RF Test Report

Report No.: AGC04094190903EE17

PRODUCT DESIGNATION	:	Swiss Peak Luxury 5W wireless charger
BRAND NAME	:	N/A
MODEL NAME	:	P308.06
APPLICANT	:	Xindao B.V.
DATE OF ISSUE	:	Dec. 02, 2019
STANDARD(S)	:	ETSI EN 303 417 V1.1.1(2017-09)
REPORT VERSION	:	V1.0

***A**ttestation of **G**lobal **C**ompliance (Shenzhen) Co., Ltd.*

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 02, 2019	Valid	Initial Release

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1. TEST RESULT CERTIFICATION

Applicant	Xindao B.V.
Address	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
Manufacturer	Xindao B.V.
Address	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
Factory	Xindao B.V.
Address	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
Product Designation	Swiss Peak Luxury 5W wireless charger
Brand Name	N/A
Test Model	P308.06
Date of test	Sep. 11, 2019~Dec. 02, 2019
Deviation	None
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-EC-RF

The above equipment was tested by SHENZHEN ATTESTATION OF GLOBAL COMPLIANCE (SHENZHEN) CO., LTD. for compliance with the requirements set forth in the European Standard ETSI EN 303 417 V1.1.1. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Prepared By	Jeast Zhan	
	Jeast Zhan (Project Engineer)	Dec. 02, 2019
Reviewed By	Max Zhang	
	Max Zhang (Reviewer)	Dec. 02, 2019
Approved By	Forrest Lei	
	Forrest Lei (Authorized Officer)	Dec. 02, 2019

2. EUT DESCRIPTION

Details of technical specification refer to the description in follows:

Hardware Version	LWK-W-FC-001-5W
Software Version	N/A
Operate Frequency	Energy transmission: 110-205kHz Data communication:175.68KHz
OCW	0.522kHz
Test Channels	Energy transmission: Low channel 132.47KHz, High channel 175.65kHz Data communication: 175.68KHz
Antenna Type	Integral antenna
Operational Mode(See note)	Mode 1: base station in stand-by, idle mode Mode 2: communication before charging, adjustment charging mode / position Mode 3: communication Mode 4: energy transmission
Power Supply	DC 5V 2A or DC5V 1A

NOTE: 1. For more information, please refer to User's Manual.

2. During the initial establishment of the charging mode (mode 2), no or very low emission occur (below the sensitivity level of the test set-up), so the mode 2 can be assumed as irrelevant for the test.

3. Mode 3 and mode 4 have been performed within one set-up, worst-case alignment. But each mode have been tested separately with specific test software.

4. The minimum/maximum temperature of -10/40℃ is not a standard requirement and is measured according to the maximum service temperature stated by the manufacturer.

3. DESCRIPTION OF TEST ITEMS

Harmonised Standard ETSI EN 303 417		
Requirement		Requirement Conditionality
No	Description	
1	Permitted range of operating frequencies	☒ Applicable ☐ Not Applicable
2	Operating frequency ranges	☒ Applicable ☐ Not Applicable
3	H-field requirements	☒ Applicable ☐ Not Applicable
4	Transmitter spurious emissions	☒ Applicable ☐ Not Applicable
5	Transmitter out of band (OOB) emissions	☒ Applicable ☐ Not Applicable
6	WPT system unwanted conducted emissions	☐ Applicable ☒ Not Applicable
7	Receiver blocking	☒ Applicable ☐ Not Applicable

4. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

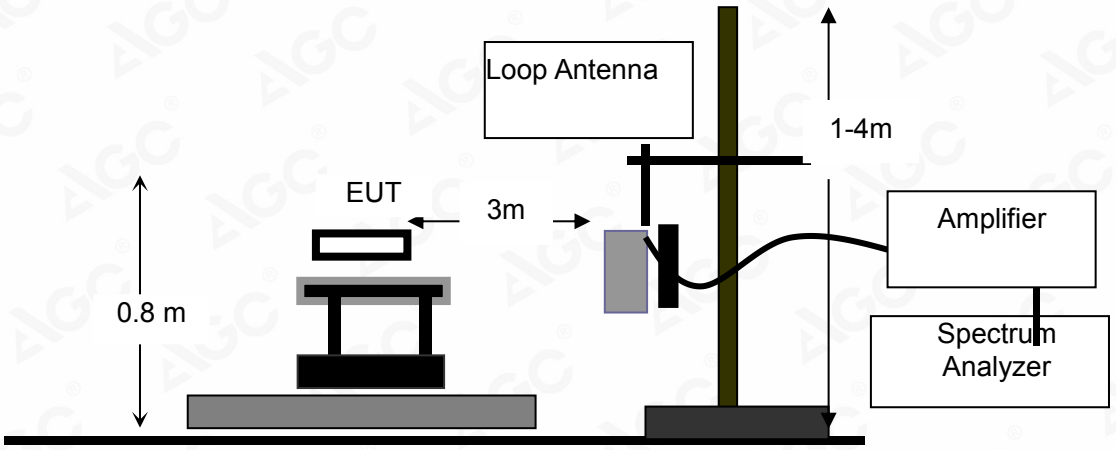
5. ETSI EN 303 417 REQUIREMENT

5.1 TRANSMITTER H-FIELD REQUIREMENTS

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2019	Jun. 11, 2020
Amplifier	ETS-LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
LOOP ANTENNA	LAPLACE	RF300	--	Feb. 19, 2019	Feb. 18, 2021

TEST SETUP:



TEST LIMITS:

The H-field limit in dBμA/m at 3 m, H_{3m}, is determined by the following equation:

$$H_{3m} = H_{10m} + C_3 \quad (F.2)$$

Where: H_{10m} is the H-field limit in dBμA/m at 10 m distance according to the present document; and C_3 is a conversion factor in dB determined from figure F.2.

