

RF Test Report

Report No.: AGC05443221111EE17

PRODUCT DESIGNATION	:	Glass wireless quick charger
BRAND NAME	:	N/A
MODEL NAME	:	M06761
APPLICANT	:	MID OCEAN BRANDS B.V
DATE OF ISSUE	:	Nov. 23, 2022
STANDARD(S)	:	ETSI EN 303 417 V1.1.1(2017-09)
REPORT VERSION	:	V1.0





REPORT REVISE RECORD

Report Version	Revise Time	Issued Date Valid Version No.		Notes
V1.0	/	Nov. 23, 2022	Valid	Initial Release



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1. TEST RESULT CERTIFICATION

Applicant	MID OCEAN BRANDS B.V		
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Manufacturer	MID OCEAN BRANDS B.V		
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Factory	MID OCEAN BRANDS B.V		
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Product Designation	Glass wireless quick charger		
Brand Name	N/A		
Test Model	MO6761		
Date of receipt of test item	Nov. 11, 2022		
Date of test	Nov. 11, 2022 to Nov. 22, 2022		
Deviation	None		
Condition of Test Sample	Normal		
Test Result	Pass		
Report Template	AGCRT-EC-WPT-RF		
T I I	U. LL. OLIENZUENI ATTEOTATIONI OF OLIODAL COMPLIANIOF (OLIENIZUENI)		

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

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Nov. 23, 2022

Reviewed By

Calvin Liu (Reviewer)

Nov. 23, 2022

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Nov. 23, 2022

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2. EUT DESCRIPTION

Details of technical specification refer to the description in follows:

V1.0	
V1.0	
110KHz-205KHz	
ASK	
Energy transmission: Low channel 0.956KHz, Middle Channel 0.955kHz, High channel 0.962KHz Data communication: 0.723KHz	
Energy transmission: Low channel 123.4KHz, Middle Channel 131.8kHz, High channel 146.5KHz Data communication: 128.4KHz	
Coil Antenna	
Mode 1: base station in stand-by, idle mode Mode 3: communication Mode 4: energy transmission	
DC 5V by adapter	
Input(Type-C): DC 5V/2A, DC 9V/2A Output(Wireless): DC 5V/1A, DC 7.5V/1A, DC 9V/1.1A	
10W	
GS-QC571A	
AC 110-240V~50/60Hz, 0.8A	
DC 5V/2.4A, DC 4.5V/5A, DC 5V/4.5A, DC 9V/2A, DC 12V/1.5A	

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 maximum temperature of 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	Requirement Conditionality				
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		



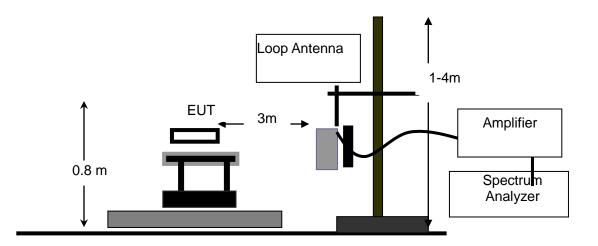
5. ETSI EN 303 417 REQUIREMENT

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	Mar. 28, 2022	Mar. 27, 2023
Power amplifer	AR	75A250	18464	N/A	N/A
Active loop antenna(9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024

TEST SETUP:





TEST LIMITS:

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

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

Where:H_{10m} is the H-field limit in dBµA/m at 10 m distance according to the present document; andC₃ is a conversion factor in dB determined from figure F.2.

According to EN 303 417 Tablet 3,

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 a	nd 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.				

Table 3: H-field limits

Correction factor, C3, for limits at 3 m distance, dB

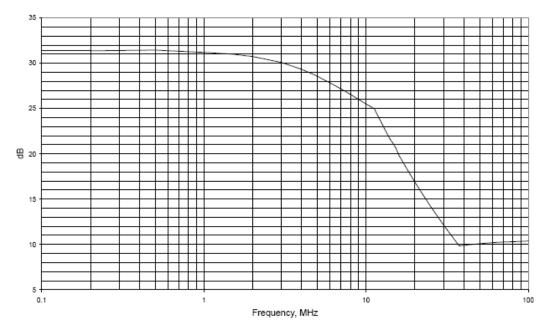
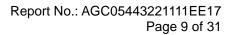


