

TEST REPORT

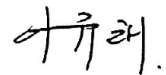
FCC SAR Part 0 Test for SM-A566E/DS
Class II Permissive Change

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-SR-2509-FC001

DATE OF ISSUE
September 8, 2025

Tested by
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TEST REPORT

PART 0 SAR Test
for Class II
Permissive Change

REPORT NO.

HCT-SR-2509-FC001

DATE OF ISSUE

Sep. 08, 2025

FCC ID

A3LSMA566E

Applicant

SAMSUNG Electronics Co., Ltd

129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677, Korea

Product Name

Mobile Phone

Model Name

SM-A566E/DS

Additional Model Name

SM-A566E

Application Type

Class II Permissive Change

Date of Test

Sep.02,2025

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing Lab

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si,
Gyeonggi-do, 17383 KOREA)

FCC Rule Part(s)

CFR § 2.1093

Test Results

Pass (SAR limit : 1.6 W/kg)

The result shown in this test report refer only to the sample(s) tested
unless otherwise stated.

This test results were applied only to the test methods required by the
standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Sep. 08, 2025	Initial Release

Notice

Content

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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1. Test Location

1.1 Test Laboratory

Company Name	HCT Co., Ltd.
Address	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Telephone	031-645-6300
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1.2 Test Facilities

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Korea	National Radio Research Agency (Designation No. KR0032)
	KOLAS (Testing No. KT197)

1.3 General Information of the EUT

Model Name	SM-A566E/DS
Additional Model Name	SM-A566E
Equipment Type	Mobile Phone
FCC ID	A3LSMA566E
Application Type	Class II Permissive Change
Applicant	SAMSUNG Electronics Co., Ltd.

2. DEVICE UNDER TEST DESCRIPTION

2.1 General Information of the EUT

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
GSM850	Voice / Data	824.2 MHz ~ 848.8 MHz
GSM1900	Voice / Data	1 850.2 MHz ~ 1 909.8 MHz
UMTS Band 2	Voice / Data	1 852.4 MHz ~ 1 907.6 MHz
UMTS Band 4	Voice / Data	1 712.4 MHz ~ 1 752.6 MHz
UMTS Band 5	Voice / Data	826.4 MHz ~ 846.6 MHz
LTE FDD Band 2 (PCS)	Voice / Data	1 850.7 MHz ~ 1 909.3 MHz
LTE FDD Band 4 (AWS)	Voice / Data	1 710.7 MHz ~ 1 754.3 MHz
LTE FDD Band 5 (Cell)	Voice / Data	824.7 MHz ~ 848.3 MHz
LTE FDD Band 12	Voice / Data	699.7 MHz ~ 715.3 MHz
LTE FDD Band 13	Voice / Data	779.5 MHz ~ 784.5 MHz
LTE FDD Band 17	Voice / Data	706.5 MHz ~ 713.5 MHz
LTE FDD Band 25	Voice / Data	1 850.7 MHz ~ 1 914.3 MHz
LTE FDD Band 26	Voice / Data	814.7 MHz ~ 848.3 MHz
LTE TDD Band 41	Voice / Data	2 498.5 MHz ~ 2 687.5 MHz
LTE FDD Band 66 (AWS)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
NR FDD Band n5	Voice / Data	826.5 MHz ~ 846.5 MHz
NR TDD Band n41	Voice / Data	2 501.01 MHz ~ 2 685 MHz
NR FDD Band n66	Voice / Data	1 712.5 MHz ~ 1 777.5 MHz
NR TDD Band n77	Voice / Data	3 705 MHz ~ 3 975 MHz
NR TDD Band n77 DoD	Voice / Data	3 445.01 MHz ~ 3 544.98 MHz
U-NII-1	Voice / Data	5 180 MHz ~ 5 240 MHz
U-NII-2A	Voice / Data	5 260 MHz ~ 5 320 MHz
U-NII-2C	Voice / Data	5 500 MHz ~ 5 720 MHz
U-NII-3	Voice / Data	5 745 MHz ~ 5 825 MHz
U-NII-4	Voice / Data	5 845 MHz ~ 5 885 MHz
2.4 GHz WLAN	Voice / Data	2 412 MHz ~ 2 462 MHz
Bluetooth / LE 5.3	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz

2.2 Time-Averaging for SAR

This WWAN/WLAN/BT Mode of DUT is equipped with an S.LSI chipset to which the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm is applied.

