

Scope of Accreditation

(Measurement Method)

Accreditation Number: VLAC-001-5

Expiration Date: April 30, 2026

[Name of Laboratory]

Japan Quality Assurance Organization

[Test site name]

Safety & EMC Center

[Test site Address]

4-4-4, Minamiosawa, Hachioji-shi, Tokyo 192-0364, Japan

[Measurement Method]

Emission test

Radiated disturbance: Enclosure Port

Disturbance electric field test

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

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

Disturbance electric power measurement

[Test condition] Absorption 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

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

Electrical transient conduction along supply lines

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

Immunity test

Electro static discharge test

Radiated electromagnetic field strength

against in-vehicle

TEM cell

Stripline

Tri-plate line

Reverberation chamber

Contact discharge, Air discharge, Indirect discharge

Measurement Frequency Range: 26 MHz – 6 GHz

Measurement Frequency Range: 200 MHz – 6 GHz

Measurement Frequency Range: 10 kHz – 400 MHz

Measurement Frequency Range: 10 kHz – 400 MHz

Measurement Frequency Range: 10 kHz – 1 GHz

Measurement Frequency Range: 200 MHz – 6 GHz

Radiated fields in close proximity **Measurement Frequency Range: 9 kHz – 26 MHz**
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: 100 kHz – 2.1 GHz**
Road vehicles - Portable transmitters **Measurement Frequency Range: 360 MHz – 6 GHz**
Conducted Common mode disturbances **Measurement Frequency Range: DC – 150 kHz**
Radiated magnetic field
Road vehicles - Immunity to magnetic fields **Measurement Frequency Range: DC, 15 Hz – 150 kHz**
Interruptions and Voltage variations
Low frequency immunity **Mains Harmonics and Interharmonics**
Immunity to transient disturbances conducted along supply lines / other than supply lines

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)
Test based on European Standards

Telecommunication equipment performance 2

Magnetic field strength [Test condition] Magnetic Field probe
Electrical field strength [Test condition] Electric Field probe

Electrical installations in ships - Durability and resistance to environmental conditions

Visual inspection, Performance test, Insulation resistance, High voltage, Dry heat, Damp heat, Vibration, Inclination, Cold, Flame retardant

Safety test of medical electrical equipment

| | | | |
|---------------------|-----------------------|--------------------|-------------------|
| IEC 60601-1 Series | IEC 60601-2 Series | IEC 80601-2 Series | IEC 62304 |
| IEC 62366 Series | ISO 80601-2 Series | EN 60601-1 Series | EN 60601-2 Series |
| EN 80601-2 Series | EN IEC 80601-2 Series | EN 62304 | EN 62366 Series |
| JIS T 0601-1 Series | JIS T 0601-2 Series | JIS T 1115 | JIS T 2304 |
| JIS T 62366 Series | JIS T 80601-2 Series | | |

Safety tests of electrical equipment for measurement, control, and laboratory use

| | | | |
|---------------------|---------------------|-------------------|-------------------|
| IEC 61010-1 Series | IEC 61010-2 Series | EN 61010-1 Series | EN 61010-2 Series |
| JIS C 1010-1 Series | JIS C 1010-2 Series | | |

Voluntary EMC Laboratory Accreditation Center Inc.

Scope of Accreditation

(Test standards)

Accreditation Number: VLAC-001-5

Expiration Date: April 30, 2026

[Name of Laboratory]

Japan Quality Assurance Organization.

[Test site name]

Safety & EMC Center

[Test site Address]

4-4-4, Minamiosawa, Hachioji-shi, Tokyo

[Test standards]

Emission test

VCCI Technical Requirements: VCCI-CISPR 32:2016

J55011(H27), J55014-1(H27), J55032(H29), CISPRJ 32:2017

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

Regulations for Enforcement of the Radio Act: Article 46.2.5 (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 Act: Article 46.7 (Microwave Oven or IH Cooking Heater)

FCC 47 CFR Part 15 Subpart B: ANSI C63.4-2014, ANSI C63.4a-2017

FCC 47 CFR Part 18: FCC MP-5 (February 1986)