Figure F.2: Conversion factor C3 versus frequency





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 ℃	9.0	Worst case
TL/VL	-10 ℃	8.1	
TH/VL	45 ℃	8.1	
TL/VH	-10 ℃	9.9	
TH/VH	45 ℃	9.9	

Test results tested at 3m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.1268	23.53	-1.20	22.33	96.92

Test results calculated to 10m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.1268	23.53	-32.40	-8.87	65.72



Test Mode: Mode 3

Extreme conditions state

conditions	Test Temp	Test Volt.(V)	Note
TN/VN	25 ℃	9.0	Worst case
TL/VL	-10 ℃	8.1	
TH/VL	45 ℃	8.1	
TL/VH	-10 ℃	9.9	
TH/VH	45 ℃	9.9	

Test results tested at 3m test sites:

Freq.	Antenna Factor	Reading Level Corrected Level		Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.1284	23.53	2.26	25.79	62.40

Test results calculated to 10m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.1284	23.53	-28.94	-5.41	31.20



Test Mode: Mode 4

Extreme conditions state

conditions	Test Temp	Test Volt.(V)	Note
TN/VN	25 ℃	9.0	Worst case
TL/VL	-10 ℃	8.1	
TH/VL	45 ℃	8.1	
TL/VH	-10 ℃	9.9	
TH/VH	45 ℃	9.9	

Test results tested at 3m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.1234	23.53	1.64	25.17	96.76
0.1318	23.53	2.43	25.96	96.76
0.1465	23.53	-8.53	15.00	68.90

Test results calculated to 10m test sites:

Freq.	Antenna Factor	Reading Level	Corrected Level	Limit
(MHz)	(dB/m)	(dBuA)	(dBuA/m)	(dBuA/m)
0.1234	23.53	-29.56	-6.03	65.56
0.1318	23.53	-28.77	-5.24	65.56
0.1465	23.53	-39.73	-16.20	37.70

Remark:

(1) Corrected Level (dBuA/m) = Reading Level + Antenna Factor

(2) For the calculated method, please refer to Annex F at EN 300330.

(3) All extreme conditions were considered for test, but only record the worst case.

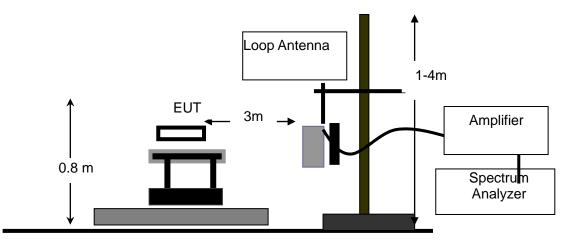


5.2 OPERATING FREQUENCY RANGES

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESCI	10096	Mar. 28, 2022	Mar. 27, 2023
Power amplifer	AR	75A250	18464	N/A	N/A
Active loop antenna(9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024

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 1

Frequency Range Test Result

Test Temperature	Test Voltage (V DC)	Lowest Frequency(K Hz)	Highest Frequency (KHz)	Limit
- 10 ℃	9.9	126.559	127.037	100kHz≤&≤300kHz
-10 C	8.1	126.563	127.041	100kHz≤&≤300kHz
25 ℃	9.0	126.559	127.042	100kHz≤&≤300kHz
45 ℃	9.9	126.561	127.039	100kHz≤&≤300kHz
45 C	8.1	126.560	127.041	100kHz≤&≤300kHz
OFR	FR 0.483kHz			83kHz
Result	S	PASS		

Test Mode: Mode 3

Frequency Range Test Result

Test Temperature	Test Voltage (V DC)	Lowest Frequency(K Hz)	Highest Frequency (KHz)	Limit
-10 ℃	9.9	128.041	128.761	100kHz≤&≤300kHz
-10 C	8.1	128.043	128.761	100kHz≤&≤300kHz
25 ℃	9.0	128.039	128.762	100kHz≤&≤300kHz
45 ℃	9.9	128.039	128.760	100kHz≤&≤300kHz
45 C	8.1	128.039	128.761	100kHz≤&≤300kHz
OFR	OFR 0.723kHz		23kHz	
Result	S	PASS		



