



In-vehicle devices EMC Testing Services

Introducing solutions supporting a wide selection of regulations

Empowering Trust™

UL's advanced technological capabilities in EMC automotive testing

UL provides EMC testing services for in-vehicle devices based on long and extensive experience.

Overview of Testing Services

UL Japan is accredited by JAB and A2LA as a testing/calibration center based on ISO/IEC 17025. As a laboratory recognized by multiple automobile manufacturers, we provide in-vehicle equipment EMC testing services and test equipment calibration services.

Regulatory testing and certifications support

We support a wide range of tests and approvals' attainment based on international automotive regulations (ECE Regulation), international standards (ISO, CISPR), and regulations covering automobile security, motorcycle and three-wheel vehicles as well as automobiles and in-vehicle parts. (VCA: Technical Service, VINCOTTE/Snch: recognized testing facility.)

Certification testing to automobile manufacturer standards

We conduct EMC testing in compliance with each automobile manufacturer's standards. In particular, as a recognized testing facility for manufacturers such as GM, FORD, Jaguar Land Rover, and MAZDA, we have extensive experience with EMC testing in support of manufacturer-specific requirements. We also support voltage fluctuation testing required for devices connected to the high voltage power supply lines of EV, HV and PHV vehicles.

E-mark

This is a mark, E plus a country code of the testing and approval granting organization, indicating conformance to the requirements of ECE Regulations for automotive parts. (E1: Germany, E2: France, E3: Italy...)



Automotive related test standard

CISPR 25 and similar measurements	Radiated disturbance/conducted disturbance voltage/low frequency conduction/magnetic field: 1 Hz – 6 GHz
ISO 11452-2, SAE J1113-21	Radiated electromagnetic field (ALSE) : 200 MHz – 6 GHz, 200 V/m : 1 GHz – 4 GHz, 300 V/m : 1.2 GHz – 1.4 GHz, 600 V/m : 2.7 GHz – 3.1 GHz, 600 V/m
ISO 11452-3, SAE J1113-24	Radiated electromagnetic field (TEM cell): 10 kHz – 400 MHz, 200 V/m
ISO 11452-4, SAE J1113-4	BCI Test: 1 MHz – 400 MHz, 500 mA TWC Test: 400 MHz – 3 GHz, 33 dBm
ISO 11452-5, SAE J1113-23	Radiated electromagnetic field (50 Ω, 90 Ω strip line): 10 kHz – 1 GHz, 280 V/m
ISO 11452-7, SAE J1113-3	Direct power injection: 250 kHz – 500 MHz, 0.8 W/2 A BAN, 30 A BAN
ISO 11452-8	Radiating 120 mm magnetic loop: DC-1 MHz, Max 1000 A/m 0.4 m, 1.2 m Helmholtz
ISO 11452-9	Portable transmission antenna
ISO 11452-10	Immunity in the extended audio frequency range
SAE J1113-25	Tri-plate line: 10 kHz – 1000 MHz, 200 V/m
ISO 7637-2/-3, ISO 16750-2 JASO D001-94 5.7	Transient voltage emission: Slow/fast pulse Transient voltage immunity: Pulse type Harness immunity: CCC, DCC, ICC
Damped oscillating pulse	Output voltage: 100 V – 1500 V/oscillation frequency: 1.5 MHz/ Half-wave peak time: 10 μs/Repetition period: 0.4–400 Hz
Impulse	Square wave: 50 ns – 1 μs, ±2 kV/triangle wave: 1 μs, ±2 kV
DC high voltage line voltage fluctuation test	Output voltage: 0 – ±500 V/78 A, 0 – ±60 V/150 A Output frequency DC – 5 kHz, DC – 150 kHz Output waveform: DC, Ramp, Square, Triangle, Sine, Sine sweep, Sine ramp... Minimum period for voltage change: ≤ 1 ms/500 V

