

CERTIFICATE OF ACCREDITATION

Global CS Center of SAMSUNG Electronics Co., Ltd.

Accreditation No. : KT124

Corporation Registration No. : 130111-0006246

Address of Laboratory : (Maetan-dong) 129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, Korea

date of Initial Accreditation : January 29, 2001

Duration : July 8, 2018 ~ July 7, 2022

Scope of Accreditation : Attached Annex

Date of issue : June 13, 2019

This testing laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025 : 2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique).



LEE Seung Woo

Administrator

Korea Laboratory Accreditation Scheme

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02. Chemical Test

02.025 Door and Other Environment

Test Method	Standard designation	Test range
IEC 62321-6:2015	Determination of certain substances in electrotechnical products -Part 6: Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography-mass spectrometry(GC-MS)	PBB 5 mg/kg 이상 PBDE 5 mg/kg 이상

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03. Electrical Test

03.007 Domestic Electrical Machinery Apparatus

Test Method	Standard designation	Test range
KC 60335-1(5.0): 2016	Household and similar electrical appliance - Safety - Part 1: General requirements [Exception] 32. Radiation, toxicity and similar hazards	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
KC 60335-2-2(6.1): 2015	Household and similar electrical appliances - Safety - Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
KC 60335-2-4(6.1): 2016	Household and similar electrical appliance - Safety - Part 2-4: Particular requirements for spin extractors	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
KC 60335-2-6(5.1): 2016	Household and similar electrical appliance - Safety - Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
KC 60335-2-7(7.0): 2015	Household and similar electrical appliance - Safety - Part 2-7: Particular requirements for washing machines	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
K 60335-2-9(6.1): 2013	Household and similar electrical appliance - Safety - Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
KC 60335-2-11(7.1): 2015	Household and similar electrical appliance - Safety - Part 2-11: Particular requirements for tumble dryers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
KC 60335-2-25(5.2): 2015	Household and similar electrical appliance - Safety - Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens [Exception] 22.105 Magnetic-operated Door-interlock interruption test by steel armature	AC : (10 ~ 600) V DC : (0 ~ 1 000) V

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03.007 Domestic Electrical Machinery Apparatus

Test Method	Standard designation	Test range
KC 60335-2-40(4.2): 2015	Household and similar electrical appliance - Safety - Part 2-40: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 31 Salt mist Test(IEC 60058-2-52)	
KC 60335-2-65(2.1): 2015	Household and similar electrical appliances - Safety - Part 2-65: Particular requirements for air-cleaning appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-1(5.0): 2010	Household and similar electrical appliance - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-2-2(6.1): 2012	Household and similar electrical appliances - Safety - Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-2-4(6.1): 2012	Household and similar electrical appliance - Safety - Part 2-4: Particular requirements for spin extractors	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-2-6(5.2): 2008	Household and similar electrical appliance - Safety - Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-2-7(7.1): 2012	Household and similar electrical appliance - Safety - Part 2-7: Particular requirements for washing machines	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-2-9(6.0): 2008	Household and similar electrical appliance - Safety - Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
IEC 60335-2-11(7.1): 2012	Household and similar electrical appliance - Safety - Part 2-11: Particular requirements for tumble dryers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V

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Test Method	Standard designation	Test range
IEC 60335-2-25(5.2): 2010	Household and similar electrical appliance - Safety - Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 22.105 Magnetic-operated Door-interlock interruption test by steel armature	
IEC 60335-2-40(5.0): 2013	Household and similar electrical appliance - Safety - Part 2-40: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 31 Salt mist Test(IEC 60058-2-52)	
IEC 60335-2-65(2.0): 2008	Household and similar electrical appliances - Safety - Part 2-65: Particular requirements for air-cleaning appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-1:2012	Household and similar electrical appliance - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-1:2012+A11: 2014	Household and similar electrical appliance - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-4:2010	Household and similar electrical appliance - Safety - Part 2-4: Particular requirements for spin extractors	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-4:2010+A1: 2015	Household and similar electrical appliance - Safety - Part 2-4: Particular requirements for spin extractors	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-6:2003 +A1:2005+A2:2008 +A11:2010+A12:2012 +A13:2013	Household and similar electrical appliance - Safety - Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-7:2010 +A1:2013	Household and similar electrical appliance - Safety - Part 2-7: Particular requirements for washing machines	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-7:2010+A1: 2013+A11:2013	Household and similar electrical appliance - Safety - Part 2-7: Particular requirements for washing machines	AC : (10 ~ 600) V DC : (0 ~ 1 000) V

