CERTIFICATION TEST REPORT

Report Number : 4790577225-FR6V4

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	EP-P9500
FCC ID	:	A3LEPP9500
EUT Description	:	SmartThings Station with BLE, DTS/UNII a/b/g/n/ac, Zigbee and WPT
Test Standard(s)	:	FCC 47 CFR PART 1 SUBPART I FCC 47 CFR PART 2 SUBPART J

Date Of Issue:
2022-11-23

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IAS ACCREDITED Testing Laboratory

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-11-14	Initial issue	Hyunsik(Dexter) Yun
V2	2022-11-21	Updated to address TCB's Question	Hyunsik(Dexter) Yun
V3	2022-11-22	Updated to address TCB's Question	Hyunsik(Dexter) Yun
V4	2022-11-23	Updated to address TCB's Question	Hyunsik(Dexter) Yun

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: SmartThings Station with BLE, DTS/UNII a/b/g/n/ac, Zigbee and WPT

MODEL: EP-P9500

SERIAL NUMBER: R37T90007XRX3S (RADIATED);

DATE TESTED: 2022-11-14 ~ 2022-11-23;

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 1 SUBPART I	Complies
FCC PART 2 SUBPART J	

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Korea, Ltd. By:

Seokhwan Hong
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:

Hyunsik(Dexter) Yun
Suwon Lab Engineer
UL Korea, Ltd.

2. TEST METHODOLOGY

All calculations were made in accordance with FCC OET Bulletin 65 Edition 97-01.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
☒ Shield Room 1

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf.

4. EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF EUT

The EUT has WPT (Wireless Power Transfer) feature which has inductive charging coil to charge phone or watch. The charging frequency is between 119 kHz to 122.0 kHz and 126.2 kHz to 129.2kHz. The maximum power consumption is 15.0 W in charging status.

4.2. WORST-CASE CONFIGURATION

Test Mode	Description
DUT to Phone test mode 1	Charging from Phone to DUT(15 Watt)
DUT to Intelligent Wireless Charging Full-function Module test mode 2	Charging from Intelligent Wireless Charging Full-function Module to DUT (7.5 Watt)
DUT to Intelligent Wireless Charging Full-function Module test mode 3	Charging from Intelligent Wireless Charging Full-function Module to DUT (4.5 Watt)
DUT to Bluetooth Headset test mode 4	Charging from Bluetooth Headset to DUT(2 Watt)
DUT to Phone test mode 5	Charging from specific Phone to DUT(4.5 Watt)

Note:
Test was performed in mode 1, which is the worst case(Spot-check test of the remaining modes is performed at the worst Edge"1" of mode1).

4.3. KDB 680106 D01 v03r01SECTION 5.b) EQUIPMENT APPROVAL CONSIDERATIONS

Requirement	Device
(1) Power transfer frequency is less than 1 MHz.	Yes. See the below operating frequency. 119.0 kHz to 122.0 kHz 126.2 kHz to 129.2 kHz.
(2) Output power from each primary coil is less than or equal to 15 watts.	Yes. Maximum power is 15.0 Watts.
(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.	Yes.
(4) Client device is placed directly in contact with the transmitter.	Yes.
(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes.
(6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	Yes. The aggregate field at 15 cm from the device(Test mode 1, Edge 1) are 24.66 % of the FCC H field limit.

4.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT & PERIPHERALS

SUPPROT EQUIPMENT & PERIPHERALS LIST				
Description	Manufacturer	Model	Serial Numver	FCC ID
Charger	SAMSUNG	EP-TA800	-	N/A
Data Cable	SAMSUNG	EP-DN980	-	N/A
Mobile Phone	SAMSUNG	SM-S906U	R3CR90DJT6M	A3LS906U
Intelligent Wireless Charging Full-function Test Module	Shenzhen Xiangyou Technology Co.LTD	wireless charger PCB PCBA	-	-
Bluetooth Headset	SAMSUNG	SM-R190	RF2NC0CM6ZH	A3LSMR190L
Mobile Phone	SAMSUNG	SM-N970U	R38M60CBLFF	A3LSMN970V

