

Scope of Accreditation

(Measurement Method)

Accreditation Number: VLAC-005-1

Expiration Date: July 22, 2025

[Name of Laboratory]

KEC Electronic Industry Development Center

[Test site name]

Testing Division Keihanna Test Center

[Test site Address]

3-2-2, Hikari-dai, Seika-cho, Soraku-gun, Kyoto 619-0237 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] **Quasi Free Space**

Measurement Frequency Range: 1 GHz – 40 GHz

Disturbance magnetic field strength measurement

[Test Condition] **Loop Antenna, 3-axis loop antenna**

Disturbance electric power measurement

[Test Condition] **Absorption clamp**

Conducted disturbance measurement: AC mains port

Disturbance voltage measurement [Test Condition] AMN, High impedance probe

Conductive interference measurement: Telecommunication port

Disturbance voltage measurement [Test Condition] AMN, AAN, Capacitive voltage probe

Disturbance current measurement [Test Condition] Current probe

Conductive interference measurement: DC power line port

Disturbance voltage measurement [Test Condition] AMN, High impedance probe

Antenna port, RF modulator output port, Tuner port

Disturbance voltage measurement [Test Condition] AMN, High impedance probe

Disturbance current measurement [Test Condition] Current probe

Wanted signal and disturbance voltage test at the RF output

[Test Condition] **Selective voltmeter**

Local oscillator power at the input terminal of the outdoor unit

Immunity test

Electro discharge test

Contact discharge, Air discharge, Indirect discharge

Radiated electromagnetic field test

Measurement frequency: 26 MHz – 6 GHz

Electrical fast transient/burst (EFT/B) test

Mains port, Telecommunication/Signal port

Surge test

Mains port, Telecommunication/Signal port

RF conducted disturbances test

Mains port measurement frequency range: 150 kHz – 230 MHz

Telecommunication port measurement frequency range: 150 kHz – 230 MHz

Signal port measurement frequency range: 150 kHz – 230 MHz

Power Frequency magnetic field test

Pulse magnetic test
Damped oscillatory Magnetic Field test
Voltage Dip, Short Interruptions and Voltage variations test
Ring Wave test
Low frequency immunity - Mains Harmonics and Interharmonics test
Common mode disturbances test
Damped oscillatory wave test
Ripple on d.c. input power port test

Harmonic current

Harmonic current test
Voltage changes, Voltage fluctuations and Flicker test

Telecommunication equipment performance 1

Intentional Radiators (FCC Part 15 Subpart C)
U-NII without DFS International Radiators (FCC Part 15 Subpart E)
U-NII with DFS International Radiators (FCC Part 15 Subpart E)
Based on European standards
Based on Canadian standards

Voluntary EMC Laboratory Accreditation Center Inc.

Scope of Accreditation

(Test standards)

Accreditation Number: VLAC-005-1

Expiration Date: July 22, 2025

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[Test standards]