Test Mode: Mode 4

Frequency Range Test Result

Test Temperature	Test Voltage (V DC)	Lowest Frequency(K Hz)	Highest Frequency (KHz)	Limit
10°0	9.9	122.922	146.978	100kHz≤&≤300kHz
-10℃	8.1	122.924	146.977	100kHz≤&≤300kHz
25 ℃	9.0	122.922	146.981	100kHz≤&≤300kHz
45 ℃	9.9	122.923	146.977	100kHz≤&≤300kHz
4 3 C	8.1	122.925	146.979	100kHz≤&≤300kHz
OFR		24.059kHz		59kHz
Results	3	PASS		

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

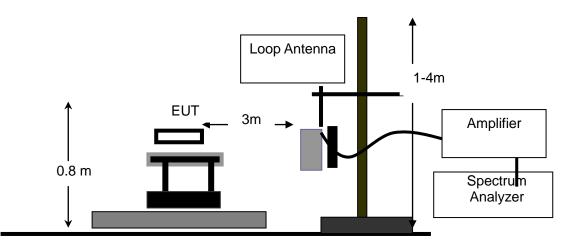


5.3 TRANSMITTER OUT OF BAND (OOB) EMISSIONS

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESCI	10096	Mar. 28, 2022	Mar. 27, 2023
Power amplifer	AR	75A250	18464	N/A	N/A
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024

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.

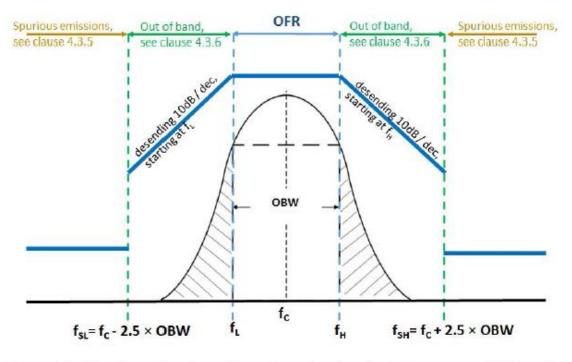


Figure 4: Out of band and spurious domain of a single frequency WPT system

TEST RESULT

Frequency range (KHz)		Maximum level @10m (dBuA/m)	Limit @ 10m (dBuA/m)	Result
fSL -fL	125.593 to 126.559	Less than -18.03	See figure 4	Pass
fL	126.559	-18.03	65.72	Pass
fH	127.042	-18.55	65.72	Pass
fH - fSH	127.042 to 128.008	Less than -18.55	See figure 4	Pass

Test Mode: Mode 3

Freque	Frequency range (KHz)		Limit @ 10m (dBuA/m)	Result
fSL-fL	126.593 to 128.039	Less than -14.57	See figure 4	Pass
fL	128.039	-14.57	31.20	Pass
fH	128.762	-15.09	31.20	Pass
fH-fSH	128.762 to 130.208	Less than -15.09	See figure 4	Pass



Test Mode: Mode 4

Frequency range (KHz)		Maximum level @10m (dBuA/m)	Limit @ 10m (dBuA/m)	Result
fSL-fL	121.01 to 122.922	Less than -15.19	See figure 4	Pass
fL	122.922	-15.19	65.56	Pass
fH	146.981	-25.88	37.70	Pass
fH-fSH	146.981 to 148.905	Less than -25.88	See figure 4	Pass

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



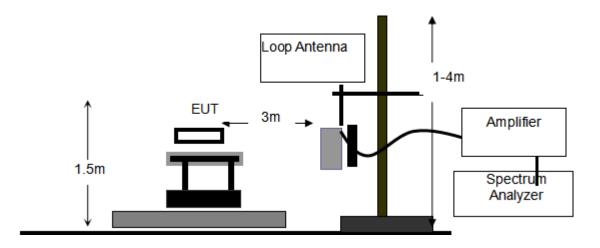
5.4 TRANSMITTER SPURIOUS EMISSIONS

MEASUREMENT EQUIPMENT USED:

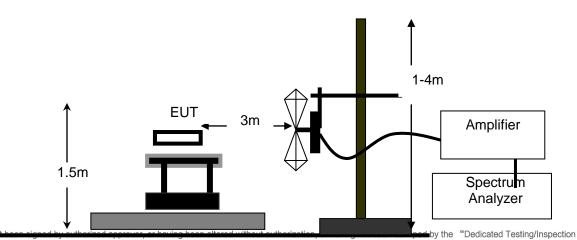
NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESCI	10096	Mar. 28, 2022	Mar. 27, 2023
Power amplifer	AR	75A250	18464	N/A	N/A
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 08, 2021	Jan. 07, 2023

TEST SETUP:

FREQUENCY RANGE (9KHZ-30MHZ)



FREQUENCY RANGE (ABOVE 30MHZ)



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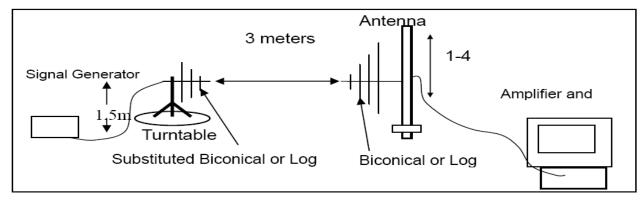
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SUBSTITUTION METHOD:

RADIATED BELOW 1GHZ



TEST PROCEDURE:

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

The EUT was placed on the top of an insulating table 1.5 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						

ABOVE 30MHz

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" me Table 2.	ans mode 2, 3 and 4 according to Table 2; "	standby" means mode 1 according to



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)						
0.032	-8.03	-7.96	-15.99	21.43	37.42						
0.225	-11.52	-7.96	-19.48	13.03	32.50						
0.707	-12.82	-7.96	-20.78	8.05	28.83						
1.913	-14.32	-3.98	-18.30	3.72	22.03						
2.579	-13.15	-3.09	-16.24	2.43	18.66						
3.576	-12.71	-1.25	-13.96	1.01	14.97						

Remark:

- (1) Corrected Power (dBm)= Total Factor + Reading Level
- (2) Measuring frequencies from 9KHz to the 30MHz.
- 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)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
73.25	31.97	V	-59.46	0.03	-1.42	-60.91	-54.00	6.91
158.41	28.24	V	-65.06	0.06	1.00	-64.12	-36.00	28.12
355.84	31.50	V	-67.47	0.25	6.15	-61.57	-36.00	25.57
428.31	26.00	V	-73.79	0.34	6.94	-67.18	-36.00	31.18
628.47	28.33	V	-71.47	0.51	7.22	-64.77	-54.00	10.77
758.30	27.92	V	-70.73	0.61	6.50	-64.84	-36.00	28.84
84.27	31.09	Н	-62.43	0.04	0.54	-61.93	-36.00	25.93
156.47	27.59	Н	-66.62	0.06	0.80	-65.88	-36.00	29.88
352.23	28.50	Н	-70.70	0.25	5.76	-65.19	-36.00	29.19
429.56	26.50	Н	-74.02	0.34	6.92	-67.44	-36.00	31.44
630.06	29.32	Н	-70.37	0.52	7.30	-63.59	-54.00	9.59
727.79	28.52	Н	-69.75	0.59	6.65	-63.68	-36.00	27.68

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

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)						
0.021	-8.05	-7.96	-16.01	23.38	39.39						
0.228	-11.34	-7.96	-19.30	12.95	32.25						
0.577	-12.89	-7.96	-20.85	8.93	29.78						
2.192	-14.33	-3.98	-18.31	3.13	21.44						
3.361	-13.11	-3.09	-16.20	1.28	17.48						
3.224	-12.79	-1.25	-14.04	1.46	15.50						

Remark:

- (1) Corrected Power (dBm) = Total Factor + Reading Level
- (2) Measuring frequencies from 9KHz to the 30MHz.
- 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)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
76.58	31.52	V	-60.39	0.04	-0.90	-61.33	-36.00	25.33
160.56	28.71	V	-66.04	0.06	1.20	-64.90	-36.00	28.90
352.31	31.40	V	-66.99	0.25	5.76	-61.48	-36.00	25.48
425.19	27.17	V	-72.69	0.33	7.00	-66.03	-36.00	30.03
627.97	28.85	V	-70.46	0.51	7.18	-63.80	-54.00	9.80
755.47	28.68	V	-69.74	0.61	6.35	-63.99	-36.00	27.99
83.47	31.50	Н	-62.57	0.04	0.38	-62.23	-36.00	26.23
156.96	26.42	Н	-66.58	0.06	0.80	-65.84	-36.00	29.84
351.44	28.16	Н	-71.01	0.25	5.63	-65.63	-36.00	29.63
430.76	27.27	Н	-73.04	0.34	6.90	-66.48	-36.00	30.48
631.04	29.01	Н	-70.50	0.52	7.28	-63.74	-54.00	9.74
730.53	28.61	Н	-71.38	0.59	6.80	-65.16	-36.00	29.16

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

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)						
0.041	-7.44	-7.96	-15.40	-1.08	14.32						
0.316	-10.01	-7.96	-17.97	-9.95	8.02						
0.542	-11.56	-7.96	-19.52	-12.30	7.22						
2.004	-23.24	-3.98	-27.22	-17.98	9.25						
3.682	-27.86	-3.09	-30.95	-20.62	10.33						
5.062	-26.55	-1.25	-27.80	-22.00	5.80						

Remark:

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

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

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)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
89.63	27.65	V	-67.49	0.04	1.26	-66.27	-57.00	9.27
160.46	28.01	V	-65.80	0.06	1.20	-64.66	-57.00	7.66
358.03	28.86	V	-70.41	0.25	6.54	-64.12	-57.00	7.12
531.85	27.45	V	-72.57	0.44	6.66	-66.35	-57.00	9.35
676.81	31.27	V	-68.27	0.55	6.56	-62.26	-57.00	5.26
833.00	29.50	V	-68.68	0.66	6.44	-62.90	-57.00	5.90
135.76	27.56	Н	-65.94	0.05	0.00	-65.99	-57.00	8.99
159.75	28.44	Н	-66.28	0.06	1.10	-65.24	-57.00	8.24
339.62	30.29	Н	-67.44	0.23	5.74	-61.93	-57.00	4.93
539.99	28.03	Н	-71.47	0.45	7.14	-64.78	-57.00	7.78
676.32	29.81	Н	-68.83	0.55	6.56	-62.82	-57.00	5.82
827.20	27.52	Н	-70.99	0.66	6.45	-65.20	-57.00	8.20

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

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.

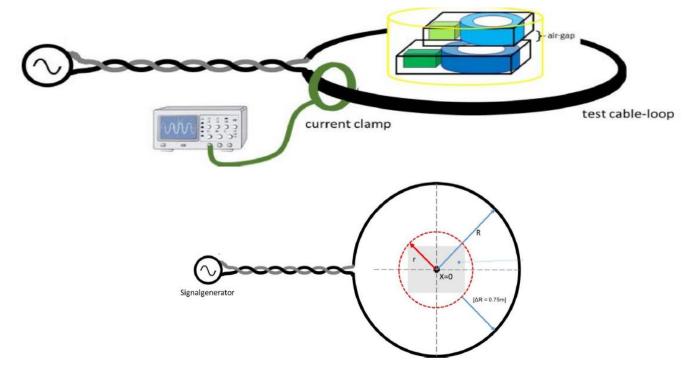


5.5 RECEIVER BLOCKING

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
MXG X-Series Vector Signal Generator	Agilent	N5182B	MY53050647	Aug. 03, 2022	Aug. 02, 2023
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Clamp meter	PROVA	PROVA-11	17200101	Sep. 12, 2022	Sep. 13, 2023

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 $\Delta R = 0.75$ m larger than the maximum dimension r of the EUT.

$$R \ge r + \Delta R.$$

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	f = f _c ± F (see note)	f = f _c ± 10 × F (see note)
	system (see clause 4.3.3)	-	_
Signal level field strength at	72 dBµA/m	72 dBµA/m	82 dBµA/m
the EUT			-
NOTE: F = OFR see clause	4.3.3.		