According to EN 303 417 Tablet 3,

Table 3: H-field limits

Frequency range [MHz]	H-field strength limit [dBμA/m at 10 m]	Comments
0,019 ≤ f < 0,021	72	
0,059 ≤ f < 0,061	69,1 descending 10 dB/dec above 0,059 MHz	See note 1
0,079 ≤ f < 0,090	67,8 descending 10 dB/dec above 0,079 MHz	See note 2
0,100 ≤ f < 0,119	42	
0,119 ≤ f < 0,135	66 descending 10 dB/dec above 0,119 MHz	See note 1
0,135 ≤ f < 0,140	42	
0,140 ≤ f < 0,1485	37,7	
0,1485 ≤ f < 0,30	-5	
6,765 ≤ f < 6,795	42	

NOTE 1: Limit is 42 dBμA/m for the following spot frequencies: 60 kHz ± 250 Hz and 129,1 kHz ± 500 Hz.
NOTE 2: At the time of preparation of the present document the feasibility of increased limits for high power wireless power transmission systems to charge vehicles [i.4] was prepared. New specific requirements for such systems (e.g. higher H-field emission limits in the 79 - 90 kHz band) will be reflected within a future revision of the present document.

The limit at 10 m(H_{10m}) is=-5.0dBμA/m.

Owing to the frequency EUT is 175.7kHz, so the C_3 approach to 31.2dB.

So the H3m =26.2dBuA/m.

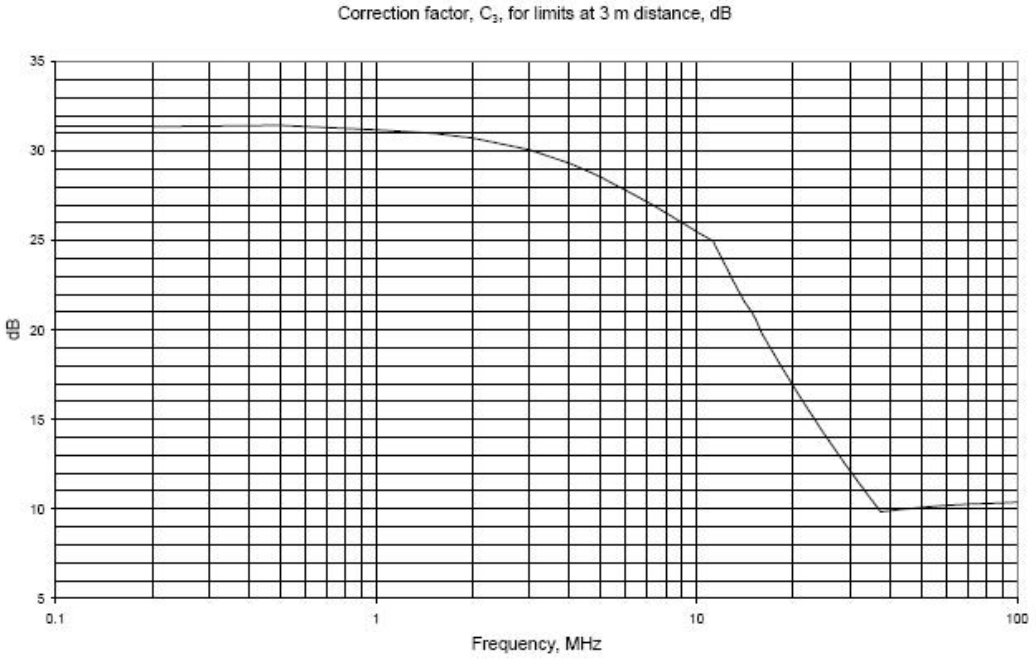


Figure F.2: Conversion factor C_3 versus frequency

TEST PROCEDURE:

The EUT was placed on the top of an insulating table 0.8 meters above the ground at a semi-anechoic chamber.

The table was rotated 360 degrees to determine the position of the highest radiation.

The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

The H-field is measured with a shielded loop antenna connected to a measurement receiver.

The measuring bandwidth and detector type of the measurement receiver shall be in accordance with EN 300 330 V2.1.1 Table 11.

The EUT operate with modulation under normal and extreme conditions.

TEST RESULTS:

Test Mode: Mode 1

Extreme conditions state

conditions	Test Temp	Test Volt.(V)	Note
TN/VN	25℃	5.0	Worst case
TL/ VL	-10℃	4.5	
TH/VL	40℃	4.5	
TL/VH	-10℃	5.0	
TH/VH	40℃	5.0	

Test results tested at 3m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.17568	23.53	-2.38	21.15	26.20

Test results calculated to 10m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.17568	23.53	-33.58	-10.05	-5.00

Test Mode: Mode 3

Extreme conditions state

conditions	Test Temp	Test Volt.(V)	Note
TN/VN	25℃	5.0	Worst case
TL/ VL	-10℃	4.5	
TH/VL	40℃	4.5	
TL/VH	-10℃	5.0	
TH/VH	40℃	5.0	

Test results tested at 3m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.17568	23.53	-4.25	19.28	26.20

Test results calculated to 10m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.17568	23.53	-35.45	-11.92	-5.00

Test Mode: Mode 4

Extreme conditions state

conditions	Test Temp	Test Volt.(V)	Note
TN/VN	25℃	5.0	Worst case
TL/ VL	-10℃	4.5	
TH/VL	40℃	4.5	
TL/VH	-10℃	5.0	
TH/VH	40℃	5.0	

Test results tested at 3m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.13247	23.53	4.27	27.80	96.38
0.14388	23.53	4.11	27.64	68.90
0.17565	23.53	3.96	27.49	26.20

Test results calculated to 10m test sites:

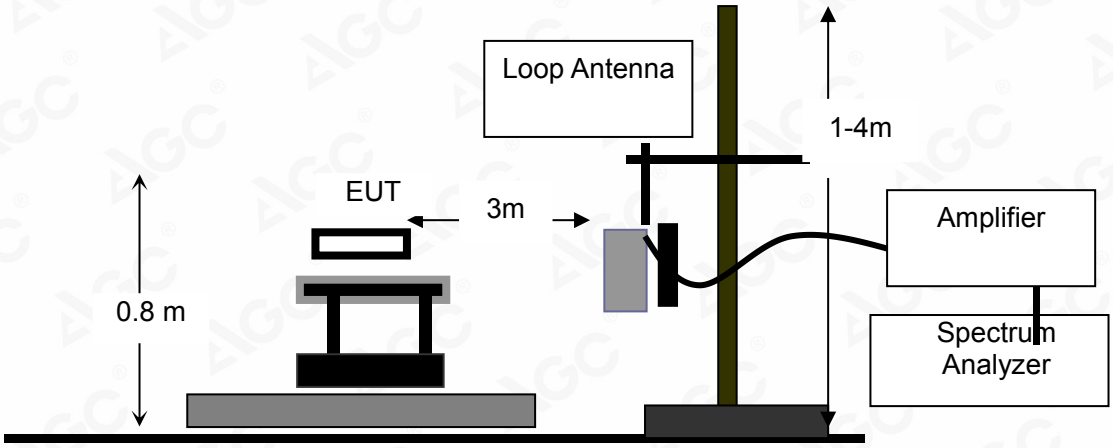
Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.13247	23.53	-26.93	-3.40	65.18
0.14388	23.53	-27.09	-3.56	37.70
0.17565	23.53	-27.24	-3.71	-5.00

5.2 OPERATING FREQUENCY RANGES

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2019	Jun. 11, 2020
Amplifier	ETS-LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
LOOP ANTENNA	LAPLACE	RF300	--	Feb. 19, 2019	Feb. 18, 2021

TEST SETUP:



TEST PROCEDURE:

1). The EUT was placed on a turn table which is 0.8m above ground plane.

2). The EUT was modulated by normal signal,

3).Set SPA Center Frequency = fundamental frequency, RBW=VBW=200Hz, Span=5kHz, Detector=RMS. The 99 % OBW function shall be used to determine the operating frequency range, fH is the frequency of the upper marker resulting from the OFR, fL is the frequency of the lower marker resulting from the OFR.

4), Both normal test condition and extreme test condition applied

LIMITS

The operating frequency range for emissions shall be within one of the following limits: 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz.

TEST RESULT

Test Mode: Mode 3

Frequency Range Test Result

Test Temperature	Test Voltage (V DC)	Lowest Frequency (fL)	Highest Frequency （fH）	Limit
-10℃	4.5	175.423 kHz	175.940 kHz	100kHz≤&≤300kHz
	5.0	175.421 kHz	175.936 kHz	100kHz≤&≤300kHz
25℃	5.0	175.419 kHz	175.941 kHz	100kHz≤&≤300kHz
40℃	4.5	175.421 kHz	175.938 kHz	100kHz≤&≤300kHz
	5.0	175.424 kHz	175.940 kHz	100kHz≤&≤300kHz
OFR		0.522kHz		
Results		PASS		

Test Mode: Mode 1

Frequency Range Test Result

Test Temperature	Test Voltage (V DC)	Lowest Frequency (fL)	Highest Frequency （fH）	Limit
-10℃	4.5	175.420 kHz	175.939 kHz	100kHz≤&≤300kHz
	5.0	175.421 kHz	175.937 kHz	100kHz≤&≤300kHz
25℃	5.0	175.419 kHz	175.941 kHz	100kHz≤&≤300kHz
40℃	4.5	175.420 kHz	175.938 kHz	100kHz≤&≤300kHz
	5.0	175.421 kHz	175.938 kHz	100kHz≤&≤300kHz
OFR		0.522 kHz		
Results		PASS		

Test Mode: Mode 4

Frequency Range Test Result

Test Temperature	Test Voltage (V DC)	Lowest Frequency (fL)	Highest Frequency （fH）	Limit
-10℃	4.5	132.213 kHz	175.902 kHz	100kHz≤&≤300kHz
	5.0	132.216 kHz	175.903 kHz	100kHz≤&≤300kHz
25℃	5.0	132.212 kHz	175.906 kHz	100kHz≤&≤300kHz
40℃	4.5	132.216 kHz	175.905 kHz	100kHz≤&≤300kHz
	5.0	132.214 kHz	175.905 kHz	100kHz≤&≤300kHz
OFR		43.694kHz		
Results		PASS		

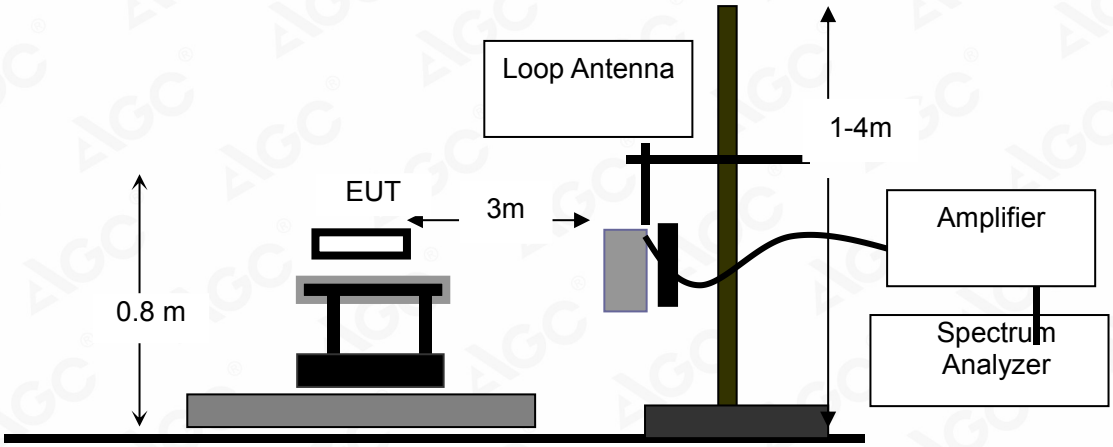
NOTE: *All the modes had been tested, but only the worst data recorded in the report.*

5.3 TRANSMITTER OUT OF BAND (OOB) EMISSIONS

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2019	Jun. 11, 2020
Amplifier	ETS-LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
LOOP ANTENNA	LAPLACE	RF300	--	Feb. 19, 2019	Feb. 18, 2021

TEST SETUP:



TEST PROCEDURE:

1). The EUT was placed on a turn table which is 0.8m above ground plane.