Emission test

VCCI Technical Requirements: VCCI-CISPR 32

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

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

Enforcement rule of Radio Law: Article 46.7

FCC 47CFR Part15 Subpart B: ANSI C63.4-2014 *1

FCC 47CFR Part15 Subpart B: ANSI C 63.4a-2017 *1

FCC 47CFR Part15 Subpart B: FCC MP-2

FCC 47CFR Part18: FCC MP-5 (February 1986) *1

CISPR 11, CISPR 12, CISPR 13:2009, CISPR 14-1, CISPR 15, CISPR 22:2008, CISPR 32

CISPR 16-1-2:2003+A1:2004+A2:2006 / 2014+A1:2017, CISPR 16-1-3:2004+A1:2016+A2:2020

CISPR 16-1-4:2010+A1:2012+A2:2017 / 2019+A1:2020

CISPR 16-2-1:2008+A1:2010+A2:2013 / 2014+A1:2017, CISPR 16-2-2:2003+A1:2004+A2:2005 / 2010

CISPR 16-2-3:2010+A1:2010+A2:2014 / 2016+AMD1:2019

EN 55011, EN 55012, EN 55013:2013+A1:2016, EN 55014-1:2017+A1:2020, EN IEC 55014-1

EN IEC 55015, EN 55032

BS EN 55011, BS EN 55012, BS EN 55013, BS EN 55014-1:2017+A1:2020, BS EN IEC 55014-1

BS EN IEC 55015, BS EN 55032

AS CISPR 11, AS/NZS CISPR 12, AS/NZS CISPR 13:2012, AS CISPR 14.1:2018

AS CISPR 15, AS/NZS CISPR 22:2009, AS/NZS CISPR 32

GOST 30805.22, ICES-001, ICES-002, ICES-003, ICES-005, BETS-7

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

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

EN IEC 61000-6-8

BS EN 61000-6-3:2007+A1:2011, BS EN 61000-6-4:2007+A1:2011, BS EN IEC 61000-6-3

BS EN IEC 61000-6-4, BS EN IEC 61000-6-8

AS/NZS 61000.6.3, AS/NZS 61000.6.4

IEC 62040-2:2005 / 2016, EN 62040-2:2006, EN IEC 62040-2, BS EN 62040-2:2006, BS EN IEC 62040-2

IEC 62236-3-2, IEC 62236-4, IEC 62236-5

***1: Freq Range up to 40 GHz.**

EN 12015: 2014 / 2020, BS EN 12015:2020,

EN 50121-5, BS EN 50121-5, EN 55103-1: 2009+A1:2012, BS EN 55103-1

The following groups of test standards are included in Emission tests, Immunity tests and Harmonic Test in Public Low Voltage Systems. [Note.1]

IEC 60601-1-2, IEC 60601-2-5/2-16/2-18/2-21/2-24/2-35/2-37/2-39
EN 60601-1-2, EN 60601-2-5/2-18/2-24/2-37, EN IEC 60601-2-16/2-21/2-35/2-39
BS EN 60601-1-2, BS EN 60601-2-5/2-18/2-24/2-37, BS EN IEC 60601-2-16/2-21/2-35 /2-39
JIS T 0601-1-2:2018 / 2023, JIS T 0601-2-2/-2-5/-2-16/2-18/2-21/2-24/2-35/2-37/2-39/2-201/2-202
/-2-203/-2-204/-2-205/-2-206/-2-207/2-208

IEC 61326-1:2012 / 2020, IEC 61326-2-1:2012 /-2-1:2020 /-2-2:2012 /-2-2:2020 /-2-6:2020
EN 61326-1:2013, EN 61326-2-1:2013/ -2-2:2013
EN IEC 61326-1, EN IEC 61326-2-1/-2-2/-2-6
BS EN 61326-1:2013, BS EN 61326-2-1:2013/ -2-2:2013
BS EN IEC 61326-1, BS EN IEC 61326-2-1/-2-2/-2-6
JIS C 61326-1, JIS C 61326-2-1/-2-2/-2-6

IEC 60947-5-1:2003+A1:2009 / 2016, EN 60947-5-1:2004+A1:2009 / 2017
BS EN 60947-5-1:2004+A1:2009 / 2017
IEC 60947-5-2:2007+A1:2012 / 2019, EN 60947-5-2:2007+A1:2012, EN IEC 60947-5-2
BS EN 60947-5-2:2007+A1:2012, BS EN IEC 60947-5-2
IEC 61131-2, EN 61131-2, BS EN 61131-2, JIS C 4411-2

The following groups of test standards are included in Emission tests and Immunity tests. [Note.2]

Nippon Kaiji Kyokai Technical rule of Materials and Equipment for Marine Use: Article 7 Chapter 1
IEC 60945, EN 60945, BS EN 60945, IACS E10
IEC 61851-21-1, EN 61851-21-1, BS EN 61851-21-1
IEC 61851-21-2, EN IEC 61851-21-2, BS EN IEC 61851-21-2
EN 50121-3-2, BS EN 50121-3-2, EN 50121-4, BS EN 50121-4
IEC 61800-3:2004+A1:2011 / 2017, EN 61800-3:2004+A1:2012, EN IEC 61800-3, BS EN IEC 61800-3
JIS F 0808, JIS F 8081, IEC 60533, EN 12895, BS EN 12895, BS EN 61800-3:2004+A1:2012

Immunity test

[Including the test standards listed in Note 1 and Note 2.]

CISPR 14-2, CISPR 24, CISPR 35
EN 55014-2:1997+A1:2001+A2:2008 / 2015, EN IEC 55014-2, EN 55035
BS EN 55014-2:1997+A1:2001+A2:2008 / 2015, BS EN IEC 55014-2, BS EN 55035
AS/NZS CISPR 14.2, AS/NZS CISPR 24, GOST CISPR 24

IEC 61000-4-2, IEC 61000-4-3:2003+A1:2007+A2:2010 / 2020, IEC 61000-4-4:2004+A1:2010 / 2012
IEC 61000-4-5:2005 / 2014+A1:2017, IEC 61000-4-6:2008 / 2013, IEC 61000-4-8/-4-9/-4-10
IEC 61000-4-11:2004+AMD1:2017 /2020, IEC 61000-4-12/-4-13/-4-16/4-17/-4-18/-4-29/-4-34/-4-39