CISPR 11:2009+A1:2010 / 2015+A1:2016+A2:2019 / 2024

CISPR 14-1:2016+COR1:2016 / 2020(Draft), CISPR 32:2015 / 2015+A1:2019

CISPR 16-2-1:2014+A1:2017, CISPR 16-2-2:2010, CISPR 16-2-3:2016+A1:2019+A2:2023

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

EN 55032:2015+A11:2020 / 2015+A11:2020+A1:2020

AS CISPR 11:2017, AS/NZS CISPR 14.1:2021, AS/NZS CISPR 32:2015+A1:2020

KS C 9811:2019, KS C 9814-1:2022, KS C 9832:2019

ICES-Gen(Issue 1+A1:2021), ICES-001(Issue 5), ICES-003(Issue 7)

GB 4824:2019, GB 4343.1:2018, GB 9254:2008, GB/T 9254.1:2021

CNS 13783-1:2013, CNS 13438:2006, CNS 15936:2016

IEC 61000-6-3:2006+A1:2010 / 2020, IEC 61000-6-4:2006+A1:2010 / 2018, IEC 61000-6-8:2020

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

EN 61000-6-4:2007+A1:2011, EN IEC 61000-6-4:2019, EN IEC 61000-6-8:2020

AS/NZS 61000.6.3:2021, AS 61000.6.4:2020

KS C 9610-6-3:2017, KS C 9610-6-4:2022

IEC 61131-2:2017, EN 61131-2:2007, IEC 60533:2015, JIS F 8081:2022, IACS UR E10:2021 / 2023

JIS F 0808(Clause 6.2.18.1 and 6.2.18.2):2009, IEC 60945:2002+COR1:2008, EN 60945:2002

JIS F 0812(Clause 9) :2006, ISO 25197(Clause 10.10.10 and 10.10.11):2020

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

IEC 60092-504:2016, EN 60079-29-1:2016+A11:2022

IEC 62236-3-2:2018, EN 50121-3-2:2016+A1:2019, JIS E 5006(Clause 12.2.9.2):2017

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 /-2-6:2020
EN 61326-1:2013, EN 61326-2-1:2013 /-2-2:2013 /-2-3:2013 /-2-6:2013
EN IEC 61326-1:2021, EN IEC 61326-2-1:2021 /-2-2:2021 /-2-3:2021 /-2-6:2021
JIS C 61326-1:2022, JIS C 61326-2-1:2022 /-2-2:2024 /-2-3:2024 /-2-6:2019 /-2-6 :2023
KS C IEC 61326-1:2018
IEC 62040-2:2016+ISH1:2018, EN 62040-2:2018, JIS C 4411-2:2019
IEC 61204-3:2016, EN IEC 61204-3:2018, EN 50270:2015+AC:2016+AC:2016
IEC 60601-1-2:2014+A1:2020, IEC 60601-2-2:2017+A1:2023 /-2-6:2012+A1:2016+A2:2022
/-2-10:2012+A1:2016+A2:2023 /-2-16:2018 /-2-18:2009 /-2-24:2012 /-2-37:2007+A1:2015
IEC 80601-2-30:2018 /-2-60:2012 /-2-60:2019 /-2-61:2017, IEC 60601-1-11:2015+A1:2020
EN 60601-1-2:2015+A1:2021, EN 60601-2-6:2015+A1:2016 /-2-10:2015+A1:2016 /-2-18:2015
/-2-24:2015 /-2-37:2008+A11:2011+A1:2015, EN IEC 60601-2-2:2018 /-2-16:2019
EN IEC 80601-2-30:2019 /-2-60:2020, EN 60601-1-11:2015+A1:2021
JIS T 0601-1-2:2018 / 2023, JIS T 0601-2-2:2020 /2-6:2015 /-2-10:2015 /-2-16:2022 /-2-18:2013
/-2-37:2018 /-2-60:2014 /-2-60:2021, JIS T 1115:2018 / 2023, JIS T 1140:2014
KS C IEC 60601-1-2:2020
YY 0505:2012, YY 9706.102:2021

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

Immunity test

[Including the test standards listed in Note 1.]