TEST RESULT

Test Mode: Mode 1	l
-------------------	---

Test F	Frequency(KHz)	Signal level @ EUT	Performance	Result
In-band signal	126.800	72dBuA/m	No function loss	Pass
OOB signal	126.317	72dBuA/m	No function loss	Pass
0 0 1 0.g	127.283	72dBuA/m	No function loss	Pass
Remote-band	121.970	82dBuA/m	No function loss	Pass
signal	131.630	82dBuA/m	No function loss	Pass

Test Mode: Mode 3

Test I	Frequency(KHz)	Signal level @ EUT	Performance	Result
In-band signal	128.400	72dBuA/m	No function loss	Pass
OOB signal	127.677	72dBuA/m	No function loss	Pass
OOB signal	129.123	72dBuA/m	No function loss	Pass
Remote-band	121.170	82dBuA/m	No function loss	Pass
signal	135.630	82dBuA/m	No function loss	Pass



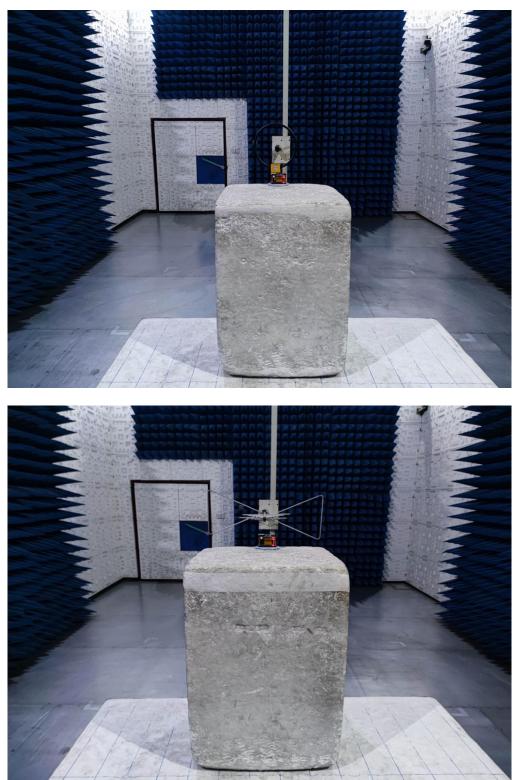
6. INTERPRETATION OF MEASUREMENT RESULTS

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.: AGC05443221111AP01

----END OF REPORT----



Conditions of Issuance of Test Reports

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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.





Health Test Report

Report No.: AGC05443221111EH02

PRODUCT DESIGNATION	: Glass wireless quick charger
BRAND NAME	: N/A
MODEL NAME	: M06761
APPLICANT	: MID OCEAN BRANDS B.V
DATE OF ISSUE	: Nov. 23, 2022
STANDARD(S)	EN IEC 62311:2020 EN 50665:2017
REPORT VERSION	: V1.0
	Global Compliance (Shenzhen) Co., Ltd.
<u>Attestation of (</u>	<u> Global Compliance (Shenzhen) Co., Ltd.</u>





REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 23, 2022	Valid	Initial release



Report No.: AGC05443221111EH02 Page 3 of 13

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1. GENERAL INFORMATION

Applicant	MID OCEAN BRANDS B.V		
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Manufacturer	/ID OCEAN BRANDS B.V		
Address	/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Factory	MID OCEAN BRANDS B.V		
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Product Designation	Glass wireless quick charger		
Brand Name	N/A		
Test Model	MO6761		
Date of receipt of test item	Nov. 11, 2022		
Date of test	Nov. 11, 2022 to Nov. 22, 2022		
Test Result	Pass		

We (AGC), Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the European Standard EN IEC 62311:2020. The results of testing in this report apply to the product/system which was tested only.