This DUT is enabled with the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm for WWAN/WLAN/BT Mode and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with the FCC requirement

FCC RF exposure limit is based on time averaged RF exposure. The SAR regulatory specification is defined over certain measurement duration allowing for time-averaging. The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm has been designed to meet the compliance limits over the required duration, while still allowing dynamic control of transmit power to satisfy the performance of the system.

This feature performs time averaging SAR algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time.

The WLAN mode are not controlled by The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time. DUT contains BDF File configured for the WLAN TAS algorithm. Only the NFC mode of the device did not apply the time averaged SAR algorithm.

The Samsung S.LSI TAS algorithm allow the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit NV settings and maximum tune up output power Pmax configured for this DUT for various transmit conditions(Radio SAR indicator RSI for Head/Non-Head SAR of WWAN/WLAN/BT Mode).

The purpose of this report is to demonstrate that the DUT meets FCC SAR limits when transmitting in static transmission configurations at Plimit specified by manufacturer.

SAR Characterization confirms that Plimit in the 4G/5G/WLAN/WLAN/BT communication mode declared by the manufacturer satisfies SAR_Design_target.

The compliance test under the static transmission scenario and simultaneous transmission analysis are reported in SAR report for WWAN/WLAN/BT. The validation of The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm and compliance under the time-varying transmission scenario for WWAN technologies are reported in A3LSMA566E_SAR Part 2 Report_Main report.

2.3 Nomenclature for Part 0 Report

Technology	Term	Description
2G/3G/4G/5G Sub 6 NR/WLAN	Plimit	Power level that corresponds to the exposure design target (SAR_design_target) after accounting for all device design related uncertainties
	Pmax	Maximum tune up output power
	SAR_design_target	Target SAR level < FCC SAR limit after accounting for all device design related uncertainties.
	SAR Char	Table containing Plimit for all technologies and bands

3. SAR MEASUREMENTS

3.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body

$$SAR = \frac{d}{dt} \left(\frac{dU}{dm} \right)$$

SAR Mathematical Equation

SAR is expressed in units of Watts per Kilogram (W/kg).

$$SAR = \sigma E^2 / \rho$$

Where:

σ = conductivity of the tissue-simulant material (S/m)

ρ = mass density of the tissue-simulant material (kg/m³)

E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

3.2 SAR Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013:

1. The SAR distribution at the exposed side of the head or body was measured at a distance no more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 (see table 3-1) & IEEE 1528-2013.
2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.
3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 table 4-1 and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (reference from the DASY manual.)
 - a. The data at the surface were extrapolated, since the center of the dipoles is no more than 2.7 mm away from the tip of the probe (it is different from the probe type) and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.
 - b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.
 - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan. If the value changed by more than 5 %, the SAR evaluation and drift measurements were repeated.

Frequency	Maximum Area Scan Resolution(mm) (Δxarea, Δyarea)	Maximum Zoom Scan Resolution (mm) (Δxzoom, Δyzoom)	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
				Δzzoom(n)	Δzzoom(1)*	
≤2 GHz	≤15	≤8	≤5	≤4	≤1.5*Δzzoom(n-1)	≥30
2-3 GHz	≤12	≤5	≤5	≤4	≤1.5*Δzzoom(n-1)	≥30
3-4 GHz	≤12	≤5	≤4	≤3	≤1.5*Δzzoom(n-1)	≥28
4-5 GHz	≤10	≤4	≤3	≤2.5	≤1.5*Δzzoom(n-1)	≥25
5-6 GHz	≤10	≤4	≤2	≤2	≤1.5*Δzzoom(n-1)	≥22

Table 3-1

Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

4. SAR CHARACTERIZATION

4.1 Exposure Index and SAR Determination

This device uses different Radio SAR index (RSI) to configure different time averaged power levels based on certain exposure scenarios. Depending on the detection scheme implemented in the smartphone, the worst-case SAR was determined by measurements for the relevant exposure conditions for that RSI. Detailed descriptions of the detection mechanisms are included in the operational description.

When 1g SAR and 10g SAR exposure comparison is needed, the worst-case was determined from SAR normalized to 1g or 10g SAR limit.

The Radio SAR index (RSI) conditions used in Table 4-1 represent different exposure scenarios.

