


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>UKAS TESTING</p> <p>4290</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>Global CS Center of Samsung Electronics Co. Ltd</h3> <p>Issue No: 034 Issue date: 26 September 2021</p>	
	<p>(Maetan Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea</p>	<p>Contact: Mr Haekeun Song Tel: +82 (0)31 277 7782 Fax: +82 (0)31 277 7762 E-Mail: hkuen.song@samsung.com Website: www.samsung.com</p>

Testing performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
<p>Address R3 Samsung Electronics Co Ltd (Maetan Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea</p> <p>Local contact Mr Tae Young Jang Tel: + (82)-(0)31-277-7876 Fax: + (82)-(0)31-279-1745 Email: prokio.jang@samsung.com</p>	<p>Testing EMC Radio</p>	R3
<p>Address R4 Samsung Electronics Co Ltd (Maetan Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea</p> <p>Local contact Mr Min Gon Kim Tel: + (82)-(0)31-277-7746 Fax: + (82)-(0)31-277-7753 Email: mg.kim@samsung.com</p>	<p>Testing EMC</p>	R4
<p>Address R4 Samsung Electronics Co Ltd (Maetan Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea</p> <p>Local contact Mr Joung Woo Kang Tel: + (82)-(0)31-277-7845 Fax: + (82)-(0)31-277-7762 Email: jw01.kang@samsung.com</p>	<p>Testing Environmental Battery Testing</p>	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Location details	Activity	Location code
Address R4 Samsung Electronics Co Ltd (Maetan Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea	Local contact Mrs Su Young Son Tel: + (82)-(0)10-5822-6671 Fax: + (82)-(0)31-277-7753	Testing: Wi Fi R4
Address R4 Samsung Electronics Co Ltd (Maetan Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea	Local contact Mr Jaeyu Kim Tel: + (82)-(0)10-4075-9122 Fax: + (82)-(0) 31-277-1375 Email: jy1627.kim@samsung.com	Testing: DTV R4
Address R5 Samsung Electronics Co Ltd (Maetan 3-Dong) 129 Samsung-ro Yeongtong-Gu Suwon-Si Gyeonggi-Do 16677 Korea	Local contact Mr Sun Ho Kim Tel: + (82)-(0)31-8062-4481 Fax: + (82)-(0)31-8062-4499 Email: seonho79.kim@samsung.com	Testing: EMC R5



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Audio-Video Equipment Computers and Peripherals Digital IT Equipment Office Equipment - Electrical Radio and TV Equipment Alarm systems Home Appliances ISM Equipment	1 EMC Tests 1.1 Conducted Emissions 150 kHz to 30 MHz excluding discontinuous interference	EN 55011:2007+A2:2007 EN 55011:2009 EN 55011:2009+A1:2010 EN 55011:2016 EN 55011:2016+A1:2017 EN 55011:2016+A11:2020 CISPR 11:2009 CISPR 11:2010 CISPR 11:2015 CISPR 11:2017 AS/NZS CISPR 11:2004 AS/NZS CISPR 11:2011 AS CISPR 11:2017	R4, R5
		EN 55013:2001+A1:2003+A2:2006 EN 55013:2013 CISPR 13:2009 CISPR 13:2015 AS/NZS CISPR 13:2004 AS/NZS CISPR 13:2012	R4
		EN 55014-1:2006+A1:2009 EN 55014-1:2006+A1:2009+A2:2011 EN 55014-1:2017 EN 55014-1:2017+A11:2020 CISPR 14-1:2011 CISPR 14-1:2020	R4
		AS/NZS CISPR 14.1:2003 AS/NZS CISPR 14.1:2010 AS/NZS CISPR 14.1:2013 AS CISPR 14.1:2018	
