Scope of Accreditation

（Measurement Method）

Accreditation Number: VLAC-047
Expiration Date: February 28, 2025

〔Name of Laboratory〕

TDK CORPORATION

〔Test site name〕

EMC CENTER

〔Test site Address〕

2-15-7 Higashi-Owada, Ichikawa-shi, Chiba-ken, 272-8558 Japan

〔Measurement Methods〕

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: 150 kHz - 6 GHz
    - **[Test condition] Quasi Free Space**
      Measurement Frequency Range: 1 GHz - 6 GHz
  - **Disturbance magnetic field strength measurement**
    - **[Test condition] Loop Antenna**
- **Conducted disturbance Measurement: AC mains port**
  - **Voltage Measurement [Test condition] AMN**
- **Conducted disturbance Measurement: Telecommunication port**
  - **Voltage Measurement [Test condition] AAN**
- **Conducted disturbance Measurement: DC power line port**
  - **Voltage Measurement [Test condition] AMN**
  - **Conductive interference test against in-vehicle equipment**

Immunity test

Electro static discharge test	**Contact discharge, Air discharge, Indirect discharge**
Radiated electromagnetic field strength	**Measurement Frequency Range: 80 MHz – 6 GHz**
against in-vehicle	**Measurement Frequency Range: 200 MHz – 6 GHz**
Reverberation chamber	**Measurement Frequency Range: 200 MHz – 6 GHz**
Electrical fast transient/burst (EFT/B)	**Mains port, Telecommunication/Signal port**
Surge	**Mains port**

- **RF conducted interference**
  - **Mains port measurement frequency range:150 kHz – 80 MHz**
  - **Telecommunication port measurement frequency range:150 kHz – 80 MHz**
  - **Bulk current injection test, measurement frequency range: 100 kHz – 400 MHz**
  - **Road vehicles - Portable transmitters, measurement frequency range: 360 MHz – 6 GHz**
- **Radiated magnetic field**
- **Road vehicles - Immunity to magnetic fields**
- **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 2
Magnetic field strength [Test condition] Magnetic probe

Voluntary EMC Laboratory Accreditation Center Inc.

Scope of Accreditation

（Test standards）

Accreditation Number: VLAC-047
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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 6 GHz)
FCC 47 CFR Part 15 Subpart B: ANSI C63.4a-2017 (up to 6 GHz)
CISPR 11:2009+A1:2010 / 2015+A1:2016 / 2015+A1:2016+A2:2019
EN 55011:2009+A1:2010 / 2016+A1:2017+A11:2020 / 2016+A1:2017+A11:2020+A2:2021
CISPR 32:2015 / 2015+A1:2019
EN 55032:2015+A11:2020 / 2015+A11:2020+A1:2020
CISPR 16-2-1:2008+A1:2010+A2:2013 / 2014+A1:2017
CISPR 16-2-3:2006 / 2010+A1:2010+A2:2014 / 2016+A1:2019
IEC 61000-6-3*[1]:2006+A1:2010 / 2020, EN 61000-6-3*[1]:2007+A1:2011 / 2021
IEC 61000-6-4*[1]:2006+A1:2010 / 2018, EN 61000-6-4*[1]:2007+A1:2011 / 2019
IEC 60601-1-2:2014+A1:2020, EN 60601-1-2:2015+A1:2021
***[1]: Excluding the scope of IEC 61000-4-20, EN 61000-4-20 and FAR range.**

Immunity test

IEC 61000-4-2:2008, EN 61000-4-2:2009
IEC 61000-4-3:2006+A1:2007+A2:2010 / 2020, EN 61000-4-3:2006+A1:2008+A2:2010 / 2020
IEC 61000-4-4:2012, EN 61000-4-4:2012
IEC 61000-4-5:2005 / 2014+A1:2017, EN 61000-4-5:2014+A1:2017
IEC 61000-4-6:2008 / 2013, EN 61000-4-6:2014
IEC 61000-4-8:2009, EN 61000-4-8:2010
IEC 61000-4-11:2004+A1:2017 / 2020, EN 61000-4-11:2004+A1:2017 / 2020
IEC 61000-4-21:2011 (Immunity only)
IEC 61000-6-1*[2]:2005 / 2016, EN 61000-6-1*[2]:2007 / 2019
IEC 61000-6-2*[2]:2005 / 2016, EN 61000-6-2*[2]:2005 / 2019
IEC 60601-1-2:2014+A1:2020*[3], EN 60601-1-2:2015+A1:2021*[3]
CISPR 35:2016*[4], EN 55035:2017+A11:2020*[4]
***[2]: Excluding the scope of IEC 61000-4-20/-4-22/-4-34 and IEC 61000-4-20/-4-22/-4-34.**
***[3]: Excluding the scope of IEC 61000-4-39 and EN 61000-4-39.**
***[4]: Excluding the scope of IEC 61000-4-20, EN 61000-4-20 and the range of broadband impulse noise disturbances (repetitive and isolated).**

Harmonic Test in Public Low Voltage Systems

IEC 61000-3-2:2005+A1:2008+A2:2009 / 2014 / 2018+A1:2020, EN 61000-3-2:2014 / 2019
IEC 61000-3-3:2008 / 2013 / 2013+A1:2017+A2:2021
EN 61000-3-3:2013 / 2013+A1:2019+A2:2021
IEC 61000-3-11:2000 / 2017, EN 61000-3-11:2000 / 2019
IEC 61000-3-12:2004 / 2011+A1:2021, EN 61000-3-12:2011
IEC 61000-6-3:2006+A1:2010 / 2020, EN 61000-6-3:2007+A1:2011 / 2021
IEC 60601-1-2:2014+A1:2020, EN 60601-1-2:2015+A1:2021

Vehicle /In-vehicle equipment test

CISPR 25:2008 / 2016 / 2021 (Except for Vehicle)
ISO 11452-2:2004 / 2019
ISO 11452-4:2011 / 2020
ISO 11452-8:2007 / 2015 (Except for Helmholtz coil method)
ISO 11452-9:2012 / 2021
ISO 11452-11:2010
ISO 10605:2001 / 2008+A1:2014
ISO 7637-1:2015
ISO 7637-2:2004+A1:2008 / 2011
ISO 7637-3:2007 / 2016 (Except for ICC method)
ISO 16750-2:2010 / 2012 (Scope cover Clause 4.6.3 and 4.6.4)

Telecommunication equipment performance 2

IEC 62311:2019 (up to 400 kHz)
EN 62311:2008 (up to 400 kHz), EN IEC 62311:2020 (up to 400 kHz)

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If test standards do not include the edition, it means the latest one at the date of renewal (3.1,2023).