EUT Specification

FCC ID: 2AD37JUPW1107NP

Characteristics	Description
Product Name	MagSafe 15W Wireless Charging Stand
Model number	JUPW1107NP, JUPW1107CNP, JUPW1107RNP
Power Supply	AC120V/60Hz for adapter
Operating Frequency Range	127.7KHz
Modulation Technique	ASK
Antenna Type	Induction coil
Device category	☐Portable (<20cm separation) ☒Mobile (>20cm separation) ☐Others ___
Exposure classification	☐Occupational/Controlled exposure (S = 5mW/cm2) ☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒Single antenna ☐Multiple antennas ☐Tx diversity ☐Rx diversity ☐Tx/Rx diversity
Evaluation applied	☒MPE Evaluation ☐SAR Evaluation

Applicable Standard:

FCC Part 1(1.1310) ,Part 2(2.1091) and KDB 680106 D01 RF Exposure Wireless Charging Apps v03

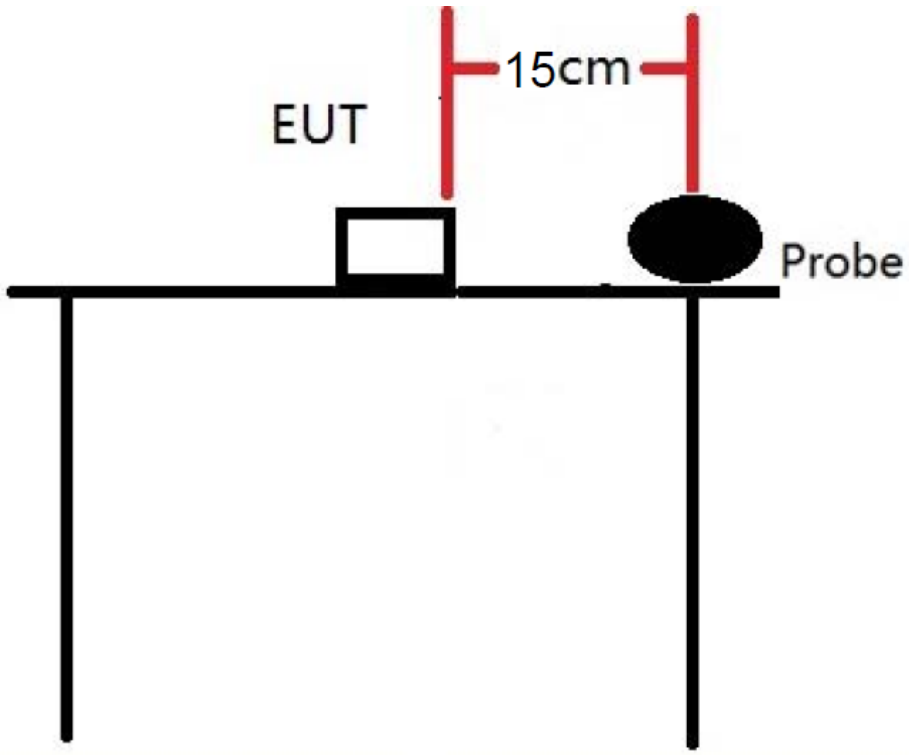
Applicable Requirement:

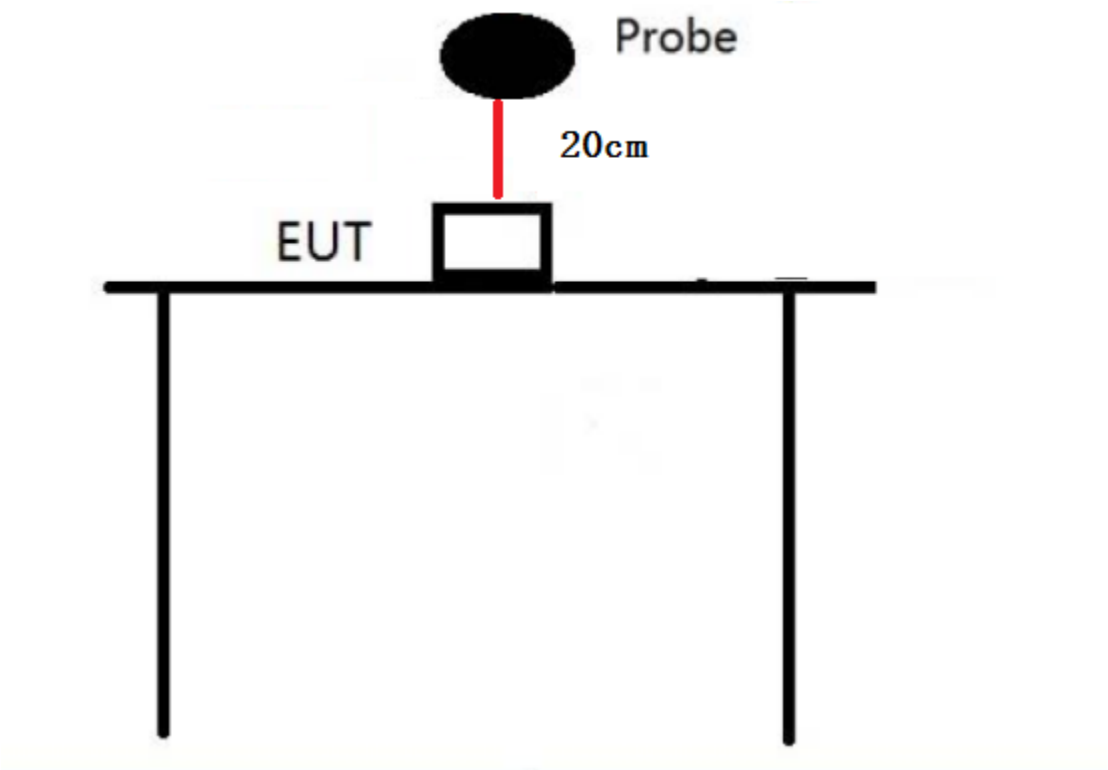
Three different categories of transmitters are defined by the FCC in OET Bulletin 65.
These categories are fixed installation, mobile, and portable and are

defined as follows:
Fixed Installations: fixed location means that the device, including its antenna, is physically secured at a permanent location and is not able to be easily moved to another location. Additionally, distance to humans from the antenna is maintained to at least 2 meters.
Mobile Devices: a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to be generally used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. Transmitters designed to be used by consumers or workers that can be easily re-located, such as a wireless modem operating in a laptop computer, are considered mobile devices if they meet the 20 centimeter separation requirement. The FCC rules for evaluating mobile devices for RF compliance are found in 47 CFR §2.1091.
Portable Devices: a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Portable device requirements are found in Section 2.1093 of the FCC's Rules (47 CFR§2.1093).
The FCC also categorizes the use of the device as based upon the user's awareness and ability to exercise control over his or her exposure. The two categories defined are Occupational/ Controlled Exposure and General Population/Uncontrolled Exposure.
These two categories are defined as follows:
Occupational/controlled exposure 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 a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure. The phrase fully aware in the context of applying these exposure limits means that an exposed person has received written and/or verbal information fully explaining the potential for RF exposure resulting from his or her employment. With the exception oftransient persons, this phrase also means that an exposed person has received appropriate training regarding work practices relating to controlling or mitigating his or her exposure. Such training is not required for transient persons, but they must receive written and/or verbal information and notification (for example, using signs) concerning their exposure potential and appropriate means available to mitigate their exposure. The phrase exercise control means that an exposed person is allowed to and knows how to reduce or avoid exposure by administrative or engineering controls and work practices, such as use of personal protective equipment or time averaging of exposure.
General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are

exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure. Licensees and applicants are responsible for compliance with both the occupational/controlled exposure limits and the general population/uncontrolled exposure limits as they apply to transmitters under their jurisdiction. Licensees and applicants should be aware that the occupational/controlled exposure limits apply especially in situations where workers may have access to areas in very close proximity to antennas and access to the general public may be restricted.
In lieu of evaluation with the general population/uncontrolled exposure limits, amateur licensees authorized under part 97 of this chapter and members of his or her immediate household may be evaluated with respect to the occupational/controlled exposure limits in this section, provided appropriate training and information has been provided to the amateur licensee and members of his/her household. Other nearby persons who are not members of the amateur licensee's household must be evaluated with respect to the general population/uncontrolled exposure limits.