		EN 55022:2006+A1:2007 EN 55022:2010+AC1:2011 CISPR 22:2008	R3, R4, R5



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	1 EMC Tests (continued)		
	1.1 Conducted Emissions 150 kHz to 30 MHz excluding discontinuous interference (continued)	AS/NZS CISPR 22:2006 AS/NZS CISPR 22:2009 AS/NZS CISPR 22:2009+A1 EN 55032:2012+AC1:2013 EN 55032:2015 EN 55032 :2015+AC :2016 EN 55032:2015+A11:2020 CISPR 32:2012 CISPR 32:2015 AS/NZS CISPR 32:2013 AS/NZS CISPR 32:2015	R3, R4, R5
	1.2 Radiated Emissions E-field: 30 MHz to 18 GHz H-field: 9 kHz to 30 MHz	EN 55011:2007+ A2:2007 EN 55011:2009 EN 55011:2009+A1:2010 EN 55011:2016 EN 55011:2016+A1:2017 EN 55011:2016+A11:2020 CISPR 11:2009 CISPR 11:2010 CISPR 11:2015 CISPR 11:2017 AS/NZS CISPR 11:2004 AS/NZS CISPR 11:2011 AS CISPR 11:2017	R4, R5
E-field: 30 MHz to 3 GHz	EN 55013:2001+A1:2003+A2:2006 EN 55013:2013 CISPR 13:2009 CISPR 13:2015 AS/NZS CISPR 13:2004 AS/NZS CISPR 13:2012	R4	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd

Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	1 EMC Tests (continued) 1.3 Disturbance Power 30 MHz to 300 MHz (continued)	EN 55014-1:2006+A1:2009 EN 55014-1:2006+A1:2009+ A2:2011 EN 55014-1:2017 EN 55014-1:2017+A11:2020 CISPR 14-1:2011 CISPR 14-1:2020 AS/NZS CISPR 14.1:2013 AS CISPR 14.1:2018	R4
	1.4 Discontinuous Emissions Clicks 150 kHz to 30 MHz	AS/NZS CISPR 14.1:2003 AS/NZS CISPR 14.1:2010 AS/NZS CISPR 14.1:2013 AS/NZS CISPR 14.1:2018 EN 55014-1:2006+A1:2009 EN 55014-1:2006+A1:2009+ A2: 2011 EN 55014-1:2017 EN 55014-1:2017+A11:2020 CISPR 14-1:2011 CISPR 14-1:2020 AS/NZS CISPR 14.1:2003 AS/NZS CISPR 14.1:2010 AS/NZS CISPR 14.1:2013 AS CISPR 14.1:2018	R4
	1.5 Current Harmonics	EN 61000-3-2:2006+A1:2009 EN 61000-3-2:2006+A1:2009+ A2:2009 EN 61000-3-2:2014 EN IEC 61000-3-2:2019 IEC 61000-3-2:2009 IEC 61000-3-2:2015 IEC 61000-3-2:2018	R3, R4, R5



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	1 EMC Tests (continued)		
	1.6 Voltage fluctuations and Flicker	EN 61000-3-3:1995 A1:1998+ A2:2005 EN 61000-3-3:2008 EN 61000-3-3:2013 EN 61000-3-3:2013+A1:2019 IEC 61000-3-3:2008 IEC 61000-3-3:2013	R3, R4, R5
	1.7 Electrostatic Discharge 2 kV to 16 kV	EN 61000-4-2:1995+A1:1998+ A2:2001 EN 61000-4-2:2009 IEC 61000-4-2:2001 IEC 61000-4-2:2008	R3, R4, R5
	1.8 Radiated Immunity 80 MHz to 6 GHz 3V/m (R3, R4, R5) 80 MHz to 6 GHz 10 V/m (R3, R5) EN 60601-1-2 Table 9 (R5) IEC 60601-1-2 Table 9 (R5)	EN 61000-4-3:1996 EN 61000-4-3:2002+A1:2002 EN 61000-4-3:2006+A1:2008 EN 61000-4-3:2006+A1:2008+ A2:2010 EN IEC 61000-4-3:2020 IEC 61000-4-3:2002 IEC 61000-4-3:2006 IEC 61000-4-3:2008 IEC 61000-4-3:2010	R3, R4, R5
	1.9 Fast Transient/Burst Immunity 0.25 kV to 4.0 kV	EN 61000-4-4:1995+A1:2001+ A2:2001 EN 61000-4-4:2004 EN 61000-4-4:2004+A1:2010 EN 61000-4-4:2012 IEC 61000-4-4:1995+A1:2000+ A2:2001 IEC 61000-4-4:2004 IEC 61000-4-4:2012	R3, R4, R5



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	1 EMC Tests (continued)		
