
RF Test Report

Report No.: AGC05443241134ER03

PRODUCT DESIGNATION : 3 in 1 wireless charger

BRAND NAME : N/A

TEST MODEL : MO2420

APPLICANT : MID OCEAN BRANDS B.V.

DATE OF ISSUE : Dec. 09, 2024

STANDARD(S) : ETSI EN 300 330 V2.1.1(2017-02)

REPORT VERSION : V1.0

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 09, 2024	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 Name	MID OCEAN BRANDS B.V.
Address	7/F. Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Product Designation	3 in 1 wireless charger
Brand Name	N/A
Test Model	MO2420
Series Model	N/A
Declaration of Difference	N/A
Date of receipt of test item	Nov. 21, 2024
Date of test	Nov. 21, 2024 to Dec. 09, 2024
Test Result	PASS
Condition of Test Sample	Normal
Report Template	AGCRT-EC-SRD/RF

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By



Cici Li
(Project Engineer)

Dec. 09, 2024

Reviewed By



Calvin Liu
(Reviewer)

Dec. 09, 2024

Approved By



Angela Li
Authorized Officer

Dec. 09, 2024

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2. EUT DESCRIPTION

Details of technical specification for WPT refer to the description in follows:

Hardware Version	V1.0
Software Version	V1.0
Permitted Range Of Operating Frequency	148.5 kHz to 5 MHz
Operation Frequency	328kHz
Modulation	ASK
Corrected Amplitude H-field	-29.33dBuA/m
RF Output Power (ERP)	0.0000003mW
Number of Channels:	1 Channel
Antenna Gain	0dBi
Antenna Type:	Coil Antenna
Input Rating	DC 5V, 2A; DC 9V, 2A
Output Rating	1.5W
Receiver category	3
Product Class	1
Equipment type:	WPT systems

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

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3. DESCRIPTION OF TEST MODES

The EUT has been tested under Normal Operation and standby condition.

4. TEST FACILITY

Test Site-1	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. TEST ITEMS AND THE RESULTS

The EUT has been tested according to ETSI EN 300 330 V2.1.1(2017-02).

ETSI EN 300330 V2.1.1(2017-02)	Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
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No	Basic Standard	Test Type	Test Mode	Result
1	ETSI EN 300 330 4.3.1	Permitted range of operating frequencies	TX	Pass
2	ETSI EN 300 330 4.3.2	Operating frequency ranges	TX	Pass
3	ETSI EN 300 330 4.3.3	Modulation bandwidth	TX	Pass
4	ETSI EN 300 330 4.3.4	Transmitter H-field requirements	TX	Pass
5	ETSI EN 300 330 4.3.8	Transmitter radiated spurious domain emission limits < 30 MHz	TX	Pass
6	ETSI EN 300 330 4.3.9	Transmitter radiated spurious domain emission limits > 30 MHz	TX	Pass
7	ETSI EN 300 330 4.4.2	Receiver spurious emissions	RX	Pass
8	ETSI EN 300 330 4.4.3	Adjacent channel selectivity	RX	N/A
9	ETSI EN 300 330 4.4.4	Receiver blocking or desensitization	RX	N/A

Note: 1.N/A means not applicable.

2. According to the standard section 4.4.1, this equipment belongs to other equipment (WPT system), and only has a single working channel, so it is not necessary to meet 4.3.3&4.3.4.