CISPR 14-2:2015 / 2020, CISPR 35:2016*¹
EN 55014-2:2015, EN IEC 55014-2:2021, EN 55035:2017+A11:2020*¹
KS C 9814-2:2022, KS C 9835:2019*¹
IEC 61000-4-2:2008 /-4-3:2006+A1:2007+A2:2010 /-4-3:2020 /-4-4:2012 /-4-5:2005 /-4-5:2014+A1:2017
/-4-6:2008 /-4-6:2013+COR1:2015 /-4-6:2023 /-4-8:2009 /-4-11:2004+A1:2017
/-4-11:2020+COR1:2020+COR2:2022 /-4-13:2002+A1:2009+A2:2015 /-4-16:2015 /-4-20:2022
/-4-21:2011, IEC 61000-4-39:2017(Except for Clause 5.6)
EN 61000-4-2:2009 /-4-3:2006+A1:2008+A2:2010 /-4-4:2012 /-4-5:2005 /-4-5:2014+A1:2017 /-4-6:2009
/-4-6:2014+AC:2015 /-4-8:2010 /-4-11:2004+A1:2017 /4-13:2002+A1:2009+A2:2016 /-4-16:2016
/-4-20:2010 /-4-21:2011, EN 61000-4-39:2017(Except for Clause 5.6)
EN IEC 61000-4-3:2020 /-4-6:2023 /-4-11:2020+AC:2022
JIS C 61000-4-2:2012 /-4-3:2022 /-4-4:2015 /-4-5:2018 /-4-6:2017 /-4-8:2016 /-4-11:2021 /-4-16 2017
KS C 9610-4-2:2017 /-4-3:2017 /-4-4:2020 /-4-5:2020 /-4-6:2020 /-4-8:2017 /-4-11:2020
IEC 61000-6-1:2005 / 2016, IEC 61000-6-2:2005 / 2016, IEC 61000--6-7:2014
EN 61000-6-1:2007, EN IEC 61000-6-1:2019, EN 61000-6-2:2005+AC:2005, EN IEC 61000-6-2:2019
EN 61000-6-7:2015
JIS C 61000-6-1:2019, JIS C 61000-6-2:2019, JIS C 61000-6-7:2020
KS C 9610-6-1:2019, KS C 9610-6-2:2019
IEC 61326-3-1:2017, IEC 61326-3-2:2020
EN 61326-3-1:2017, EN 61326-3-2:2008, EN IEC 61326-3-2:2018
JIS C 61326-3-1:2020
IEC 61496-1:2020, EN 61496-1:2013+AC:2015, EN IEC 61496-1:2020, JIS B 9704-1:2015
IEC 61131-2:2017, EN 61131-2:2007, IEC 60533:2015, JIS F 8081:2022, IACS UR E10:2021 / 2023
JIS F 0808:2009, IEC 60945:2002+COR1:2008, EN 60945:2002, JIS F 0812(Clause 10):2006
ISO 25197(Clause 10.10.3, 10.10.4, 10.10.5, 10.10.6, 10.10.7,10.10.8 and 10.10.9):2020
Nippon Kaiji Kyokai Technical rule of Materials and Equipment for Marine Use: Article 7 Chapter 1
IEC 60092-504:2016, EN 60079-29-1:2016+A11:2022
EN 50104:2010 / 2019 / 2019+A1:2023
GB/T 4343.2:2020

JIS C 1516:2020, IEC 60335-1(Clause 19.11.4):2020, EN 60335-1(Clause 19.11.4):2012+A11:2014
+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021+A16:2023
JIS B 7611-2(Appendix B.3):2015, JIS T 1115:2018, JIS C 9335-1(Clause 19.11.4):2014
IEC 60601-1-11:2015+A1:2020, EN 60601-1-11:2015+A1:2021
EN 50130-4:2011+A1:2014, IEC 62236-3-2 :2018, EN 50121-3-2:2016+A1:2019
JIS E 5006 (Clause 12.2.8(Exclude 12.2.8.1 Group 2) and 12.2.9):2017
JEITA ET-2201:2021*¹, IEC TR 60601-4-2:2016

*¹ : Except for “Broadband impulsive conducted disturbances” and Annex H.

Harmonic Test in Public Low Voltage Systems [Including the test standards listed in Note 1.]