Test Setup Block





Test Procedure

1.Connect the EUT and equipment as above diagram of test configuration.
2.EUT was placed on a table, and the measure probe was placed at a measurement distance of 15cm from the EUT to the center of the probe.
3.Power on the measuring probe, the EUT was set at the maximum field strength emission state.
4.The EUT was put in different directions (Left, Right, Front, Rear, Top and Bottom) toward to the measure probe. The distance from the top of the EUT to the probe is 20CM, and the distance from other directions is 15cm.Measure the value of field strength.
5.Record the worst data of the different directions.

Measuring Device And Test Equipment

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	E&H-Field Probe(9kHz-30MHz)	Narda	EHP-200A	180ZX11012	Mar. 02, 2022	1 Year

Description of Support Device

iPhone	：	Manufacturer: Apple Inc. M/N: A2176 S/N: N/A
Adapter	：	Model number:580245A087 Input: AC 100-240V, 50/60Hz Manufacturer: SAMSUNG
SAMSUNG S9	:	M/N:Samsung Galaxy S9 S/N: N/A
Xiaomi 9	：	Manufacturer: Xiaomi M/N:Xiaomi 9 S/N: N/A

Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm^2)	Average Time
(A) Limits for Occupational/Control Exposures				
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

Note: f denotes for frequency in MHz.

＊ denotes for plane-wave equivalent power density.

Measurement Result

We pretested four modes (max load, mid load, min load, Standby) for EUT. The worst mode (max load) and worst test frequency(frequency：127.7KHz)test data see the following.

Magnetic Field (H-Field) strength at 15cm from the boundaries of EUT, and 20cm from the top.

Test Mode: Wireless Charging 15w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0415	0.0203	1.63	0.815
Measurement Point 2	Back	15	0.0403	0.0205		
Measurement Point 3	Left	15	0.0412	0.0207		
Measurement Point 4	Right	15	0.0406	0.0205		
Measurement Point 5	Bottom	15	0.0367	0.0186		
Measurement Point 6	Top	20	0.0420	0.0211		

Test Mode: Wireless Charging 15w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3426	0.1716	614	307
Measurement Point 2	Back	15	0.3421	0.1715		
Measurement Point 3	Left	15	0.3369	0.1684		
Measurement Point 4	Right	15	0.3261	0.1631		
Measurement Point 5	Bottom	15	0.3165	0.1584		
Measurement Point 6	Top	20	0.3563	0.1784		

Test Mode: Wireless Charging 15w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0362	0.0187	1.63	0.815
Measurement Point 2	Back	15	0.0365	0.0186		
Measurement Point 3	Left	15	0.0367	0.0182		
Measurement Point 4	Right	15	0.0356	0.0173		
Measurement Point 5	Bottom	15	0.0340	0.0171		
Measurement Point 6	Top	20	0.0360	0.0185		

Test Mode: Wireless Charging 15w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3362	0.1684	614	307
Measurement Point 2	Back	15	0.3314	0.1656		
Measurement Point 3	Left	15	0.3321	0.1665		
Measurement Point 4	Right	15	0.3126	0.1564		
Measurement Point 5	Bottom	15	0.3316	0.1658		
Measurement Point 6	Top	20	0.3265	0.1633		

Test Mode: Wireless Charging 15w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0341	0.0171	1.63	0.815
Measurement Point 2	Back	15	0.0326	0.0163		
Measurement Point 3	Left	15	0.0371	0.0185		
Measurement Point 4	Right	15	0.0352	0.0176		
Measurement Point 5	Bottom	15	0.0330	0.0166		
Measurement Point 6	Top	20	0.0336	0.0168		

Test Mode: Wireless Charging 15w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3365	0.1684	614	307
Measurement Point 2	Back	15	0.3374	0.1687		
Measurement Point 3	Left	15	0.3462	0.1733		
Measurement Point 4	Right	15	0.3632	0.1818		
Measurement Point 5	Bottom	15	0.3371	0.1684		
Measurement Point 6	Top	20	0.3426	0.1712		