	1.10 Surge 0.5 kV to 4 kV	EN 61000-4-5:1995+A1:2001 EN 61000-4-5:2006 EN 61000-4-5:2014 EN 61000-4-5:2014+A1:2017 IEC 61000-4-5:2005 IEC 61000-4-5:2014 IEC 61000-4-5:2014+A1:2017	R3, R4, R5
	1.11 Conducted Immunity 100 kHz to 250 MHz 85 W max	EN 61000-4-6:1996+A1:2001 EN 61000-4-6:2007 EN 61000-4-6: 2009 EN 61000-4-6: 2014 EN 61000-4-6:2014+AC:2015 IEC 61000-4-6:2003 IEC 61000-4-6:2004 IEC 61000-4-6:2006 IEC 61000-4-6:2008 IEC 61000-4-6:2013	R3, R4, R5
	1.12 Power-Frequency Magnetic Fields (Immunity) Frequency: 50 Hz to 60 Hz Field strength: up to 100 A/m	EN 61000-4-8:1993+A1:2001 EN 61000-4-8:2010 IEC 61000-4-8:2001 IEC 61000-4-8:2009	R5
	1.13 Voltage Dips and Interruptions Max inrush capability: R3 350A R4 487A R5 509A	EN 61000-4-11:1994+A1:2001 EN 61000-4-11:2004 EN 61000-4-11:2004+A1:2017 EN IEC 61000-4-11:2020 IEC 61000-4-11:1994 IEC 61000-4-11:2004	R3, R4, R5



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	<p>1 EMC Tests (continued)</p> <p>1.14 Generic and Product Specific Standards</p> <p>These Generic and Product specific tests are included in this Schedule, but limited to those referred basic standards that are explicitly listed in Sections 1.1 to 1.14</p>	<p>EN 50130-4:1995+A1:1998+ A2:2003</p> <p>EN 61000-6-1:2007 EN IEC 61000-6-1:2019 EN 61000-6-2:2005 EN IEC 61000-6-2:2019 EN 61000-6-3:2007 EN 61000-6-3:2007+A1:2011 EN 61000-6-4:2007 EN 61000-6-4:2007+A1:2011 EN IEC 61000-6-4:2019</p> <p>EN 61204-3:2000</p> <p>EN 55014-2:1997+A1:2001+ A2: 2008 EN 55014-2:2015 CISPR 14-2:2008 CISPR 14-2:2015 CISPR 14-2:2020</p> <p>EN 55024:1998+A1:2001+ A2:2003 EN 55024:2010 EN 55024:2010+A1:2015 Excluding Annexes: A.2 (TTE with Digital Interface) & F (ATMs) CISPR 24:2010 CISPR 24:2015 EN 55035:2017 EN 55035:2017+A11:2020 CISPR 35:2016</p> <p>EN 60601-1-2:2015 IEC 60601-1-2:2014 EN 60601-2-47:2015 IEC 60601-2-47:2012</p>	<p>R3, R4</p> <p>R3, R4, R5</p> <p>R3, R4, R5</p> <p>R3, R4, R5</p> <p>R3, R4, R5</p> <p>R5</p>
Limited to Small Portable Medical equipment. E.G ECG function of smart watch			



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	<p>1 EMC Tests (continued)</p> <p>1.15 Generic and Product Specific Standards</p> <p>These Generic and Product specific tests are included in this Schedule, but limited to those referred basic standards that are explicitly listed in Sections 1.1 to 1.14 (cont'd)</p>	<p>EN 301 489-1 V1.6.1 EN 301 489-1 V1.8.1 EN 301 489-1 V1.9.2 EN 301 489-1 V2.1.1 EN 301 489-1 V2.2.0 EN 301 489-1 V2.2.1 (draft) EN 301 489-1 V2.2.3 EN 301 489-3 V1.4.1 EN 301 489-3 V1.6.1 EN 301 489-3 V2.1.1 EN 301 489-7 V1.3.1 EN 301 489-8 V1.2.1 EN 301 489-17 V1.2.1 EN 301 489-17 V2.1.1 EN 301 489-17 V2.2.1 EN 301 489-17 V3.1.1 EN 301 489-17 V3.2.0 EN 301 489-17 V3.2.4 EN 301 489-19 V2.1.0 EN 301 489-19 V2.2.1 EN 301 489-23 V1.4.1 EN 301 489-23 V1.5.1 EN 301 489-24 V1.4.1 EN 301 489-24 V1.5.1 EN 301 489-26 V2.3.2 EN 301 489-33 V2.2.1 EN 301 489-50 V1.2.1 EN 301 489-50 V2.1.1 EN 301 489-50 V2.2.1 EN 301 489-52 V1.1.0 EN 301 489-52 V2.0.2 EN 300 328 V1.7.1 EN 300 328 V2.2.2 EN 303 386 V1.6.1 EN 303 446-1 V1.1.0 EN 303 446-1 V1.2.1</p>	<p>R3, R4, R5</p> <p>R5 R3 R3 R3 R3, R5 R3, R5 R3 R3 R3 R4</p>