EN 61000-4-2, EN 61000-4-3:2006+A1:2007+A2:2010, EN 61000-4-4:2004+A1:2010 /2012
EN 61000-4-5:2006 / 2014+A1:2017, EN 61000-4-6:2009 /2014, EN 61000-4-8/-4-9/-4-10
EN 61000-4-11:2004+A1:2017, EN 61000-4-12/-4-13/-4-16/-4-17/-4-29/-4-34/-4-39
EN IEC 61000-4-3/-4-11/-4-18

BS EN 61000-4-2, BS EN 61000-4-3:2006+A1:2007+A2:2010, BS EN 61000-4-4:2004+A1:2010 / 2012
BS EN 61000-4-5:2006 / 2014+AMD1:2017, BS EN 61000-4-6:2009 / 2014, BS EN 61000-4-8/-4-9/-4-10
BS EN 61000-4-11:2004+A1:2017, BS EN 61000-4-12/-4-13/-4-16/-4-17/-4-29/-4-34/-4-39
BS EN IEC 61000-4-3/-4-11/-4-18

JIS C 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-16/-4-17

IEC 61000-6-1:2005 / 2016, IEC 61000-6-2:2005 / 2016, IEC61000-6-7
EN 61000-6-1:2007, EN IEC 61000-6-1, EN 61000-6-2:2005, EN IEC 61000-6-2, EN 61000-6-7
BS EN 61000-6-1:2007, BS EN IEC 61000-6-1, BS EN 61000-6-2:2005, BS EN IEC 61000-6-2
BS EN 61000-6-7
AS/NZS 61000.6.1, AS/NZS 61000.6.2, JIS C 61000-6-1, JIS C 61000-6-2

IEC 62040-2 :2005 / 2016, EN 62040-2:2006, EN IEC 62040-2, BS EN 62040-2:2006, BS EN IEC 62040-2
IEC 61547, EN 61547, BS EN 61547
IEC 61800-5-2, EN 61800-5-2, BS EN 61800-5-2
IEC 61851-21-1, EN 61851-21-1, BS EN 61851-21-1
IEC 61851-21-2, EN IEC 61851-21-2, BS EN IEC 61851-21-2

EN 12016, BS EN 12016, EN 50130-4, BS EN 50130-4, EN 55103-2, BS EN 55103-2
EN 61326-3-1, BS EN 61326-3-1, EN IEC 61326-3-2, BS EN IEC 61326-3-2

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

IEC 61000-3-2:2005+A1:2008+A2:2009 / 2014 / 2018+A1:2020
IEC 61000-3-3:2008 / 2013+A1:2017+A2:2021
IEC 61000-3-11:2000 / 2017, IEC 61000-3-12
EN 61000-3-2:2005+A1:2009+A2:2009 / 2014, EN IEC 61000-3-2
EN 61000-3-3:2008 / 2013+A1:2019+A2:2021, EN IEC 61000-3-11: 2000 / 2019, EN 61000-3-12
BS EN 61000-3-2:2005+A1:2009+A2:2009 / 2014, BS EN IEC 61000-3-2
BS EN 61000-3-3:2008 / 2013+A1:2019+A2:2021, BS EN IEC 61000-3-11:2000 / 2019, BS EN 61000-3-12
JIS C 61000-3-2, AS/NZS 61000.3.2, AS/NZS 61000.3.3, AS/NZS 61000.3.11, AS/NZS IEC 61000.3.12

IEC 61000-6-3:2006+A1:2010 / 2020, IEC 61000-6-8
EN 61000-6-3:2007+A1:2011, EN IEC 61000-6-3, EN IEC 61000-6-8
BS EN 61000-6-3:2007+A1:2011, BS EN IEC 61000-6-3, BS EN IEC 61000-6-8
AS/NZS 61000.6.3

Telecommunication characteristic test 1

IC RSS-Gen (Issue 5), IC RSS-210 (Issue 10), IC RSS-247 (Issue 2)
EN 300 328:V2.2.2, EN 300 330:V2.1.1, EN 300 440:V2.2.1*¹
EN 301 489-1:V1.9.2 / V2.1.1 / V2.2.3, EN 301 489-3:V2.1.1 / V2.3.2, EN 301 489-17:V3.1.1 / V3.2.4
EN 301 489-19:V2.1.1 / V2.2.1, EN 301 893:V2.1.1, EN 303 413:V1.2.1

Intentional Radiators (FCC Part 15 Subpart C): ANSI C63.10-2013*¹
U-NII without DFS International Radiators (FCC Part 15 Subpart E): ANSI C63.10-2013*¹
U-NII with DFS International Radiators (FCC Part 15 Subpart E): ANSI C63.10-2013*¹
U-NII with DFS International Radiators (FCC Part 15 Subpart E): FCC KDB Publication 905462 D02
U-NII DFS Compliance Procedures New Rules v02 (April 8, 2016) *¹

*¹: Freq Range up to 40 GHz.

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 (7.23, 2023).