO 13482

*² : Added as of April 20, 2021

Vehicle /In-vehicle equipment test

EU Directive 2004/104/EC, Annex I Clause 6.5/ 6.6/ 6.7/ 6.8/ 6.9

ECE R-10 Clause 6.5, 6.6, 6.7, 6.8, 6.9, 7.10-7.19

CISPR 25 (Except for Vehicle), EN 50498, ISO 7637-2, ISO 7637-3

ISO 11452-1, ISO 11452-2, ISO 11452-3, ISO 11452-4, ISO 10605

Telecommunication characteristic test 1

Intentional Radiators (FCC Part 15 Subpart C) : ANSI C63.10-2013 (up to 40 GHz)

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

U-NII with DFS Intentional Radiators (FCC Part 15 Subpart E) : 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/TIA-603-E-2016, ANSI/TIA-102.CAAA-E-2016, ANSI C63.26-2015 (up to 40 GHz)

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

ANSI/TIA-603-E-2016, ANSI/TIA-102.CAAA-E-2016, ANSI C63.26-2015 (up to 40 GHz)

EN 300 220-1, EN 300 220-2, EN 300 220-3-1/-3-2, EN 300 220-4, EN 300 328, EN 300 330, EN 300 440

EN 301 489-1/ -3/ -9/ -17/ -19/ -34, EN 301 893, EN 303 345-1/ -2/ -3/ -4, EN 303 446-1/ -2

RSS-Gen, RSS-132, RSS-133, RSS-210, RSS-247, RSS-310

Telecommunication equipment performance 2

RF Exposure (Devices subject to SAR requirements) : IEEE Std 1528™-2013 (up to 6 GHz)

IEC 62209 Part1, IEC 62209 Part2, IEC 62233, IEC 62311, IEC 62479, IEC 62493

EN 62209-1, EN 62209-2, EN 62233, EN 62311, EN 62479, EN 62493

EN 50360, EN 50566, EN 50663, EN 50665

RSS-102, ARIB STD-T56, EN 50364

ACMA Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard

Ordinance Regulating Radio Equipment: Article 14.2 (Specific Absorption Rate) / Notification 324 of the Ministry of Posts and Telecommunications (H25.8.23)

Voluntary EMC Laboratory Accreditation Center Inc.