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	<p><u>EMC Facilities</u></p> <p><u>In R3 location:</u> Fully Anechoic Chamber, 7.9 m x 4.3 m x 4.2 m, Fully Anechoic Chamber, 7.9 m x 4.0 m x 3.3 m, 10m Semi-Anechoic Chamber, 19.6 m x 12.4 m x 7.5 m Shielded Room No.1 (EFT/CS/Harmonic), 7.0 m x 5.4 m x 3.3 m, Shielded Room No.2 (CE), 7.0 m x 5.5 m x 3.3 m Shielded Room No.3 (Surge/ESD/Dip), 7.0 m x 5.4 m x 3.3 m,</p> <p><u>In R4 location:</u> Fully Anechoic Chamber 7.9 m x 4.6 m x 3.3 m (RS/S5/S6) , 10m Semi-Anechoic Chamber (2ea) 25.6 m x 18.4 m x 11.1m 3m Semi-Anechoic Chamber 12.1 m x 10.0 m x 6.9 m, Shielded Room No 1 (CE/ /DD), 9.1 m x 4.6 m x 3.3 m Shielded Room No.2 (Ant. Terminal/Surge/Dip), 7.9 m x 4.6 m x 3.3 m Shielded Room No.3 (ESD/ Harmonics), 7.9 m x 4.6 m x 3.3 m Shielded Room No.4 (DP), 10.9 m x 4.9 m x 3.3 m Shielded Room No.5 (CS/EFT), 10.9 m x 4.9 m x 3.3 m Shield Room Jacky Room (S3), 4.3 m x 4.9 m x 3.3 m</p> <p>Max EUT size: 1.5 m x 1.8 m x 1.5 m Max EUT weight: 2000 kg</p> <p>Power supplies available: 1phase: Up to AC 270 V, 20 to 5 kHz, 63 A 3 phase: Up to AC 470 V, 20 to 5 kHz, 48 A</p>		
	<p><u>In R5 location :</u> Fully Anechoic Chamber (RS), 9.2 m x 4.8 m x 4.3 m 10m Semi-Anechoic Chamber (2ea), 21.0 m x 13.0 m x 10.0 m Shielded Room No.4 (ESD/CS/EFT), 4.3 m x 6.4 m x 3.3 m Shielded Room No.5 (Harmonics/CE/SURGE/VDI), 8.1 m x 4.6 m x 3.3</p> <p>Power supplies available: 1 phase: up to AC 270 V, 20 to 5 kHz, 63 A 3 phase: up to AC 470 V, 20 to 5 kHz, 48 A</p>		



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries, Laptop, Notebook, Portable Computer Batteries	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests	CTIA Certification Requirements for Battery System Compliance to : IEEE 1725 : Rechargeable Batteries for Cellular Telephones IEEE 1625 : Rechargeable Batteries for Multi-Cell Mobile Computing Devices Revision 1.0	
	2.1 Isolation Properties	Clause 4.2, IEEE 1725	R4
	2.2 Shrinkage Allowance, Room Temperature	Clause 4.4, IEEE 1725	R4
	2.3 Shrinkage Allowance, Elevated Temperature	Clause 4.5, IEEE 1725	R4
	2.4 Electrode Geometry	Clause 4.9, IEEE 1725 Clause 4.8, IEEE 1625	R4
	2.5 Electrode Tabs (connection to cell terminals)	Clause 4.11, IEEE 1725 Clause 4.9, IEEE 1625	R4
	2.6 Application of Insulation	Clause 4.12, IEEE 1725 Clause 4.10, IEEE 1625 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries	R4
	2.7 Application of Supplementary Insulation	Clause 4.14, IEEE 1725	R4
	2.8 Cell Vent Mechanism Inner Pressure Reduction Mechanism	Clause 4.16, IEEE 1725 Clause 4.13, IEEE 1625 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries	R4
	2.9 Retention of Cell Contents and Projectile Testing	Clause 4.17, IEEE 1725	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (continued)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (continued)		