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Test Method	Standard designation	Test range
EN 60335-2-9:2003 +A1:2004+A2:2006 +A12:2007+A13:2010	Household and similar electrical appliance - Safety - Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-11:2010 +A11:2012	Household and similar electrical appliance - Safety - Part 2-11: Particular requirements for tumble dryers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
EN 60335-2-25:2012	Household and similar electrical appliance - Safety - Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[제외 항목] 22.105 Magnetic-operated Door-interlock interruption test by steel armature	
EN 60335-2-40:2003 +A11:2004+A12:2005 +A2:2009+A13:2012	Household and similar electrical appliance - Safety - Part 2-40: Particular requirements for electrical heat pumps, air conditioners and dehumidifiers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 31 Salt mist Test(IEC 60058-2-52)	
UL 923:2008	UL Standard for Safety for Microwave cooking appliances	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
UL 2157:2004	UL Standard for Safety for Electrical clothes washing machines and extractors	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
UL 2158:2009	UL Standard for Safety for Electric clothes dryers	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
K 60065:2008	Audio, video and similar electronic apparatus - Safety requirement	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 6.1 Ionizing radiation 12.3 REMOTE CONTROL devices held in hand 14.6 Switches ANNEX H Insulated winding wires for use without interleaved insulation	

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Test Method	Standard designation	Test range
IEC 60065:2001 (Seventh Edition) +A1:2005+A2:2010	Audio, video and similar electronic apparatus - Safety requirement	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 6.1 Ionizing radiation 12.3 REMOTE CONTROL devices held in hand 14.6 Switches 20.2 Z1 Resistance to Candle Flamen ignition ANNEX H Insulated winding wires for use without interleaved insulation	
IEC 60065:2014 (Eighth Edition)	Audio, video and similar electronic apparatus - Safety requirement	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 6.1 Ionizing radiation 12.3 REMOTE CONTROL devices held in hand 14.6 Switches 20.2 Z1 Resistance to Candle Flamen ignition ANNEX H Insulated winding wires for use without interleaved insulation	
EN 60065:2002 +A1:2006+A11:2008 +A2:2010+A12:2011	Audio, video and similar electronic apparatus - Safety requirement	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 6.1 Ionizing radiation 12.3 REMOTE CONTROL devices held in hand 14.6 Switches 20.2 Z1 Resistance to Candle Flamen ignition ANNEX H Insulated winding wires for use without interleaved insulation	

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03.007 Domestic Electrical Machinery Apparatus

Test Method	Standard designation	Test range
EN 60065:2014	Audio, video and similar electronic apparatus - Safety requirement	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 6.1 Ionizing radiation 12.3 REMOTE CONTROL devices held in hand 14.6 Switches 20.2 Z1 Resistance to Candle Flamen ignition ANNEX H Insulated winding wires for use without interleaved insulation	
UL 60065(7th):2012	Audio, video and similar electronic apparatus - Safety requirement	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 6.1 Ionizing radiation 12.3 REMOTE CONTROL devices held in hand 14.6 Switches 20.2 Z1 Resistance to Candle Flamen ignition ANNEX H Insulated winding wires for use without interleaved insulation	
K 60950-1:2011	Information technology equipment - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 2.10.5.4 Semiconductor devices 2.10.8.4 Abrasion resistance test 4.3.12 Flammable liquid 4.3.13.3 Effect of UV radiation on materials 4.3.13.4 Human Exposure To UV Radiation 4.3.13.5.2 Laser(LEDs) Annex A.3 Hot Flaming Oil Test Annex H Ionizing radiation	