2). The EUT was modulated by normal signal,

3).Set SPA Center Frequency = fundamental frequency, RBW=VBW=200Hz, Span=5KHz, Detector=RMS. The 99 % OBW function shall be used to determine the operating frequency range, fH is the frequency of the upper marker resulting from the OFR, fL is the frequency of the lower marker resulting from the OFR.

4), Both normal test condition and extreme test condition applied

LIMITS

The OOB limits are visualized in figures; they are descending from the intentional limits from Table 3 at fH/fL with 10 dB/decade.

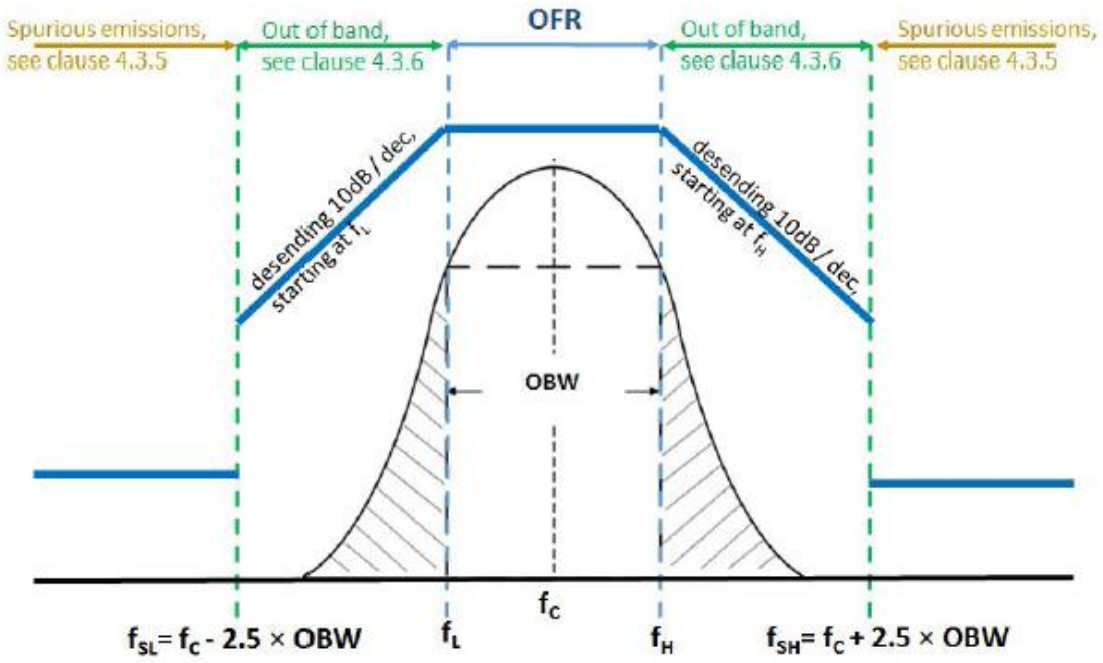


Figure 4: Out of band and spurious domain of a single frequency WPT system

TEST RESULT

Test Mode: Mode 3

Frequency range (KHz)		Maximum level @10m (dBuA/m)	Limit @ 10m (dBuA/m)	Result
fSL -fL	174.375 to 175.419	Less than -21.08	See figure 4	Pass
fL	175.419	-21.08	-5.00	Pass
fH	175.941	-21.60	-5.00	Pass
fH - fSH	175.941 to 176.985	Less than -21.6	See figure 4	Pass

Test Mode: Mode 1

requency range (KHz)		Maximum level @10m (dBuA/m)	Limit @ 10m (dBuA/m)	Result
fSL-fL	174.375 to 175.419	Less than -19.21	See figure 4	Pass
fL	175.419	-19.21	-5.00	Pass
fH	175.941	-19.73	-5.00	Pass
fH-fSH	175.941 to 176.985	Less than -19.73	See figure 4	Pass

Test Mode: Mode 4

Frequency range (KHz)		Maximum level @10m (dBuA/m)	Limit @ 10m (dBuA/m)	Result
fSL-fL	131.178 to 132.212	Less than -12.56	See figure 4	Pass
fL	132.212	-12.56	65.18	Pass
fH	175.906	-13.39	-5.00	Pass
fH-fSH	175.906 to 176.928	Less than -13.39	See figure 4	Pass

NOTE: *All the modes had been tested, but only the worst data recorded in the report.*

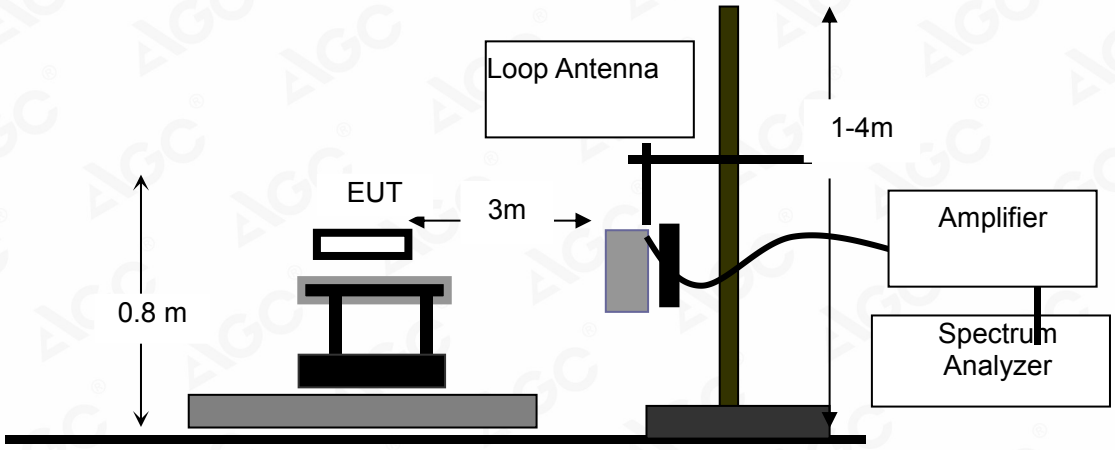
5.4 TRANSMITTER SPURIOUS EMISSIONS

MEASUREMENT EQUIPMENT USED:

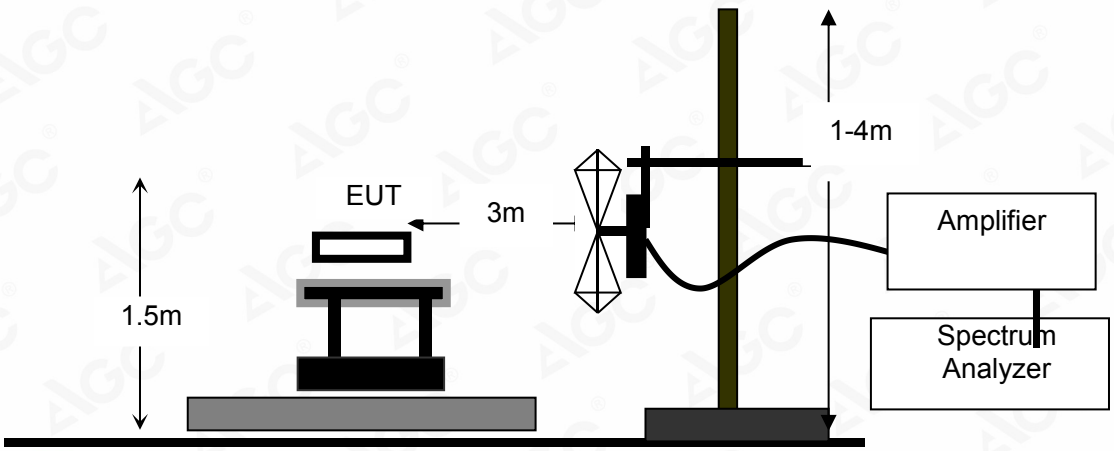
NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2019	Jun. 11, 2020
Amplifier	ETS-LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
LOOP ANTENNA	LAPLACE	RF300	--	Feb. 19, 2019	Feb. 18, 2021
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021

TEST SETUP:

FREQUENCY RANGE (9KHZ-30MHZ)

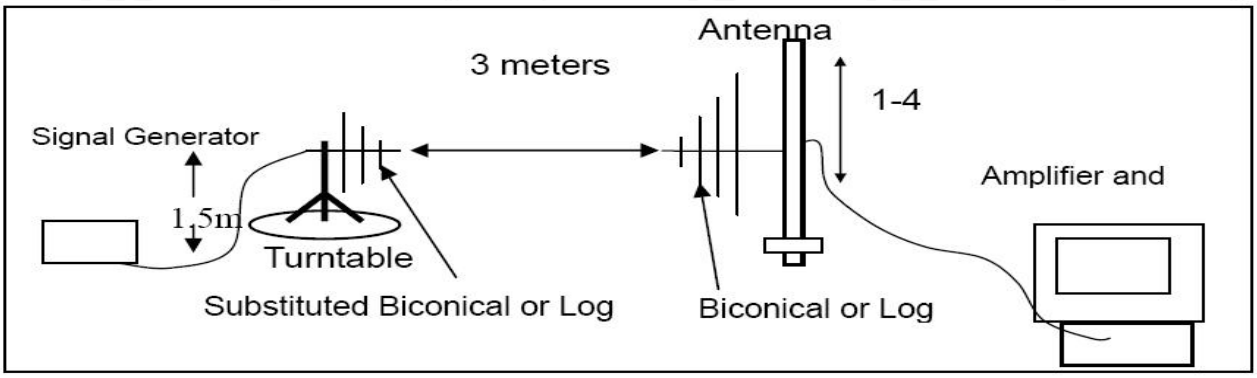


FREQUENCY RANGE (ABOVE 30MHZ)



SUBSTITUTION METHOD:

RADIATED BELOW 1GHZ



TEST PROCEDURE:

For test method of frequency range (9 kHz-30MHz)

The EUT was placed on the top of an insulating table 0.8 meters above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

The H-field is measured with a shielded loop antenna connected to a measurement receiver.

The measuring bandwidth and detector type of the measurement receiver shall be in accordance with EN 300 330 Table 1.

For test method of frequency range (30 MHz-1000MHz)

EUT was placed on a 1.5m height wooden table. The search antenna is placed at 3m distances from the EUT and search antenna height is from 1-4m. With the transmitter operating at continuously mode, the turntable was slowly rotated to locate the direction of maximum emission. Once maximum direction is determined, the search antenna was raised and lowered in both vertical and horizontal polarizations.

The EUT was removed from the turntable and replaced with a linearly polarized antenna connected to a calibrated RF signal generator. The RF generator was set to a measured emission frequency and the search antenna was raised and lowered to produce a maximum received reading. The generator output was increased to match the radiated emission reading measured previously, and the result expressed in dB EIRP or ERP, correcting for substitution antenna gain at each frequency.

LIMITS OF RADIATED DISTURBANCES

Below 30MHz

Table 4

State (see note)	Frequency 9 kHz ≤ f < 10 MHz	Frequency 10 MHz ≤ f < 30 MHz
Operating	27 dBμA/m at 9 kHz descending 10 dB/dec	-3,5 dBμA/m
Standby	5,5 dBμA/m at 9 kHz descending 10 dB/dec	-25 dBμA/m
NOTE: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2.		

Table 5

State (see note)	47 MHz to 74 MHz 87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 790 MHz	Other frequencies between 30 MHz to 1 000 MHz
Operating	4 nW	250 nW
Standby	2 nW	2 nW
NOTE: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2.		

TEST LIMITS & RESULT

Test Mode: Mode 3
FREQUENCY RANGE (9KHZ-30MHZ)

Operation Mode					
Frequency	Reading level	Total Factor	Emission level	Limit	Margin
(MHz)	(dB μA)	(dB/m)	(dB μA/m)	(dBμA/m)	(dBμA/m)
0.021	-8.02	-7.96	-15.98	23.38	39.36
0.282	-11.32	-7.96	-19.28	12.05	31.33
0.826	-12.75	-7.96	-20.71	7.37	28.09
1.865	-14.68	-3.98	-18.66	3.84	22.50
3.483	-13.41	-3.09	-16.50	1.12	17.62
3.005	-12.79	-1.25	-14.04	1.76	15.80

Remark:

(1) Corrected Power (dBm) = Total Factor + Reading Level

(2) Measuring frequencies from 9KHz to the 30MHz.