	2.10 Cell Thermal Test Thermal Abuse	Clause 4.50, IEEE 1725 Clause 4.53, IEEE 1625 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries Clause 7.3.4, IEC 62133-2:2017	R4
	2.11 Evaluation of Excess Lithium Plating and Short-Circuit Test on Cycled Cells	Clause 4.52, IEEE 1725 Clause 4.50, IEEE 1625	R4
	2.12 External Shorting of Cell Terminals	Clause 4.53, IEEE 1725 Clause 4.55, IEEE 1625 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.5 Clause 7.3.1, IEC 62133-2:2017 Clause 7.3.2, IEC 62133-2:2017	R4
	2.13 Battery Management Circuit Design	Clause 5.6, IEEE 1625	R4
	2.14 Cell connections	Clause 5.8, IEEE 1625	R4
	2.15 Ambient Consideration	Clause 5.8, IEEE 1725 Clause 6.21, IEEE 1625	R4
2.16 Limit output Current	Clause 5.11, IEEE 1725 Clause 5.11, IEEE 1625	R4	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (continued)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (continued)		
	2.17 Fault Handling	Clause 5.13, IEEE 1625	R4
	2.18 Thermal Protection Design	Clause 5.14, IEEE 1725 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries	R4
	2.19 Action, Thermal Protection	Clause 5.15, IEEE 1725 Clause 5.33, 6.13, IEEE 1625	R4
	2.20 Cell Sourcing	Clause 5.16, IEEE 1625	R4
	2.21 Old and Fresh Cells	Clause 5.17, IEEE 1625	R4
	2.22 Different Cell Manufacturer Checks	Clause 5.18, IEEE 1625	R4
	2.23 Pack Overcurrent Protection Requirement	Clause 5.22, IEEE 1725 Clause 5.7, IEEE 1625 Clause 4.8.1, GB/T 18287:2000 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.7 Clause 7.3.6, IEC 62133-2:2017	R4
	2.24 Mechanical Considerations (Steady Force)	Clause 5.23, IEEE 1725	R4
2.25 Cell Orientation	Clause 5.38, IEEE 1625	R4	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (continued)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (continued)		
	2.26 Vent Mechanism	Clause 5.39, IEEE 1625	R4
	2.27 Cell Insulation	Clause 5.40, IEEE 1625	R4
	2.28 Cell Connections	Clause 5.41, IEEE 1625	R4
	2.29 Marking of Battery Pack	Clause 5.50, IEEE 1625 Clause 5.2, 5.3, 5.4, 5.5, IEEE 1725	R4
	2.30 Pack Overvoltage Protection, Verification and Testing	Clause 5.47, IEEE 1725	R4
	2.31 Pack Drop Test 1.5 m drop height Surface = concrete	Clause 5.48, IEEE 1725	R4
	2.32 Input Surge	Clause 6.2, IEEE 1625 Clause 6.2, IEEE 1725	R4
	2.33 Overvoltage	Clause 6.3, IEEE 1725 Clause 6.3, IEEE 1625	R4
	2.34 Overcurrent	Clause 6.4, IEEE 1725 Clause 6.4, 6.5, IEEE 1625	R4
	2.35 Fault Isolation and Tolerance	Clause 6.7, IEEE 1725 Clause 6.7, IEEE 1625	R4
	2.36 Pack Identification	Clause 6.10, IEEE 1725 Clause 6.10, IEEE 1625	R4
	2.37 Charge Algorithm Verification	Clause 6.11, IEEE 1725 Clause 6.11, IEEE 1625 Clauses 5.23, 5.25, 5.26, 5.32, IEEE 1625	R4
2.38 Timer Fault	Clause 6.12, IEEE 1725	R4	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (continued)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (cont inued)		
	2.39 Communication Fault	Clause 6.13, IEEE 1725 Clause 6.12, IEEE 1625	R4
	2.40 Initiation of Charging Above Specified Voltage Threshold	Clause 6.15, IEEE 1725 Clause 6.14, 6.17, IEEE 1625	R4