TEST SETUP

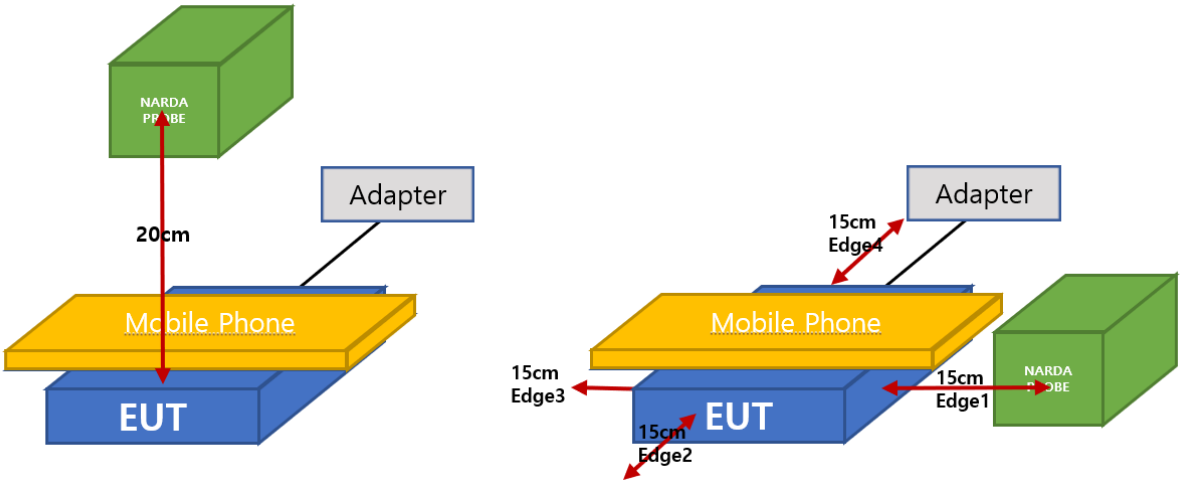
The following three modes are tested in test configurations;

Mode
Operating (SUPPORT Equipment, <10% Power Charging)
Operating (SUPPORT Equipment, 50~55% Power Charging)
Operating (SUPPORT Equipment, 90~95% Power Charging)

MEASUREMENT TEST SETUP

The measurement was taken using a probe placed 15 cm surrounding the device and 20 cm above the top surface of the EUT. Measurements were taken the top (charger below/above client) and all sides of the EUT per KDB680106 D01 v03 R01 and RF Exposure Procedures (Wireless Power Transfer) in TCB Workshop October, 2018.

[Test mode 1 & 2] Configuration



5. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was used for the tests documented in this report;

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
E-H Field Analyzer	Narda	EHP-200AC	170WX91008	2023-08-23

6. Maximum PERMISSIBLE RF EXPOSURE

6.1. FCC LIMITS AND SUMMARY

6.1.1. FCC LIMITS

§ 1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

6.2. TEST RESULTS

6.2.1. FCC RF EXPOSURE

H-FIELD MEASUREMENTS

Note: Peak measurement were performed. RMS values were calculated from the peak measurement.

Please refer to the formula for calculating the RMS values: [Field Strength x √Duty Cycle].
Additional test was performed in each Test mode by moving the probe surrounding the device to find the maximum exposure.

[TEST Mode 1] Results of DUT to phone test Configuration(include Spot-check)

FCC RF Exposure Result

Test Mode	Test Environment	Test distance	Test Position	H-Field Limit (A/m)	H-Field meas. data (A/m)
Mode 1	Operating Real Product (Power <10% charging)	15 cm probe to edges of EUT and 20 cm probe to top surface of the EUT	Top	1.63	0.0562
			Edge 1		**0.2929**
			Edge 2		0.0314
			Edge 3		0.0647
			Edge 4		0.0575
			Max		**0.2929**
	Operating Real Product (Power 50~55% charging)		Top		0.0423
			Edge 1		**0.3606**
			Edge 2		0.0879
			Edge 3		0.1361
			Edge 4		0.0565
			Max		**0.3606**
	Operating Real Product (Power 90~95% charging)		Top		0.0572
			Edge 1		**0.4020**
			Edge 2		0.0679
			Edge 3		0.2285
			Edge 4		0.1332
			Max		**0.4020**
Spot-check Mode 2,3,4,5	Operating Real Product (Power 90~95% charging)		**[Mode 2] Edge 1**		**0.1111**
			[Mode 3] Edge 1		0.0894
			[Mode 4] Edge 1		0.0612
			[Mode 5] Edge 1		0.0714
			Max		**0.1111**
Overall					**0.4020**

6.2.2. FCC SUMMARY OF RESULTS

H-Field Limit		
FCC RF Exposure	Maximum meas data (A/m)	Percentage (%)
1.63	0.402	**24.66**

Conclusion:

H-Field result is less than 50% of the MPE limit.

END OF TEST REPORT