IEC 61000-3-2:2014 / 2018+A1:2020, EN 61000-3-2:2014, EN IEC 61000-3-2:2019 +A1:2021
JIS C 61000-3-2:2019, GB 17625.1:2022
IEC 61000-3-3:2013+A1:2017+A2:2021, EN 61000-3-3:2013+A1:2019+A2:2021
IEC 61000-6-3:2006+A1:2010 / 2020, EN 61000-6-3:2007+A1:2011, EN IEC 61000-6-3:2021
AS/NZS 61000.6.3 :2021, IEC 61000-6-8:2020, EN IEC 61000-6-8:2020

Vehicle /In-vehicle equipment test

ECE R-10 Clause 6.5/ 6.6/ 6.7/ 6.8/ 6.9 :Rev6+A1:2020
CISPR 25:2002 / 2008 / 2016 / 2021, EN 55025:2017, EN 50498:2010
ISO-7637-2:2004 / 2004+A1:2008 / 2011, ISO-7637-3:2007 / 2016
ISO 11452-1:2005+A1:2008 / 2015, ISO 11452-2:2004 / 2019
ISO 11452-3:2001 / 2016, ISO 11452-4:2005+COR1:2009 / 2011 / 2020 (Except for TWC test method)
ISO 11452-5:2002, ISO 11452-8:2015 (Except for Helmholtz coil method)
ISO 11452-9:2012 / 2021, ISO 11452-11:2010
ISO 10605:2008+A1:2014 / 2023, ISO 13766-1:2018, SAE J1113-25:2005
ISO 16750-2(Clause 4.6.3 and 4.6.4):2012

Telecommunication equipment performance 1

Intentional Radiators (FCC Part 15 Subpart C): ANSI C63.10-2013
Intentional Radiators (FCC Part 15 Subpart C): ANSI C63.10-2020+Cor.1-2023
U-NII without DFS Intentional Radiators (FCC Part 15 Subpart E): ANSI C63.10-2013
U-NII without DFS Intentional Radiators (FCC Part 15 Subpart E): ANSI C63.10-2020+Cor.1-2023
EN 300 328:V.2.2.2, EN 300 440:V.2.2.1, EN 300 330:V.2.2.1
EN 301 489-1:V.2.2.3, EN 301 489-3:V.2.3.2, EN 301 489-9:V.2.2.1
EN 301 489-17:V.3.2.4 / V.3.2.6(Draft),EN 301 489-19: V.2.2.1, EN 301 489-34: V.2.2.1
EN 301 893:V.2.1.1
EN 303 345-1:V1.1.1, EN 303 345-2:V1.1.1 / V.1.2.1, EN 303 345-3:V1.1.1, EN 303 345-4:V1.1.1
EN 303 413:V.1.2.1, EN 303 687(Clause 4.3.4.1, 4.3.4.2 and 4.3.5):V.1.1.1

Telecommunication equipment performance 2

IEC 62311:2019, IEC 62233:2005, IEC 62479:2010
EN 62311:2008, EN 62233:2008, EN IEC 62311:2020, EN 62479:2010

Electrical installations in ships - Durability and resistance to environmental conditions

IACS UR E10:2021 / 2023
Nippon Kaiji Kyokai Technical rule of Materials and Equipment for Marine Use : Article 7 Chapter 1
IEC 60945:2002+COR1:2008, EN 60945:2002
IEC 60068-2-1:2007, IEC 60068-2-2:2007, IEC 60068-2-6:2007, IEC 60068-2-30:2005
IEC 60695-11-5:2016