3. The EUT support 9V/12V voltage input and recorded in this report as the worst case.

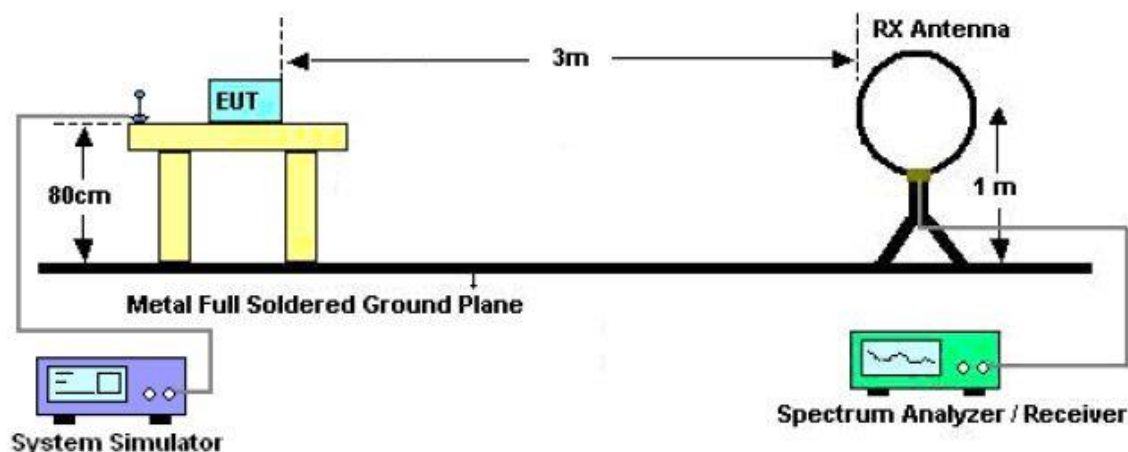
6. ETSI EN 300 330 REQUIREMENT TO TRANSMITTER

6.1 RF H-FIELD (RADIATED)

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESCI	100694	Jun. 02, 2024	Jun. 01, 2025
Amplifier	Schwarzbeck	BBV 9718	9718-205	Jun. 02, 2024	Jun. 01, 2025
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168- D69250	May 11, 2023	May 10, 2025
LOOP ANTENNA	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2026

TEST SETUP:



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TEST LIMITS:

Table 2: H-field limits at 10 m

Frequency range (MHz)	H-field strength limit (H_f) dB μ A/m at 10 m or specified in mW e.r.p.
$0,009 \leq f < 0,090$	72 descending 3 dB/oct above 0,03 MHz or according to note 1 (see note 5)
$0,09 \leq f < 0,119$	42
$0,119 \leq f < 0,135$	66 descending 3 dB/oct above 0,119 MHz or according to note 1 (see notes 3 and 5)
$0,135 \leq f < 0,140$	42
$0,140 \leq f < 0,1485$	37,7
$0,1485 \leq f < 30$	-5 (see note 4)
$0,315 \leq f < 0,600$	-5
$3,155 \leq f < 3,400$	13,5
4,234	9 (see note 9)
4,516	7
$7,400 \leq f < 8,800$	9
$10,2 \leq f < 11,00$	9
$12,5 \leq f \leq 20$	-7
$6,765 \leq f \leq 6,795$	42 (see notes 3 and 7)
$26,957 \leq f \leq 27,283$	42 (see note 3)
$13,410 \leq f \leq 13,553$, $13,567 \leq f \leq 13,710$	9 (see note 6)
$13,110 \leq f \leq 13,410$, $13,710 \leq f \leq 14,010$	-3,5 (see note 6)
$12,660 \leq f \leq 13,110$, $14,010 \leq f \leq 14,460$	-10 (see note 6)
$11,810 \leq f \leq 12,660$, $14,460 \leq f \leq 15,310$	-16 (see note 6)
$13,460 \leq f \leq 13,553$, $13,567 \leq f \leq 13,660$	27 (see note 6)
$13,360 \leq f \leq 13,460$, $13,660 \leq f \leq 13,760$	Linear transition from 27 to -3,5 (see note 6)
$13,110 \leq f \leq 13,360$, $13,760 \leq f \leq 14,010$	-3,5 (see note 6)
$12,660 \leq f \leq 13,110$, $14,010 \leq f \leq 14,460$	-5 (see note 6)
$13,553 \leq f \leq 13,567$	42 (see note 3) or 60 (see notes 2 and 3)
27,095	42