(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

FREQUENCY RANGE (ABOVE 30MHZ)

Transmitter Spurious Emission below 1GHz (30MHz-1GHz)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
84.84	30.85	V	-61.04	0.48	0.54	-60.98	-36.00	24.98
130.22	30.90	V	-59.08	0.49	0.10	-59.47	-36.00	23.47
240.19	31.00	V	-66.92	0.52	6.60	-60.84	-36.00	24.84
326.27	30.38	V	-68.00	0.53	6.10	-62.43	-36.00	26.43
334.74	31.58	V	-65.66	0.53	5.94	-60.25	-36.00	24.25
828.04	31.99	V	-66.75	0.66	6.40	-61.01	-54.00	7.01
84.21	32.26	H	-57.79	0.48	0.54	-57.73	-36.00	21.73
130.93	30.97	H	-60.93	0.49	0.10	-61.32	-36.00	25.32
242.43	29.56	H	-68.46	0.52	6.72	-62.26	-36.00	26.26
326.05	31.08	H	-66.55	0.53	6.10	-60.98	-36.00	24.98
734.83	31.06	H	-64.69	0.59	6.64	-58.65	-54.00	4.65
827.46	31.04	H	-67.81	0.66	6.45	-62.02	-54.00	8.02

Note: 1.The margins of the other spectrum are not exceeding the minimum value of margin, and this part of the results without recording in the test report.

2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "--" remark, if no specific emission from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

Test Mode: Mode 4(The low channel is the worst case)
FREQUENCY RANGE (9KHZ-30MHZ)

Operation Mode					
Frequency	Reading level	Total Factor	Emission level	Limit	Margin
(MHz)	(dB μA)	(dB/m)	(dB μA/m)	(dBμA/m)	(dBμA/m)
0.030	-8.00	-7.96	-15.96	21.81	37.77
0.286	-11.26	-7.96	-19.22	11.98	31.20
0.722	-12.81	-7.96	-20.77	7.96	28.73
2.167	-14.31	-3.98	-18.29	3.18	21.47
3.295	-12.97	-3.09	-16.06	1.36	17.43
4.149	-12.42	-1.25	-13.67	0.36	14.04

Remark:

(1) Corrected Power (dBm) = Total Factor + Reading Level

(2) Measuring frequencies from 9KHz to the 30MHz.

(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

FREQUENCY RANGE (ABOVE 30MHZ)

Transmitter Spurious Emission below 1GHz (30MHz-1GHz)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
84.86	30.17	V	-61.07	0.48	0.54	-61.01	-36.00	25.01
129.89	31.07	V	-59.50	0.49	0.14	-59.85	-36.00	23.85
240.31	31.44	V	-66.19	0.52	6.60	-60.11	-36.00	24.11
325.74	30.31	V	-68.42	0.53	6.10	-62.85	-36.00	26.85
334.52	31.02	V	-64.89	0.53	5.94	-59.48	-36.00	23.48
827.70	31.91	V	-67.00	0.66	6.45	-61.20	-54.00	7.20
84.14	32.27	H	-57.48	0.48	0.54	-57.42	-36.00	21.42
131.25	30.23	H	-59.74	0.49	0.08	-60.15	-36.00	24.15
242.80	30.09	H	-67.54	0.52	6.72	-61.34	-36.00	25.34
325.51	31.33	H	-67.36	0.53	6.10	-61.79	-36.00	25.79
735.26	31.21	H	-67.27	0.59	6.60	-61.26	-54.00	7.26
827.63	31.40	H	-64.51	0.66	6.45	-58.72	-54.00	4.72

Note: 1.The margins of the other spectrum are not exceeding the minimum value of margin, and this part of the results without recording in the test report.

2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "--" remark, if no specific emission from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

Test Mode: Mode 1
FREQUENCY RANGE (9KHZ-30MHZ)

Standby Mode					
Frequency	Reading level	Total Factor	Emission level	Limit	Margin
(MHz)	(dB μA)	(dB/m)	(dB μA/m)	(dBμA/m)	(dBμA/m)
0.049	-7.55	-7.96	-15.51	-1.84	13.66
0.267	-10.49	-7.96	-18.45	-9.22	9.24
0.514	-11.32	-7.96	-19.28	-12.07	7.22
1.601	-23.27	-3.98	-27.25	-17.00	10.24
3.092	-28.03	-3.09	-31.12	-19.86	11.26
5.377	-26.54	-1.25	-27.79	-22.26	5.52

Remark:

(1) Corrected Power (dBm) = Total Factor + Reading Level

(2) Measuring frequencies from 9KHz to the 30MHz.

(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

FREQUENCY RANGE (ABOVE 30MHZ)

Transmitter Spurious Emission below 1GHz (30MHz-1GHz)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
84.89	31.51	V	-70.31	0.48	0.54	-70.25	-57.00	13.25
154.90	31.47	V	-70.41	0.50	0.70	-70.21	-57.00	13.21
248.98	31.43	V	-76.63	0.52	7.02	-70.13	-57.00	13.13
394.32	31.17	V	-76.00	0.54	6.48	-70.06	-57.00	13.06
483.94	29.06	V	-76.31	0.56	6.96	-69.91	-57.00	12.91
894.97	30.65	V	-75.35	0.70	6.18	-69.87	-57.00	12.87
84.16	32.38	H	-71.05	0.48	0.54	-70.99	-57.00	13.99
110.53	30.59	H	-72.04	0.48	1.40	-71.12	-57.00	14.12
219.24	30.55	H	-77.39	0.52	7.38	-70.53	-57.00	13.53
484.86	31.27	H	-77.45	0.56	6.98	-71.03	-57.00	14.03
554.62	30.55	H	-80.46	0.57	6.78	-74.25	-57.00	17.25
634.91	30.70	H	-78.35	0.58	7.22	-71.71	-57.00	14.71

Note: 1.The margins of the other spectrum are not exceeding the minimum value of margin, and this part of the results without recording in the test report.