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Test Method	Standard designation	Test range
IEC 60950-1:2005 +A1:2009	Information technology equipment - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 2.10.5.4 Semiconductor devices 2.10.8.4 Abrasion resistance Test 4.3.12 Flammable liquid 4.3.13.2 Ionizing radiation 4.3.13.3 Effect of UV radiation on materials 4.3.13.4 Human Exposure To UV Radiation 4.3.13.5 Laser(including laser diodes) and LEDs Annex A.3 Hot Flaming Oil Test Annex H Ionizing radiation	
IEC 60950-1:2005 +A1:2009+A2:2013	Information technology equipment - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 2.10.5.4 Semiconductor devices 2.10.8.4 Abrasion resistance Test 4.3.12 Flammable liquid 4.3.13.2 Ionizing radiation 4.3.13.3 Effect of UV radiation on materials 4.3.13.4 Human Exposure To UV Radiation 4.3.13.5 Laser(including laser diodes) and LEDs Annex A.3 Hot Flaming Oil Test Annex H Ionizing radiation	

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03.007 Domestic Electrical Machinery Apparatus

Test Method	Standard designation	Test range
EN 60950-1:2006 +A11:2009+A1:2010 +A12:2011+A2:2013	Information technology equipment - Safety - Part 1: General requirements(Include AC:2011)	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 2.10.5.4 Semiconductor devices 2.10.8.4 Abrasion resistance Test 4.3.12 Flammable liquid 4.3.13.2 Ionizing radiation 4.3.13.3 Effect of UV radiation on materials 4.3.13.4 Human Exposure To UV Radiation 4.3.13.5 Laser(including laser diodes) and LEDs Annex A.3 Hot Flaming Oil Test Annex H Ionizing radiation	
UL 60950-1:2007	Information technology equipment - Safety - Part 1: General requirements	AC : (10 ~ 600) V DC : (0 ~ 1 000) V
	[Exception] 22.10.5.4 Semiconductor devices 2.10.8.4 Abrasion resistance Test 4.3.12 Flammable liquid 4.3.13.2 Ionizing radiation 4.3.13.3 Effect of UV radiation on materials 4.3.13.4 Human Exposure To UV Radiation 4.3.13.5 Laser(including laser diodes) and LEDs Annex A.3 Hot Flaming Oil Test Annex H Ionizing radiation	

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Test Method	Standard designation	Test range
IEC 62368-1:2014	Audio/video, information and ommunication technology equipment - Part 1: Safety requirements	DC : (0 ~ 60) V
	[Exception] 4.4.4 Safeguard robustness 4.7 Equipment for direct insertion into mains socket-outlets 5.3.2.4 (V.1.6) Terminals for connecting stripped wire 5.4 Insulation materials and requirements 5.5 Components as safeguards 5.6 Protective conductor 5.7 Prospective touch voltage, touch current and protective conductor current 8.5 Safeguards against moving parts 8.6.2 Static stability 8.6.3 Relocation stability test 8.6.4 Glass slide test 8.6.5 Horizontal force test and compliance criteria 8.9 Wheels or casters attachment requirements 8.10 Carts, stands and similar carriers 8.12 (T.11) Telescoping or rod Antennas 10.5 Safeguards against x-radiation G.5 Wound components G.7 Mains supply cords M.5 Risk of burn due to short-circuit during carrying M.6 Prevent of short-circuits and protection from other effects of electric current M.7 Risk of explosion from lead acid and NiCd batteries M.8 Protection against internal ignition from external spark sources of batteries with aqueous electrolyte M.9 Preventing electrolyte spillage	