	2.41 Initiation of Charging Below Specified Voltage Threshold	Clause 6.16, IEEE 1725 Clauses 6.15, 6.14, IEEE 1625	R4
	2.42 Overdischarge Protection, Forced Discharge	Clause 6.17, IEEE 1725 Clauses 5.30, 6,14, 6.16, IEEE 1625 Clause 4.8.2, GB/T 18287:2000 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.8 Clause 7.3.7, IEC 62133-2:2017	R4
2.43 Thermal Shock -40 °C / +75 °C -20 °C / +75 °C -40 °C / +72 °C	UL 1642, Sep 19, 2005 4 th Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.2	R4	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (continued)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (continued)		
	2.44 Shock 150 g, 6 ms, ½ Sine	UL 2054, Oct 29, 2004:16 UL 1642, Sep 19, 2005 4 th UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.4 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries Clause 7.3.8.2, IEC 62133-2:2017 Clause 6.31, IEEE 1625	R4
	2.45 Vibration	3 ms, 735 m/s ²	R4
	2.46 Crushing Battery Pack Battery Cell	Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.3 Clause 7.3.8.1, IEC 62133-2:2017	R4
		UL 2054, Oct 29, 2004:14 UL 1642, Sep 19, 2005 4 th Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries UN Recommendations on the transport of Dangerous Goods manual of tests and criteria, 38.3 Lithium metal and lithium ion batteries, Test T.6 Clause 7.3.5, IEC 62133-2:2017	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (continued)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (continued)		
	2.47 Impact Drop ht: (610 ± 25) mm Drop height: 1000 mm Drop height: 1000 mm Drop height: 1000 mm Drop height: 450 mm	UL 1642, Sep 19, 2005 4 th Clause 4.9.1, GB/T 18287:2000 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries Clause 7.3.3, IEC 62133-2:2017 Clause 5.75, IEEE 1625 Clause 6.32, IEEE 1625 Clause 6.4, tco-certified generation 8 for notebooks, tablets, and smartphones Clause 5, IEC 60068-2-31	R4
	2.48 Free fall of appliance	Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries	R4
	2.49 Projectile	UL 1642, Sep 19, 2005 4 th UL 2054, Oct 29 2004	R4
	2.50 Discharge Performance at 20 °C	Clause 4.2, GB/T 18287:2000 Clause 7.3.1, IEC 61960-3:2017 Clause 7.3.3, IEC 61960-3:2017	R4
	2.51 Characteristic at high ambient temperature	Clause 4.3, GB/T 18287:2000 Electrical Appliance and Material Safety Law, Article 8, Paragraph 1 Revision No.36, 2008, Attached Table 9 Lithium ion secondary batteries	R4
	2.52 Discharge Performance at Low Temperature	Clause 4.4, GB/T 18287:2000 Clause 7.3.2, IEC 61960-3:2017	R4
	2.53 Charge (Capacity) retention capability	Clause 4.5, GB/T 18287:2000 Clause 7.4, IEC 61960-3:2017	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (cont'd)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (cont'd)		
	2.54 Charge (capacity) recovery after long term storage	Clause 7.5, IEC 61960-3:2017	R4
	2.54 Charge (capacity) recovery after long term storage	Clause 7.5, IEC 61960-3:2017	R4
	2.55 Internal Short Avoidance	Clause 4.36, IEEE 1725 Clause 4.36, IEEE 1625	R4