Safety test of medical electrical equipment

| | | |
|-------------------------------------|-----------------------------------|---------------------------|
| IEC 60601-1:1988+A1:1991+A2:1995 | EN 60601-1:1990+A1:1993 | JIS T 0601-1:1999 |
| IEC 60601-1:2005 | EN 60601-1:2006 | JIS T 0601-1:2012 |
| IEC 60601-1:2005+A1:2012 | EN 60601-1:2006+A12:2014 | JIS T 0601-1:2012+A1:2014 |
| | | JIS T 0601-1:2017 |
| IEC 60601-1:2005+A2:2020 | EN 60601-1:2006+A2:2021 | JIS T 0601-1:2023 |
| IEC 60601-1-1:2000 | EN 60601-1-1:2001 | JIS T 0601-1-1:2005 |
| IEC 60601-1-6:2010 | EN 60601-1-6:2010 | |
| IEC 60601-1-6:2010+A1:2013 | EN 60601-1-6:2010+A1:2015 | |
| IEC 60601-1-6:2010+A1:2013+A2:2020 | EN 60601-1-6:2010+A1:2015+A2:2021 | JIS T 60601-1-6:2023 |
| IEC 60601-1-8:2006 | EN 60601-1-8:2007 | JIS T 60601-1-8:2012 |
| IEC 60601-1-8:2006+A1:2012 | EN 60601-1-8:2007+A1:2013+AC:2014 | |
| | EN 60601-1-8:2007+A11:2017 | |
| IEC 60601-1-8:2006+A1:2012+A2:2020 | EN 60601-1-8:2007+A1+A11+A2:2021 | JIS T 60601-1-8:2023 |
| IEC 60601-1-11:2010 | | |
| IEC 60601-1-11:2015 | | |
| IEC 60601-1-11:2020 | | |
| IEC 60601-2-2:1998 | | |
| IEC 60601-2-2:2006 | | JIS T 0601-2-2:2012 |
| IEC 60601-2-2:2009 | | JIS T 0601-2-2:2014 |
| IEC 60601-2-2:2017 | | JIS T 0601-2-2:2020 |
| IEC 60601-2-6:2012 | EN 60601-2-6:2015 | JIS T 0601-2-6:2015 |
| IEC 60601-2-6:2012+A1:2016 | EN 60601-2-6:2015+A1:2016 | |
| IEC 60601-2-10:2012 | EN 60601-2-10:2015 | JIS T 0601-2-10:2015 |
| IEC 60601-2-10:2012+A1:2016 | EN 60601-2-10:2015+A1:2016 | |
| IEC 60601-2-10:2012+A1:2016+A2:2023 | | |
| IEC 60601-2-16:2008 | | |
| IEC 60601-2-16:2012 | EN 60601-2-16:2015 | JIS T 0601-2-16:2014 |
| IEC 60601-2-16:2018 | | JIS T 0601-2-16:2022 |
| IEC 60601-2-18:1996 | | |
| IEC 60601-2-18:1996+A1:2000 | | JIS T 0601-2-18:2005 |
| IEC 60601-2-18:2009 | EN 60601-2-18:2015 | JIS T 0601-2-18:2013 |
| IEC 60601-2-24:1998 | | JIS T 0601-2-24:2005 |
| IEC 60601-2-24:2012 | | JIS T 0601-2-24:2018 |
| IEC 60601-2-27:2011 ^{*2} | EN 60601-2-27:2014 ^{*2} | |
| IEC 60601-2-30:1999 | | |
| IEC 60601-2-37:2001 | | |
| IEC 60601-2-37:2001+A1:2004+A2:2005 | | |
| IEC 60601-2-37:2007 | | JIS T 0601-2-37:2013 |
| IEC 60601-2-37:2007+A1:2015 | | JIS T 0601-2-37:2018 |
| IEC 60601-2-46:2010 | EN 60601-2-46:2011 | |
| IEC 60601-2-46:2016 | | |
| IEC 60601-2-57:2011 | EN 60601-2-57:2011 | |
| IEC 80601-2-30:2009 | EN 80601-2-30:2010 | |
| IEC 80601-2-30:2009+A1:2013 | EN 80601-2-30:2010+A1:2015 | JIS T 1115:2018 |
| | | JIS T 1115:2023 |
| IEC 80601-2-30:2018 | EN IEC 80601-2-30:2019 | |
| IEC 62304:2006 | EN 62304:2006 | JIS T2304:2012 |
| IEC 62304:2006+A1:2015 | EN 62304:2006+A1:2015 | JIS T2304:2017 |
| IEC 62366:2007 | EN 62366:2008 | |
| IEC 62366:2007+A1:2014 | EN 62366:2008+A1:2015 | |
| IEC 62366-1:2015 | EN 62366-1:2015+AC:2015 | JIS T62366-1:2019 |
| IEC 62366-1:2015+A1:2020 | EN 62366-1:2015+A1:2020 | JIS T62366-1:2022 |
| ISO 80601-2-61:2011 | | JIS T 80601-2-61:2014 |

^{*2}: Except for Clause 201.11, 201.12 and 208.

Safety tests of electrical equipment for measurement, control, and laboratory use

IEC 61010-1:2001

IEC 61010-1:2010+A1:2016

IEC 61010-2-101:2015

IEC 61010-2-101:2018

EN 61010-1:2010+A1:2019

EN 61010-2-101:2017

JIS C 1010-1:2014

JIS C 1010-1:2019

JIS C 1010-2-101:2017

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 (5.1, 2024).**