Test Mode: Wireless Charging 7.5w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0347	0.0173	1.63	0.815
Measurement Point 2	Back	15	0.0352	0.0177		
Measurement Point 3	Left	15	0.0336	0.0165		
Measurement Point 4	Right	15	0.0352	0.0175		
Measurement Point 5	Bottom	15	0.0331	0.0166		
Measurement Point 6	Top	20	0.0350	0.0172		

Test Mode: Wireless Charging 7.5w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3310	0.1656	614	307
Measurement Point 2	Back	15	0.3421	0.1713		
Measurement Point 3	Left	15	0.3216	0.1607		
Measurement Point 4	Right	15	0.3324	0.1662		
Measurement Point 5	Bottom	15	0.3365	0.1683		
Measurement Point 6	Top	20	0.3236	0.1615		

Test Mode: Wireless Charging 7.5w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0323	0.1684	1.63	0.815
Measurement Point 2	Back	15	0.0319	0.1578		
Measurement Point 3	Left	15	0.0326	0.1633		
Measurement Point 4	Right	15	0.0331	0.1688		
Measurement Point 5	Bottom	15	0.0311	0.1662		
Measurement Point 6	Top	20	0.0343	0.1577		

Test Mode: Wireless Charging 7.5w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3325	0.1665	614	307
Measurement Point 2	Back	15	0.3369	0.1683		
Measurement Point 3	Left	15	0.3421	0.1712		
Measurement Point 4	Right	15	0.3396	0.1697		
Measurement Point 5	Bottom	15	0.3274	0.1638		
Measurement Point 6	Top	20	0.3413	0.1706		

Test Mode: Wireless Charging 7.5w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0324	0.0164	1.63	0.815
Measurement Point 2	Back	15	0.0356	0.0175		
Measurement Point 3	Left	15	0.0357	0.0177		
Measurement Point 4	Right	15	0.0342	0.0173		
Measurement Point 5	Bottom	15	0.0332	0.0164		
Measurement Point 6	Top	20	0.0355	0.0176		

Test Mode: Wireless Charging 7.5w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3269	0.1638	614	307
Measurement Point 2	Back	15	0.3231	0.1614		
Measurement Point 3	Left	15	0.3474	0.1737		
Measurement Point 4	Right	15	0.3252	0.1625		
Measurement Point 5	Bottom	15	0.3203	0.1602		
Measurement Point 6	Top	20	0.3409	0.1706		

Test Mode: Wireless Charging 5w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0320	0.0164	1.63	0.815
Measurement Point 2	Back	15	0.0314	0.0157		
Measurement Point 3	Left	15	0.0323	0.0165		
Measurement Point 4	Right	15	0.0326	0.0163		
Measurement Point 5	Bottom	15	0.0307	0.0156		
Measurement Point 6	Top	20	0.0316	0.0150		

Test Mode: Wireless Charging 5w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3369	0.1685	614	307
Measurement Point 2	Back	15	0.3423	0.1712		
Measurement Point 3	Left	15	0.3326	0.1663		
Measurement Point 4	Right	15	0.3218	0.1609		
Measurement Point 5	Bottom	15	0.3163	0.1582		
Measurement Point 6	Top	20	0.3475	0.1738		

Test Mode: Wireless Charging 5w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0326	0.0161	1.63	0.815
Measurement Point 2	Back	15	0.0323	0.0162		
Measurement Point 3	Left	15	0.0328	0.0166		
Measurement Point 4	Right	15	0.0326	0.0164		
Measurement Point 5	Bottom	15	0.0316	0.0157		
Measurement Point 6	Top	20	0.0351	0.0176		

Test Mode: Wireless Charging 5w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3147	0.1574	614	307
Measurement Point 2	Back	15	0.3125	0.1567		
Measurement Point 3	Left	15	0.3258	0.1629		
Measurement Point 4	Right	15	0.3247	0.1625		
Measurement Point 5	Bottom	15	0.3156	0.1578		
Measurement Point 6	Top	20	0.3285	0.1643		