Frequency range (MHz)	H-field strength limit (H_f) dB μ A/m at 10 m or specified in mW e.r.p.
26,995, 27,045, 27,095, 27,145, 27,195 (see note 8)	100 mW
NOTE 1: For the frequency ranges 9 kHz to 135 kHz, the following additional restrictions apply to limits above 42 dBμA/m: - for loop coil antennas with an area $\geq 0,16 \text{ m}^2$ this table and table B.1 with the antenna limitations apply; - for loop coil antennas with an area between $0,05 \text{ m}^2$ and $0,16 \text{ m}^2$ table B.1 applies with a correction factor. The limit is: table value + $10 \times \log(\text{area}/0,16 \text{ m}^2)$; - for loop coil antennas with an area $< 0,05 \text{ m}^2$ the limit is 10 dB below table B.1. NOTE 2: For RFID (incl. NFC) and EAS applications only. NOTE 3: Spectrum mask limit, see annex I. NOTE 4: For further information see annex G. NOTE 5: Limit is 42 dBμA/m for the following spot frequencies: 60 kHz $\pm$ 250 Hz, 66,6 kHz $\pm$ 750 Hz, 75 kHz $\pm$ 250 Hz, 77,5 kHz $\pm$ 250 Hz, and 129,1 kHz $\pm$ 500 Hz. NOTE 6: Only in conjunction with spectrum mask, see annex I. NOTE 7: The frequency range 6,765 MHz - 6,795 MHz is not a harmonised ISM frequency band according article 5.138 of the ITU Radio Regulations [i.13]. NOTE 8: Center frequencies for channelized systems by using $\leq 10 \text{ kHz}$ bandwidth. NOTE 9: The limit is valid in the range 984 kHz - 7 484 kHz for Transmitting only on receipt of a Balise/Eurobalise tele-powering signal from a train.	

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

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

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

The limit at 10 m(H_{10m}) is -5 dB μ A/m

For 326.5kHz:

Owing to the frequency EUT is 0.360MHz, so the C_3 approach to 31.25dB.

Then the limit at 3m(H_{3m}) = $H_{10m} + C_3 = -5 + 31.25 = 26.25$ dB μ A/m.

The H Field Strength shall not exceed the values 26.65dBuA/m 3m Distance under normal test conditions.

- $E(\text{dBuV/m}) = \text{dBuA/m} + 51.5$;
- $\text{ERP (dBm)} = E(\text{dBuV/m}) + 20\lg(D) - 104.8$, D is the measurement distance;
- $\text{ERP} = 10\lg P(\text{mW})$