	2.56 Positioning of Insulating Material	Clause 4.41, IEEE 1725 Clause 4.40, IEEE 1625	R4
	2.57 Overcurrent Protection Device	Clause 4.18, IEEE 1725 Clause 4.16, IEEE 1625	R4
	2.58 External Short Circuit Test of Temperature Cycled Cells	Clause 4.54, IEEE 1725	R4
	2.59 Tab Positioning	Clause 4.37, IEEE 1625	
	2.60 Cell Thermal Test on Cycled Cells	Clause 4.54, IEEE 1625	R4
	2.61 Pack Components -Test	Clause 5.4, IEEE 1625	R4
	2.62 Alternate Standard	Clause 5.35, IEEE 1625	R4
2.63 Temperature Specification	Clause 6.22, IEEE 1625	R4	
2.64 Endurance in cycles	Clause 4.6, GB/T 18287:2000 Clause 7.6, IEC 61960-3:2017 Clause 6.5, tco-certified generation 8 for notebooks, tablets Clause 6.6 tco certified generation 8 for smartphones	R4	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Mobile Phone Batteries Laptop, Notebook, Portable Computer Batteries (cont'd)	2 Environmental Tests (non explosive items) and associated Electrical and Teardown Tests (cont'd)		
	2.65 Environmental tests	Clause 4.7, GB/T 18287:2000, excluding crash/impact tests	R4
	2.66 Storage	Clause 4.10, GB/T 18287:2000	R4
	2.67 Continuous charging at constant voltage (cells)	Clause 7.2.1, IEC 62133-2:2017	R4
	2.68 Internal resistance	Clause 7.7, IEC 61960-3:2017	R4
	2.69 Product durability Low temperature High temperature	Clause 6.4, tco-certified generation 8 for notebooks, tablets, and smartphones Clause 6, IEC 60068-2-1 Clause 6, IEC 60068-2-2	R4
Smartphone Batteries	3 Measurement of Battery Lifetime for Smartphones and Smartwatches 3.1 Total Available Energy (TAE) 3.2.1 Gaming 3.2.2 Compose, Send, Receive, Read SMS Message. 3.2.3 Compose, Send, Receive, Read Email Message. 3.2.4 Home Screen Display On. 3.2.5 Audio Streaming/Music Playback. 3.2.6 Video Streaming. 3.2.7 Voice Call. 3.2.8 Web browsing. 3.2.9 Standby.	CTIA Battery Life Test Plan, version 1.5, October 2020	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WLAN equipment	4 Wi-Fi system Interoperability	Wi-Fi CERTIFIED Wi-Fi Direct Test Plan v1.9 Wi-Fi CERTIFIED Protected Management Frames Test Plan 1.5	R4
Digital Terrestrial and Cable Television Receivers and Recorders	5. Digital Television Receiver Testing 5.1 RF Performance	Malaysia: MCMC MTSFB TC T011:2020 MCMC MTSFB TC T004:2013 Ghana: Minimum requirements for Receivers of Free to Air Digital terrestrial Television (DTT) in Ghana using Ghana RF Test Suite NorDig Unified Test plan, v. 2.6.0 NorDig Unified Test Plan for Integrated Receiver Decoders Part II Section 2.3. RF Performance Section 2.2 Cable Thailand: Technical standards for digital terrestrial television receivers NBTC BS 4002-2560 (2017) Indonesia: Regulation Of The Minister Of Communication And Informatics of The Republic Of Indonesia Number 4 : 2019 Samoa: Receiver Specification For Digital Terrestrial Television Samoa February 2016	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Digital Terrestrial and Cable Television Receivers and Recorders	5. Digital Television Receiver Testing (continued) 5.2 SI/PSI	Malaysia: MCMC MTSFB TC T011:2020 SKMM MTSFB TC T004:2013	R4