Prepared By

Bibo zho

Bibo Zhang (Project Engineer)

Nov. 23, 2022

Reviewed By

Calvin Liu (Reviewer)

Nov. 23, 2022

Approved By

ax 2ra

Max Zhang (Authorized Officer)

Nov. 23, 2022

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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agccert.com

Web: http://www.agccert.com/



2. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

Product Designation	Glass wireless quick charger	
Brand Name	N/A	
Test Model	MO6761	
Hardware Version	V1.0	
Software Version	V1.0	
Operation Frequency	110KHz-205KHz	
Modulation type	ASK	
Antenna Type	Coil Antenna	
Antenna Gain	0dBi	
Power Supply	DC 5V by adapter	
EUT Input/ Output Rating	Input(Type-C): DC 5V/2A, DC 9V/2A Output(Wireless): DC 5V/1A, DC 7.5V/1A, DC 9V/1.1A	
Wireless Charging Output Power	10W	
Adapter Model Name	GS-QC571A	
Adapter Input Supply	AC 110-240V~50/60Hz, 0.8A	
Adapter Output Supply	DC 5V/2.4A, DC 4.5V/5A, DC 5V/4.5A, DC 9V/2A, DC 12V/1.5A	

Note: For more details, please refer to the user's manual of the EUT.



3. EN 62311 RF EXPOSURE MEASUREMENT

3.1 INTRODUCTION

This International Standard applies to electronic and electrical equipment for which no dedicated product- or product family standard regarding human exposure to electromagnetic fields applies.

This generic standard applies to electronic and electrical apparatus for which no dedicated product- or product family standard regarding human exposure to electromagnetic fields applies.

The frequency range covered is 0 Hz to 300 GHz.

The object of this generic standard is to provide assessment methods and criteria to evaluate such equipment against basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields and induced and contact current.

NOTE: This standard is intended to cover both intentional and non-intentional radiators. If the equipment complies with the requirements in another relevant standard, e.g. EN 62479 covering low power equipment, then the requirements of this standard (IEC 62311) are considered to be met and the application of this standard to that equipment is not necessary.



3.2 TEST LIMIT

According to EN IEC 62311:2020, Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz).

Annex F Measurement of E and H field

A commonly used probe size is 100 cm², also the contribution of the three axes X, Y and Z can be evaluated separately.

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μΤ)	Equivalent plane wave power density S _{eq} (W/m²)
0-1 Hz		$3,2 \times 10^{4}$	4×10^4	_
1-8 Hz	10 000	$3,2~\times~10^4/f^2$	$4~\times~10^4/f^2$	
8-25 Hz	10 000	4 000/f	5 000/f	—
0,025-0,8 kHz	250/f	4/f	5/f	_
0,8-3 kHz	250/f	5	6,25	_
3-150 kHz	87	5	6,25	
0,15-1 MHz	87	0,73/f	0,92/f	_
1-10 MHz	87/f ^{1/2}	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	0,0037 f ^{1/2}	$0,0046 \ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

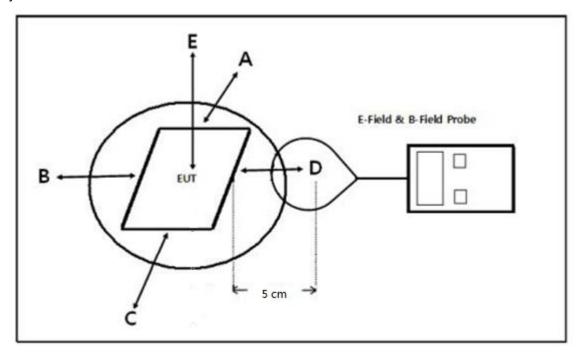
Reference levels for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz, unperturbed rms values)



3.3 EVALUATION METHODS

Measurement of E and H field

A commonly used probe size is 100 cm², also the contribution of the three axes X, Y and Z can be evaluated separately.



Note: Position A: Front of EUT; Position B: Left of EUT; Position C: back of EUT; Position D: Right of EUT; Position E: Top of EUT

Based on the above standard limit, any device with output power below 5A/m cannot produce an exposure exceeding this restriction under the most pessimistic exposure conditions.



4. TEST EQUIPMENT LIST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Broadband Field Meter	WAVECONTROL	SMP2	J-0004	Jun. 08, 2022	Jun. 07, 2023
Probe FHP	WAVECONTROL	WP400	J-0015	Jun. 08, 2022	Jun. 07, 2023

5. EUT OPERATION CONDITION

NO.	TEST MODE DESCRIPTION			
1	Full Load Mode			
2	Half Load Mode			
3	Null Load Mode			
Note: 1. The Mode 1 was the worst case and only the data of the worst case record in this report.				