Correction factor, C_3 , for limits at 3 m distance, dB

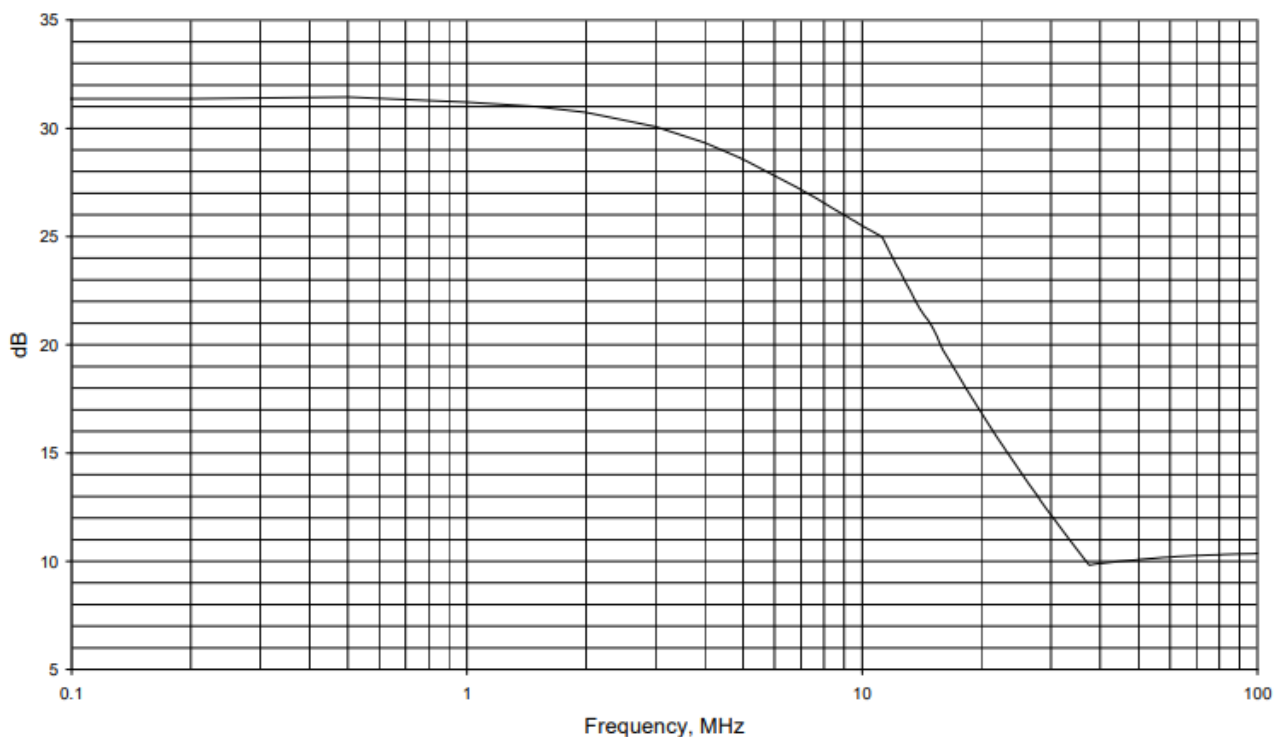


Figure H.2: Conversion factor C_3 versus frequency

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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 clause 5.12.

The EUT operate with modulation under normal and extreme conditions.

TEST RESULTS:

Test Mode: Transmitting
Extreme conditions state

conditions	Test Temp	Test Volt.(V)	Note
TN/VN	25°C	9.0	Worst case
TL/ VL	0°C	8.1	
TH/VL	40°C	8.1	
TL/VH	0°C	9.9	
TH/VH	40°C	9.9	

Frequency	Reading	Corrected Factor	Corrected Amplitude E-field	Corrected Amplitude H-field(3m)	Corrected Amplitude H-field(10m)	Limit (10m)	Result
MHz	dBμV/m	dB	dBμV/m	dBμA/m	dBμA/m	dBμA/m	Pass
0.328	23.42	30.00	53.42	1.92	-29.33	-5	

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.
- (4) $EIRP(dBm) = E(dBuV/m) + 20lg(D) - 104.8$, D is the measurement distance.
 $E(dBuV/m) = dBuA/m + 51.5$, so the $dBuA/m = EIRP(dBm) + 43.7$, $EIRP = 10lgP(mW)$

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6.2 PERMITTED FREQUENCY RANGE AND THE MODULATION BANDWIDTH

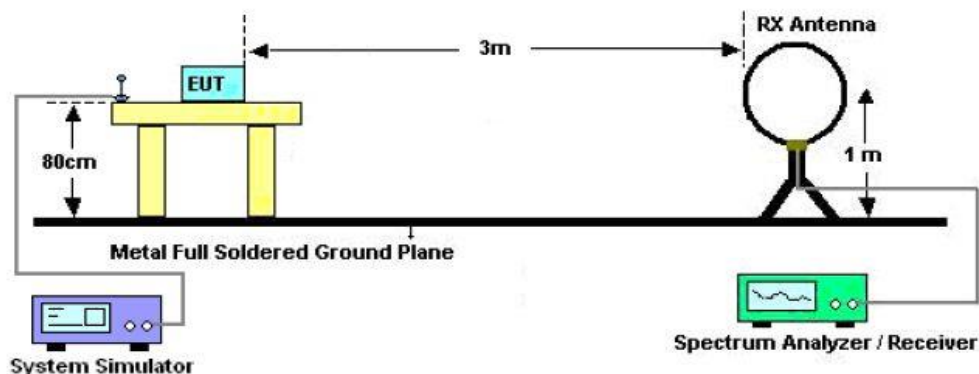
TEST LIMITS

The modulation bandwidth shall be within the assigned frequency band see table 1 or $\pm 7,5\%$ of the carrier frequency whichever is the smallest. For RFID and EAS Systems, the modulation bandwidth shall be within the transmitter emission boundary of figures I.1, I.2, I.3 and I.4. For further information, see CEPT/ERC/REC 70-03 [i.1] or ERC/ECC/CEPT Decisions as implemented through National Radio Interfaces (NRI) and additional NRI as relevant.