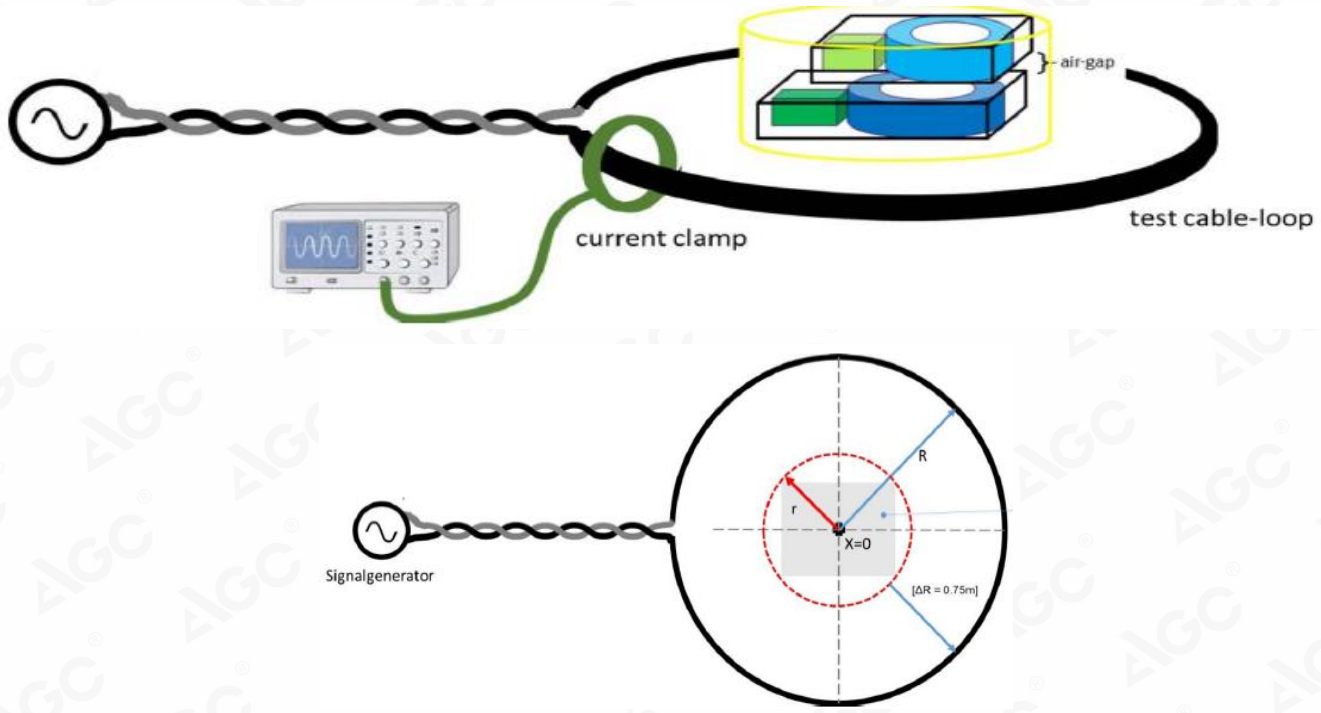
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "--" remark, if no specific emission from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

5.5 RECEIVER BLOCKING

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
MXG X-Series Vector Signal Generator	Agilent	N5182B	MY50140530	Sep. 09, 2019	Sep. 08, 2020
LOOP ANTENNA	LAPLACE	RF300	N/A	Feb. 19, 2019	Feb. 18, 2021
Clamp meter	PROVA	PROVA-11	17200101	Sep. 09, 2019	Sep. 08, 2020

TEST SETUP:



TEST PROCEDURE:

1). The test shall be carried out inside a test chamber according to clauses C.1.1 and C.1.2 in ETSI EN 300 330

2). A test loop with a radius r shall be used to create the magnetic field; the test loop shall lie on a non-metallic ground and the minimum distance to metallic objects (e.g. ground plane) shall be 0,75 m. The EUT shall be placed to the centre of the test-loop

3). The test loop shall be sufficiently large so that the test loop itself does not influence the WPT system; The radius R of the test-loop shall be in minimum ΔR = 0,75 m larger than the maximum dimension r of the EUT.

$$R >= r + \Delta R.$$

The maximum H-Field can be calculated from the loop current I (into the test-loop) with the following formula:

$$H=I/2R$$

4) The required output current to achieve the required magnetic field at the WPT system shall be generated with a signal generator (unmodulated signal) at the test frequencies. For each test frequency the "reaction" of the device shall be recorded and checked against the performance criterion

LIMITS

The EUT shall achieve the wanted performance criterion, in the presence of the blocking signal.

Table 6: Receiver blocking limits

	In-band signal	OOB signal	Remote-band signal
Frequency	Centre frequency (f_c) of the WPT system (see clause 4.3.3)	$f = f_c \pm F$ (see note)	$f = f_c \pm 10 \times F$ (see note)
Signal level field strength at the EUT	72 dBµA/m	72 dBµA/m	82 dBµA/m
NOTE: F = OFR see clause 4.3.3.			

TEST RESULT

Test Mode: Mode 3

Test Frequency(KHz)		Signal level @ EUT	Performance	Result
In-band signal	175.680	72dBuA/m	No function loss	Pass
OOB signal	175.158	72dBuA/m	No function loss	Pass
	176.202	72dBuA/m	No function loss	Pass
Remote-band signal	170.460	82dBuA/m	No function loss	Pass
	180.900	82dBuA/m	No function loss	Pass

Test Mode: Mode 1

Test Frequency(KHz)		Signal level @ EUT	Performance	Result
In-band signal	175.680	72dBuA/m	No function loss	Pass
OOB signal	175.158	72dBuA/m	No function loss	Pass
	176.202	72dBuA/m	No function loss	Pass
Remote-band signal	170.460	82dBuA/m	No function loss	Pass
	180.900	82dBuA/m	No function loss	Pass