		Ghana: Minimum requirements for Receivers of Free to Air Digital terrestrial Television (DTT) in Ghana using Ghana SI/PSI Test Suite	R4
		NorDig Unified Test plan, v.2.6.0 NorDig Unified Test Plan for Integrated Receiver Decoders Part II SI/PSI Testing Sections: - 2.5(MPEG2 Demultiplexer) - 2.6(Video) - 2.7(Audio) - 2.8(Teletext and subtitling) - 2.9(Interface and Signal Levels) - 2.10(Interfaces for Conditional Access) - 2.12(Performance) - 2.13(Service Information) - 2.14(Navigator) - 2.15(PVR Functionality)	R4
		Thailand: Technical standards for digital terrestrial television receivers NBTC BS 4002-2560 (2017)	R4
		Indonesia: Regulation Of The Minister Of Communication And Information In The Republic Of Indonesia Number 4:2019	
		Samoa: Receiver Specification For Digital Terrestrial Television Samoa February 2016	



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Digital Terrestrial and Cable Television Receivers and Recorders (cont'd)	5. Digital Television Receiver Testing (continued) 5.3 Over the Air Download (OAD)	Malaysia: MCMC MTSFB TC T011:2020 SKMM MTSFB TC T004:2013 NorDig Unified Test plan, v. 2.6.0 NorDig Unified Test Specification for Integrated Receivers/Decoders Part II Section 2.11.Overair Download Testing. Thailand: Technical standards for digital terrestrial television receivers NBTC BS 4002-2560 (2017) Indonesia: Regulation Of The Minister Of Communication And Informatics of The Republic Of Indonesia Number 4:2019	R4
	5.4 Early Warning systems (EWS)	Indonesia: Regulation of the Minister Of Communication and Informatics of The Republic of Indonesia Number 3:2014	R4
	5. System Software update (SSU)	Samoa: Receiver Specification For Digital Terrestrial Television Samoa February 2016	R4



4290
Accredited to
ISO/IEC 17025:2017

Schedule of Accreditation
issued by
United Kingdom Accreditation Service
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Global CS Center of Samsung Electronics Co. Ltd
Issue No: 034 Issue date: 26 September 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Digital Terrestrial and Cable Television Receivers and Recorders (continued)	5. Digital Television Receiver Testing (continued) 5.4 Hybrid Broadcast (HbbTV)	Malaysia: MCMC MTSFB TC T011:2020 SKMM MTSFB TC T004:2013 SKMM MTSFB TC G002:2020	R4
Digital Terrestrial TV Broadcast Receivers	5.5 Wanted signal power I/C Ratio Blocking Level Overload Measurement	EN 303 340 V1.1.2 Clauses, 4.2.3, 4.2.4, 4.2.5, 4.2.6. EN 303 340 V1.2.1 Clauses, 4.2.3, 4.2.4, 4.2.5, 4.2.6.	R4
Satellite broadcast reception equipment	5.6 Adjacent signal selectivity Dynamic range	ETSI EN 303 372-2 v1.1.1	R4
Short range devices Wideband transmission Systems. RLAN Equipment	6. Radio testing 6.1 Radiated Measurements 6.1.1 Spurious emissions 30 MHz to 40GHz	EN 300 328 V1.9.1 EN 300 328 V2.1.1 EN 300 328 V2.2.2 EN 300 440 V2.1.1 EN 301 893 V1.8.1 EN 301 893 V2.1.1	R3
END			