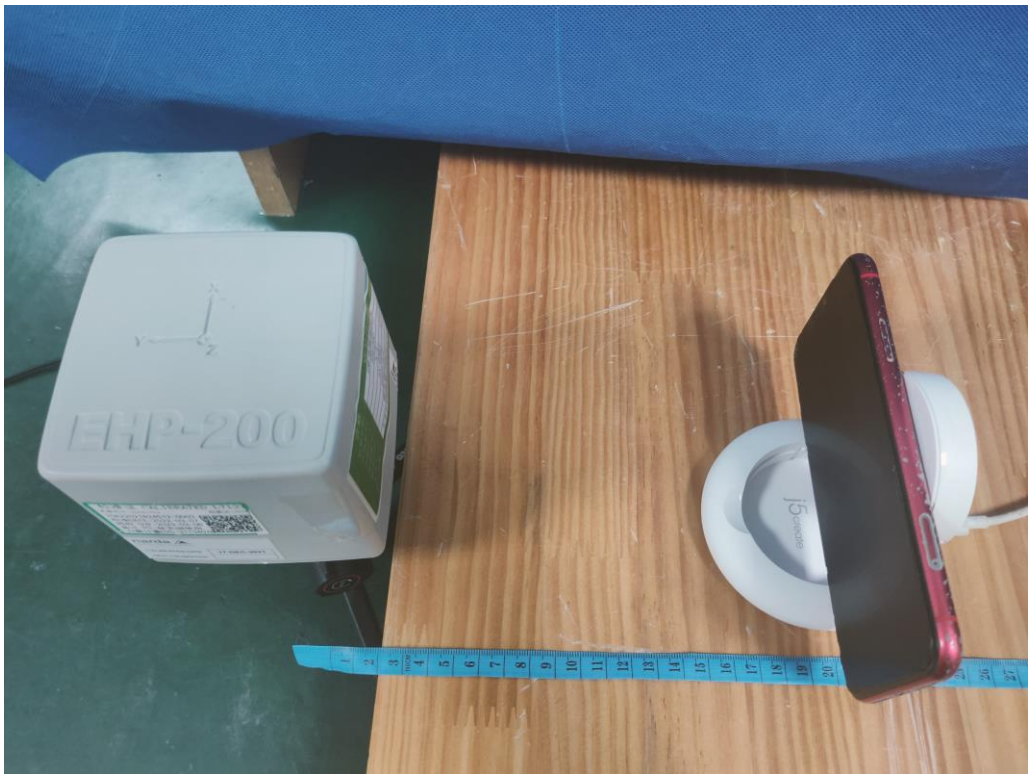
Test Mode: Wireless Charging 5w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.0325	0.0163	1.63	0.815
Measurement Point 2	Back	15	0.0316	0.0158		
Measurement Point 3	Left	15	0.0332	0.0167		
Measurement Point 4	Right	15	0.0325	0.0163		
Measurement Point 5	Bottom	15	0.0332	0.0158		
Measurement Point 6	Top	20	0.0351	0.0175		

Test Mode: Wireless Charging 5w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	0.3123	0.1562	614	307
Measurement Point 2	Back	15	0.2963	0.1483		
Measurement Point 3	Left	15	0.2948	0.1478		
Measurement Point 4	Right	15	0.3032	0.1517		
Measurement Point 5	Bottom	15	0.2896	0.1446		
Measurement Point 6	Top	20	0.3201	0.1605		

Test Mode: standby						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.132	0.0664	1.63	0.815
Measurement Point 2	Back	15	0.131	0.0645		
Measurement Point 3	Left	15	0.130	0.0656		
Measurement Point 4	Right	15	0.128	0.0645		
Measurement Point 5	Bottom	15	0.104	0.0528		
Measurement Point 6	Top	20	0.145	0.0723		

Test Mode: standby						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	96.251	48.1246	614	307
Measurement Point 2	Back	15	96.147	48.0725		
Measurement Point 3	Left	15	96.325	48.1638		
Measurement Point 4	Right	15	95.471	47.7384		
Measurement Point 5	Bottom	15	87.651	43.8262		
Measurement Point 6	Top	20	98.256	49.1379		

PHOTOGRAPHS OFTEST SETUP



Signature

Tiger Xu
Supervisor
Date: 2022-08-01