Fixed type Dynamo anechoic chamber
EHV Chamber



Site information for UL Japan Automotive Equipment EMC Laboratory

Testing facility	Business overview	Equipment overview
Automotive Technology Center (ATC)	<ul style="list-style-type: none"> Testing services: On-site testing, testing by request Supported standards: International Standards (CISPR 25, ISO 11452 series, ISO 7637 series, ISO 10605 series, and others) In-vehicle device EMC testing (ECE Reg. 10, EN 50498) Theft prevention alarm device (ECE Reg. 97, ECE Reg. 116) Auto manufacturers' standards Electrical testing (ISO 16750-2, LV 124, LV 148, LV 123) Applicable products: Alarm systems, immobilizer, car audio, navigation system, ECU, various sensors, other in-vehicle equipment for HV, PHV, EV vehicles requiring high voltage power 	<ul style="list-style-type: none"> 2 anechoic chambers 1 EHV chamber (CISPR 25:2016 Ed. 4 Annex 1 compliant) 3 anechoic chambers for in-vehicle equipment 2 shield chambers 2 electrical testing rooms TEM cell • G-TEM cell 50 Ω Strip line • Tri-plate DC low voltage • high voltage power supply fluctuation testing equipment Water proof testing room (IPX1...X6) Dust proof testing room (IP1X...6X) Vibration test room • Thermostatic chamber Interoperability test facility
Headquarters EMC Testing Laboratory	<ul style="list-style-type: none"> Testing services: On-site testing, testing by request Supported standards: ISO 7637 series Applicable products: Car audio, sensors, other in-vehicle equipment 	<ul style="list-style-type: none"> ISO 7637 testing system G-TEM cell
Shonan EMC Laboratory	<ul style="list-style-type: none"> Testing services: On-site testing, testing by request Supported standards: International Standards (CISPR 25, ISO 11452 series, ISO 7637 series, ISO 10605 series, and others) In-vehicle device EMC testing (ECE Reg. 10, EN 50498) Other, automobile manufacturers' standards Applicable products: Car audio, sensors, other in-vehicle devices 	<ul style="list-style-type: none"> 1 anechoic chamber for in-vehicle devices 1 shield chamber for in-vehicle devices ISO 7637 testing system
Kashima EMC Laboratory	<ul style="list-style-type: none"> Testing services: On-site testing, testing by request Supported standards: GM standards (GMW 3097, GMW 3172) Ford standards (ES-XW7T-1A278-AB, -AC, EMC-CS-2009.1, FMC 1278) JAGUAR LAND ROVER standards (JLR-EMC-CS v1.0) MAZDA standards, other automobile manufacturers' standards International Standards (CISPR 25, ISO 11452 series, ISO 7637 series, ISO 10605 series, and others) In-vehicle device EMC testing (ECE Reg. 10, EN 50498) Electrical testing (ISO 16750-2, LV 124, LV 148, LV 123) Applicable products: Car audio, various sensors, other automotive equipment, in HV, PHV, EV vehicles that require high voltage to be installed 	<ul style="list-style-type: none"> 3 anechoic chambers for automotive equipment 2 shield chambers for automotive equipment 1 high voltage electrical test room ISO 7637 testing system G-TEM cell TEM cell 50 Ω Strip line 90 Ω Strip line Tri-plate DC low voltage, high voltage power supply fluctuation testing equipment Electrical testing equipment



The scope of accreditation covered by each accreditation body logo is different. Please refer to the following website for details: http://japan.ul.com/resources/emc_accredited/.
Not all tests are covered by each of the listed accreditation.

Test equipment calibration (Kashima EMC laboratory)

The laboratory performs ISO/IEC 17025 calibration of testing equipment used in EMC testing. The demand for A2LA accredited calibration is growing as a result of the MRA (Mutual Recognition Agreement) system. By issuing a calibration certificate with the A2LA symbol, we support a wide range of calibration requests from domestic as well as overseas, and guarantee high quality with our advanced technology.



For the certification scope of logos, please refer to the following website: http://japan.ul.com/resources/emc_accredited/.
Not all calibration services offered are covered by the A2LA accreditation scope.



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