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESCI	100694	Jun. 02, 2024	Jun. 01, 2025
Amplifier	Schwarzbeck	BBV 9718	9718-205	Jun. 02, 2024	Jun. 01, 2025
WIDEBAND FREQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
LOOP ANTENNA	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2026

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:300Hz, VBW=1000Hz, Span=2MHz.
- 4). Both normal test condition and extreme test condition applied

Test Limit

Table 1: Short Range Devices within the 9 kHz to 30 MHz permitted frequency bands

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	Frequency Bands/frequencies	Applications
Transmit and Receive	9 kHz to 90 kHz	Inductive devices, Generic use
Transmit and Receive	90 kHz to 119 kHz	Inductive devices, Generic use
Transmit and Receive	119 kHz to 140 kHz	Inductive devices, Generic use
Transmit and Receive	140 kHz to 148,5 kHz	Inductive devices, Generic use
Transmit and Receive	148,5 kHz to 5 MHz	Inductive devices, Generic use
Transmit and Receive	400 kHz to 600 kHz	RFID only
Transmit and Receive	5 MHz to 30 MHz	Inductive devices, Generic use
Transmit and Receive	3 155 kHz to 3 400 kHz	Inductive devices, Generic use
Transmit and Receive	984 kHz to 7 484 kHz (Note 3, Centre frequency is 4 234 kHz)	Inductive devices, Railway applications
Transmit and Receive	4 516 kHz	Inductive devices, Railway applications
Transmit and Receive	6 765 kHz to 6 795 kHz	Inductive devices, Generic use
Transmit and Receive	7 400 kHz to 8 800 kHz	Inductive devices, Generic use
Transmit and Receive	10 200 kHz to 11,000 MHz	Inductive devices, Generic use
Transmit and Receive	11,810 MHz to 15,310 MHz (Centre frequency is 13,56 MHz)	RFID only
Transmit and Receive	12,5 MHz to 20 MHz	Inductive devices, Wireless healthcare
Transmit and Receive	13,553 MHz to 13,567 MHz	Inductive devices, Generic use
Transmit and Receive	26,957 MHz to 27,283 MHz	Inductive devices, Generic use
Transmit and Receive	27,090 MHz to 27,100 MHz	Inductive devices, Railway applications
NOTE 1: In addition, it should be noted that other frequency bands may be available in a country within the frequency range 9 kHz to 30 MHz.		
NOTE 2: On non-harmonised parameters, national administrations may impose certain conditions such as the type of modulation, frequency, channel/frequency separations, maximum transmitter radiated power, duty cycle, and the inclusion of an automatic transmitter shut-off facility, as a condition for the issue of an Individual Rights for use of spectrum or General Authorization, or as a condition for use under "licence exemption" as it is in most cases for Short Range Devices.		
NOTE 3: Transmitting only on receipt of a Balise/Eurobalise tele-powering signal from a train.		

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TEST RESULT

Test Conditions			99% Bandwidth (kHz)	F _L at 99% BW (kHz)	F _H at 99% BW (kHz)	Limit Band (kHz)	Result
Frequency (kHz)	Temperature (°C)	Voltage (V)					
328	25°C	9.0	1.372	325.857	327.146	302~351	Pass
	0°C	8.1	1.254	325.854	327.143		Pass
	40°C	8.1	1.268	325.866	327.137		Pass
	0°C	9.9	1.273	325.861	327.135		Pass
	40°C	9.9	1.268	325.862	327.134		Pass