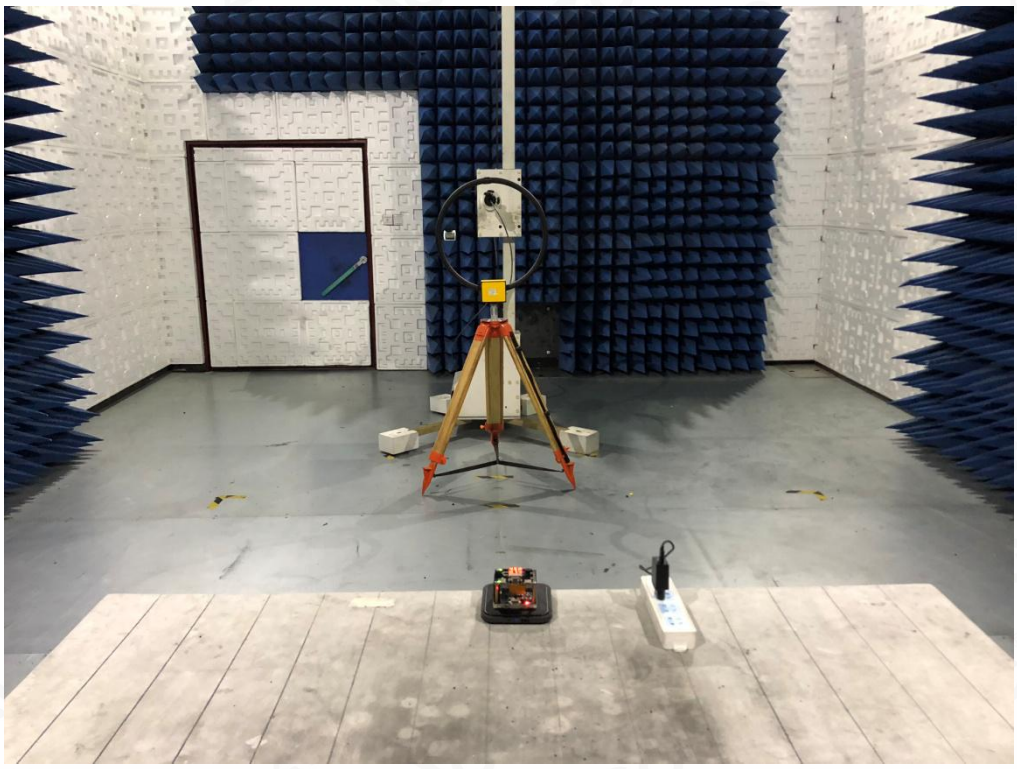
6. INTERPRETATION OF MEASUREMENT RESULTS

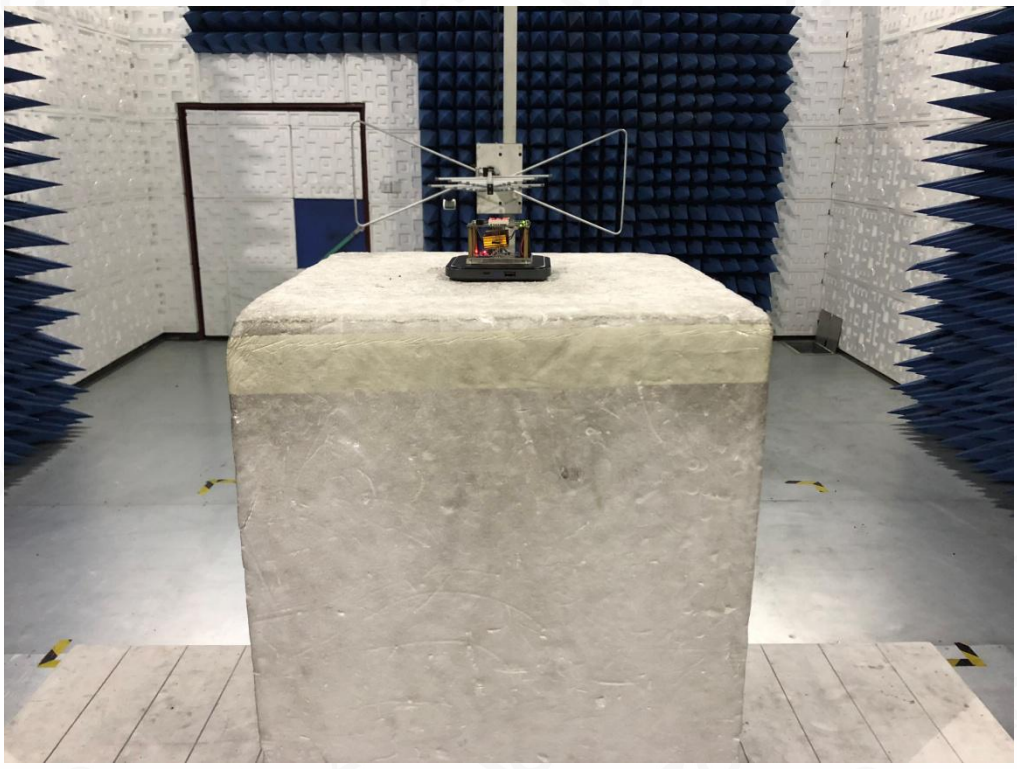
All the measurement equipments and accessories have been carefully selected to meet the maximum measurement uncertainty specified below:

RF Frequency	± 1 x 10^{-7}
RF Power, Conducted	± 0.75dB
Maximum Frequency Deviation: _ Within 300Hz and 6KHz of Audio Frequency _ Within 6KHz and 25KHz of Audio Frequency	± 5% ± 3dB
Adjacent channel power	± 3dB
Conducted Emission of Transmitter, Valid Up to 12.75GHz	± 4dB
Conducted Emissions of Receivers	± 3dB
Radiated Emission of Transmitter, Valid Up to 12.75GHz	± 6dB

P.S. Uncertainty figures are valid to confidence level of 95% calculated according to the methods described in the ETSI TR 100 028.

APPENDIX A: PHOTOGRAPHS OF TEST SETUP





APPENDIX B: PHOTOGRAPHS OF THE EUT

Refer to the Report No.: AGC04094190903AP01

----END OF REPORT----