6. TEST RESULT

Frequency (MHz)	Maximum Radiateo (A/m		Limit (A/m)	Result (Pass/Fail)
110kHz-205kHz	position E	0.051		Pass
	position A	0.034		
	position B	0.028	5	
	position C	0.017		
	position D	0.029		

Since Radiated H-Field at worse case is 0.051A/m which cannot exceed the exempt condition, 5A/m. It is deemed to full fit the requirement of RF exposure basic restrisction specified in EC Council Recommendation (1999/519/EC).

7. CONCLUSION

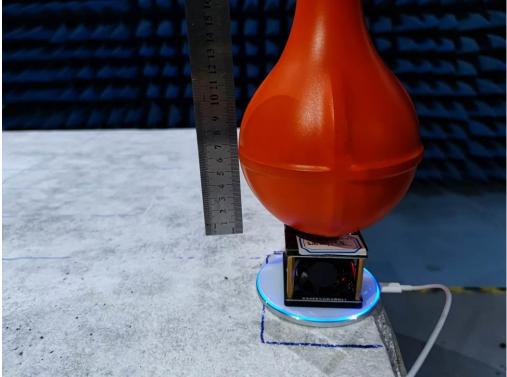
Remark: EUT meets the basic requirements in the standard.



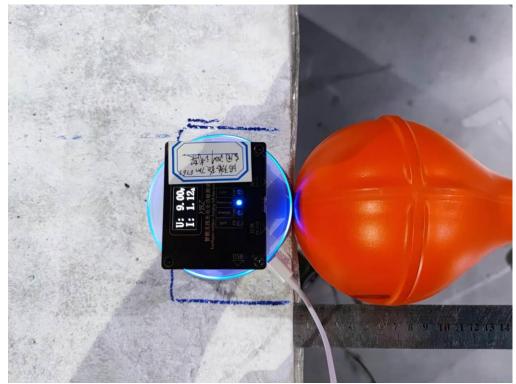
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APPENDIX I: PHOTOGRAPHS OF TEST SETUP

WPT Equipment_Position E



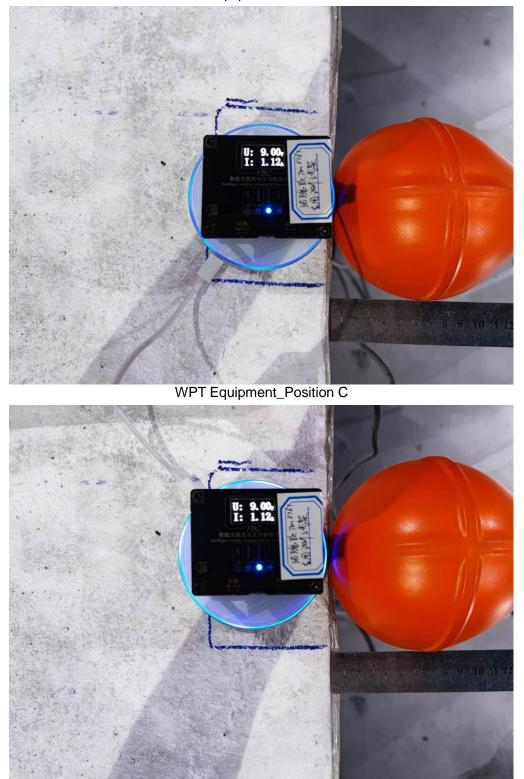
WPT Equipment_Position A





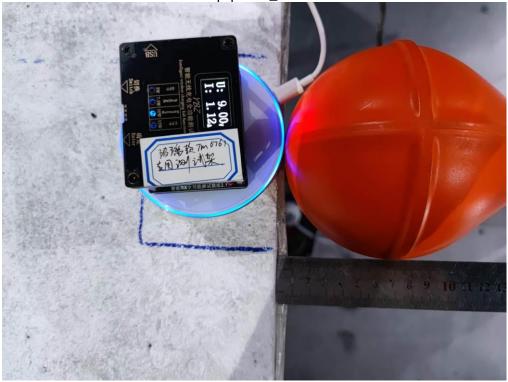
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WPT Equipment_Position B





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WPT Equipment_Position D

---END OF REPORT----



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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

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