Table 4-1 RSI and Corresponding Exposure Scenarios

Scenario		Description	SAR Test Cases
Head	RSI = 1	☒ Device positioned next to head ☒ When RCV is activated for voice call	Head SAR per KDB Publication 648474 D04
Non – Head	RSI = 0 (Body)	☒ Device is held with hand ☒ Device transmits in hotspot mode near body ☒ Device being used with a body-worn accessory ☒ Device being used with a Earjack	Phablet SAR per KDB Publication 648474 D04 Hotspot SAR per KDB Publication 941225 D06 Body-worn SAR per KDB Publication 648474 D04

The output power for SAR test in WWAN mode of this device is characterized as Head [RSI=1] and Non-Head [RSI=0] is body SAR configuration.

4.2 SAR Design Target

SAR_design_target is determined by ensuring that it is less than FCC SAR limit after accounting for total device designed related uncertainties specified by the manufacturer (see Table 4-2).

<i>SAR_design_target</i>			
$SAR_design_target < SAR_regulatory_limit \times 10^{Total\ Uncertainty/10}$			
1g SAR (W/kg)		10g SAR (W/kg)	
<i>Total Uncertainty</i>	1.0 dB	<i>Total Uncertainty</i>	1.0 dB
<i>SAR_regulatory_limit</i>	1.6 W/kg	<i>SAR_regulatory_limit</i>	4.0 W/kg
<i>SAR_design_target</i>	1.0 W/kg	<i>SAR_design_target</i>	2.5 W/kg

Table 4-2 *SAR_design_target* Calculations for WWAN Bands

4.3 SAR Characterization

SAR test results corresponding to Pmax for each antenna/technology/band/RSI can be found in Appendix A. Plimit is calculated by linearly scaling with the measured SAR at the Pmax to correspond to the SAR_design_target. Plimit determination for each exposure scenario corresponding to SAR_design_target are shown in Table 4-3.

Radio State Index (RSI)	Plimit Determination Scenarios
0	The worst-case SAR exposure is determined as maximum SAR normalized to the limit among: 1. Extremity SAR measured at 0 mm 2. Body-Worn SAR at 5mm 3. Plimit is calculated based on 1g Hotspot SAR at 5mm 4. Earjack SAR at 0,5mm
1	Plimit is calculated based on 1g Head SAR

Table 4-3 *PLimit* Determination for WLAN/BT

<i>SAR_design_target</i>			
$SAR_design_target < SAR_regulatory_limit \times 10^{Total\ Uncertainty/10}$			
WLAN 1g SAR (W/kg)		10g SAR (W/kg)	
<i>Total Uncertainty</i>	1.0 dB	<i>Total Uncertainty</i>	1.0 dB
<i>SAR_regulatory_limit</i>	1.6 W/kg	<i>SAR_regulatory_limit</i>	4.0 W/kg
<i>SAR_design_target</i>	0.7 W/kg	<i>SAR_design_target</i>	2.5 W/kg

Table 4-3-1 *WLAN SAR_design_target* Calculations WLAN/BT

Plim values in green indicate Plimit < Pmax			Plimit values in grey indicate Plimit > Pmax		
Plimit corresponding to 1 W/kg (1g) 2.5W/kg(10g) SAR_Design_target					Pmax
SAR Exposure Position			Head (RCV ON)	Non Head (Bodyworn / Hotspot)	Maximum Tune-up Output Power (Frame Averaged Power)
Averaging volume			1g	1g	
seperation Distance			0 mm	5 mm	
Mode	Band	Antenna	RSI = 1	RSI =0	
GSM/GPRS/EDGE	850	A	20.8	20.8	25.4
					48.2%

Table 4-4 SAR Characterization

Note:

1. Compared with the Plimit(Tune up Powers) declared in each RSI/DSI by manufacturer and the plimit(calculation) calculated by the SAR measurement of each RSI/DSI, the lower power were applied to the plimit at each RSI/DSI configurations.
2. When $P_{max} < P_{limit}$, the DUT will operate at a power level up to P_{max} .
3. Maximum Tune up Power, Pmax is configured in Nv settings in EUT to limit maximum transmitting power. This power is converted into peak power in NV setting for TDD schemes. (GPRS, LTE TDD and WLAN/BT