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Test Method	Standard designation	Test range
EN 62368-1:2014	Audio/video, information and ommunication technology equipment - Part 1: Safety requirements	DC : (0 ~ 60) V
	[Exception] 4.4.4 Safeguard robustness 4.7 Equipment for direct insertion into mains socket-outlets 5.3.2.4 (V.1.6) Terminals for connecting stripped wire 5.4 Insulation materials and requirements 5.5 Components as safeguards 5.6 Protective conductor 5.7 Prospective touch voltage, touch current and protective conductor current 8.5 Safeguards against moving parts 8.6.2 Static stability 8.6.3 Relocation stability test 8.6.4 Glass slide test 8.6.5 Horizontal force test and compliance criteria 8.9 Wheels or casters attachment requirements 8.10 Carts, stands and similar carriers 8.12 (T.11) Telescoping or rod Antennas 10.5 Safeguards against x-radiation G.5 Wound components G.7 Mains supply cords M.5 Risk of burn due to short-circuit during carrying M.6 Prevent of short-circuits and protection from other effects of electric current M.7 Risk of explosion from lead acid and NiCd batteries M.8 Protection against internal ignition from external spark sources of batteries with aqueous electrolyte M.9 Preventing electrolyte spillage	

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03.011 Electromagnetic Compatibility

Test method	Standard designation	Test range
GOST 29216-91:2002	Emission	CE : 150 kHz ~ 30 MHz RE : 30 MHz ~ 6 GHz
GOST R 50628-95:2002	Immunity	ESD : (2 ~ 8) kV RS : 80 MHz ~ 3 GHz EFT/Busrt : (0.5 ~ 1) kV SURGE : (0.5 ~ 2) kV CS : 150 kHz ~ 80 MHz PMF : (1 ~ 3) A/m Voltage Dip : Max Input 16 A/1 Phase
EN 61000-4-13:2002	Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests [Exception] 3 Phase Product	Max Input : 16 A/1 Phase
KS C 9811:2017	Industrial, scientific and medical (ISM) radio-frequency equipment - Radio disturbance characteristics - Limits and methods of measurement	CE : 150 kHz ~ 30 MHz RE : 9 kHz ~ 18 GHz
KS C 9814-1:2017	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	CE : 150 kHz ~ 30 MHz RE : 30 MHz ~ 1 GHz DP : 30 MHz ~ 300 MHz
KS C 9814-2:2017	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity product family standard	ESD : (4 ~ 8) kV RS : 80 MHz ~ 1 GHz EFT/Burst : (0.5 ~ 1) kV SURGE : (0.5 ~ 2) kV CS : 150 kHz ~ 230 MHz Voltage Dip : Max Input 16 A/1 Phase
KS C 9610-4-2:2017	Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 2: Electrostatic discharge immunity test - Basic EMC publication	ESD : (2 ~ 16) kV
KS C 9610-4-3:2017	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques; Radiated, radio- frequency, electromagnetic field immunity test	RS : 80 MHz ~ 3 GHz Field Strength : (1 ~ 10) V/m
KS C 9610-4-4:2017	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EFT/Burst : (0.2 ~ 4) kV
KS C 9610-4-5:2017	Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 5: Surge immunity test	SURGE : (0.5 ~ 6) kV

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03.011 Electromagnetic Compatibility

Test method	Standard designation	Test range
KS C 9610-4-6:2017	Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 6: Immunity to conducted disturbances, induced by radio-frequency fields	CS : 150 kHz ~ 230 MHz Conducted disturbance level : (1 ~ 10) V
KS C 9610-4-8:2017	Electromagnetic compatibility (EMC); part 4: testing and measurement techniques; section 8: power frequency magnetic field immunity test; basic EMC publication	Magnetic field level : (1 ~ 100) A
KS C 9610-4-11:2017	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests [Exception] 3 Phase Product	Max Input : 16 A/1 Phase
KS C IEC61000-4-13:2010	Electromagnetic compatibility (EMC) - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests [Exception] 3 Phase Product	Max Input : 16 A/1 Phase
ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	CE : 150 kHz ~ 30 MHz RE : 30 MHz ~ 40 GHz
ICES-003 Issue 6	Information Technology Equipment (ITE) - Limits and methods of measurement	CE : 150 kHz ~ 30 MHz RE : 30 MHz ~ 40 GHz
CFR 47, FCC Part 15:2017	PART 15 - RADIO FREQUENCY DEVICES	CE : 150 kHz ~ 30 MHz RE : 30 MHz ~ 40 GHz