5. Equipment List

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX60	F/20/0018446/C/001	N/A	N/A	N/A
Staubli	TX60 Lspeag	F/20/0018446/A/001	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	1159	N/A	N/A	N/A
TESTO	175-H1/Thermometer	44606611906	03/20/2025	Annual	03/20/2026
SPEAG	DAE4	1254	05/21/2025	Annual	05/21/2026
SPEAG	E-Field Probe EX3DV4	7679	08/19/2025	Annual	08/19/2026
SPEAG	Dipole D835V2	4d165	04/14/2025	Annual	04/14/2026
Agilent	Power Meter E4419B	MY41291386	09/11/2024	Annual	09/11/2025
Agilent	Power Meter N1911A	MY45101406	05/19/2025	Annual	05/19/2026
sAgilent	Power Sensor 8481A	SG1091286	09/12/2024	Annual	09/12/2025
H.P	Power Sensor 8481A	MY41090675	09/12/2024	Annual	09/12/2025
Agilent	Wideband Power Sensor N1921A	MY55220026	08/07/2025	Annual	08/07/2026
Agilent	11636B/Power Divider	58698	01/13/2025	Annual	01/13/2026
SPEAG	DAKS 3.5	1038	01/20/2025	Annual	01/20/2026
SPEAG	MXA Signal Analyzer	MY49100108	01/07/2025	Annual	01/07/2026
H.P	Network Analyzer /8753ES	JP39240221	12/23/2024	Annual	12/23/2025
Protek	NETWORK ANALYZER	X11-15305	02/10/2025	Annual	02/10/2026
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	09/11/2024	Annual	09/11/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	07/29/2025	Annual	07/29/2026
R&S	Wireless Communication Test Set CMW500	115733	03/20/2025	Annual	03/20/2026
R&S	Wireless Communication Test Set CMW500	139333	12/09/2024	Annual	12/09/2025
Agilent	SIGNAL GENERATOR N5182A	MY47070230	03/18/2025	Annual	03/18/2026
EMPOWER	RF Power Amplifier	1084	05/20/2025	Annual	05/20/2026
MICRO LAB	LP Filter / LA-15N	10453	09/11/2024	Annual	09/11/2025
Agilent	Attenuator (3dB) 8693B	MY39260298	08/18/2025	Annual	08/18/2026
HP	Attenuator (20dB) 8493C	09271	08/18/2025	Annual	08/18/2026
HP	Dual Directional Coupler	16072	09/11/2024	Annual	09/11/2025
YAMADA	STRAIGHT RULE	-	06/25/2025	Annual	06/25/2026

* The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

6. Measurement Uncertainty

The measured SAR was <1.5 W/Kg for 1g SAR and <3.75 W/Kg For 10g SAR for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

Appendix A: SAR Test Results For PLimit CALCULATIONS

Table A-1 RSI = 1 *PLimit* Calculations – 2G Head SAR

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Ant.	Frame Averaged Conducted Power	Test Position	Duty Cycle	Meas. SAR(1g)	PLimit	Minimum PLimit
MHz	Ch.				(dBm)			(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Left Cheek	1:2.07	0.040	35.1	31.9
836.6	190	GSM 850		A	21.12	Left Tilt	1:2.07	0.033	35.9	
836.6	190	GSM 850		A	21.12	Right Cheek	1:2.07	0.083	31.9	
836.6	190	GSM 850		A	21.12	Right Tilt	1:2.07	0.013	40.0	

Table A-2 RSI = 0 *PLimit* Calculations – 2G Bodyworn SAR

For some bands/modes, a lower *PLimit* was selected as a more conservative evaluation.

MEASUREMENT RESULTS											
Frequency		Mode/ Band		Ant. No.	Frame Averaged Conducted Power	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g)	PLimit	Minimum PLimit
MHz	Ch.				(dBm)				(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Rear	5	1:2.07	0.456	24.5	24.5
836.6	190	GSM 850		A	21.12	Front	5	1:2.07	0.365	25.5	

Table A-3 RSI = 0 *PLimit* Calculations – 2G Hotspot SAR

For some bands/modes, a lower *PLimit* was selected as a more conservative evaluation.

MEASUREMENT RESULTS											
Frequency		Mode/ Band		Ant. No.	Frame Averaged Conducted Power	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g)	PLimit	Minimum PLimit
MHz	Ch.				(dBm)				(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Rear	5	1:2.07	0.456	24.5	24.5
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Front	5	1:2.07	0.365	25.5	
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Left	5	1:2.07	0.043	34.8	
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Right	5	1:2.07	0.234	27.4	
836.6	190	GSM 850	GPRS 4Tx	A	21.12	Bottom	5	1:2.07	0.291	26.5	