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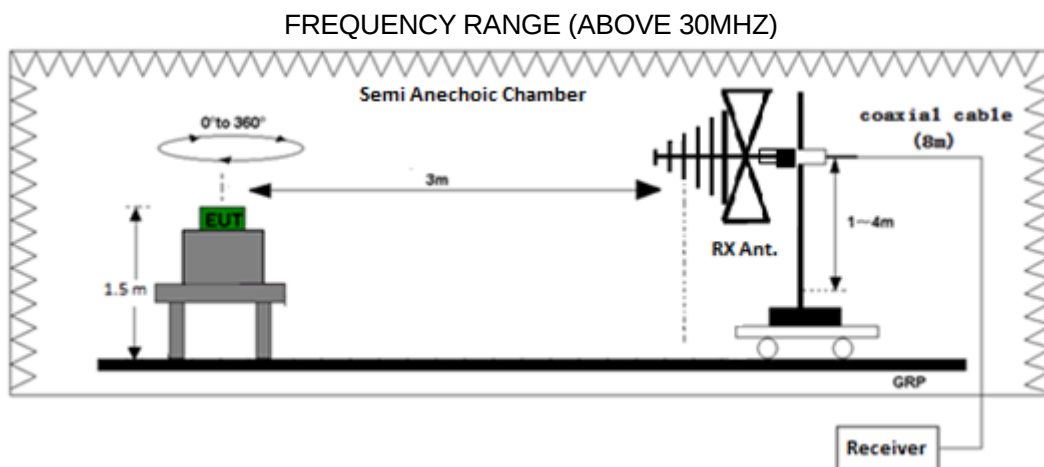
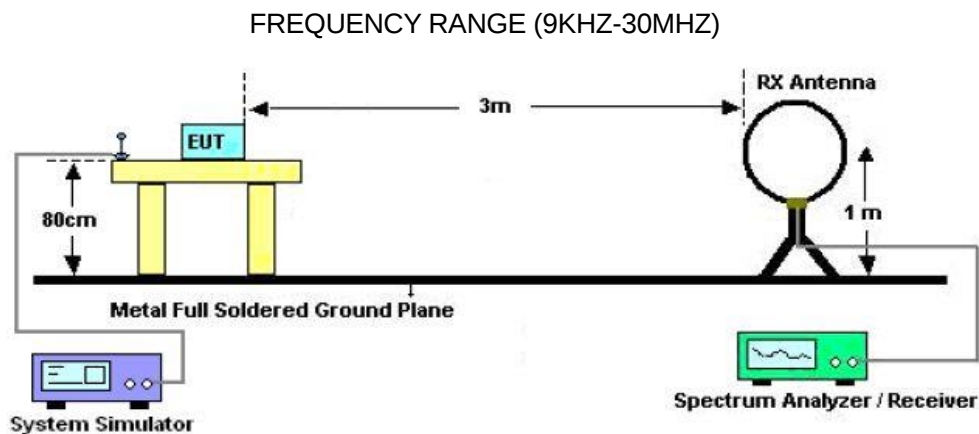
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6.3 SPURIOUS DOMAIN EMISSION

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
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Amplifier	Schwarzbeck	BBV 9718	9718-205	Jun. 02, 2024	Jun. 01, 2025
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
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LOOP ANTENNA	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2026

TEST SETUP:



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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 V2.1.1 clause 5.12

The EUT operate with modulation under normal and extreme conditions.

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

Operating		
Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBμA/m Q.P.)
9 kHz ≤ f < 10 MHz	10	27dB μ A/m at 9 kHz descending 3 dB/oct
10 MHz ≤ f < 30 MHz	10	-3,5 dB μ A/m

Standby		
Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBμA/m Q.P.)
9 kHz ≤ f < 10 MHz	10	5,5 dB μ A/m at 9 kHz descending 3 dB/oct
10 MHz ≤ f < 30 MHz	10	-25 dB μ A/m

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TEST LIMITS & RESULT

FREQUENCY RANGE (9KHZ-30MHZ)

OPERATION MODE					
Frequency	Reading level	Total Factor	Emission level	10M Limit	Margin
(MHz)	(dBμA/m)	(dB)	(dB μA/m)	(dBμA/m)	(dBμA/m)
--	--	--	--	27 dBμA/m at 9KHz descending 3dB/oct(9KHz – 10MHz)	--
--	--	--	--		--
--	--	--	--	-3.5 dBμA/m(10MHz – 30MHz)	--
--	--	--	--		--

STANDBY MODE					
Frequency	Reading level	Total Factor	Emission level	10M Limit	Margin
(MHz)	(dBμA/m)	(dB)	(dB μA/m)	(dBμA/m)	(dBμA/m)
--	--	--	--	5.5 dBμA/m at 9KHz descending 3dB/oct (9KHz – 10MHz)	--
--	--	--	--		--
--	--	--	--	-25 dBμA/m (10MHz – 30MHz)	--
--	--	--	--		--

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.

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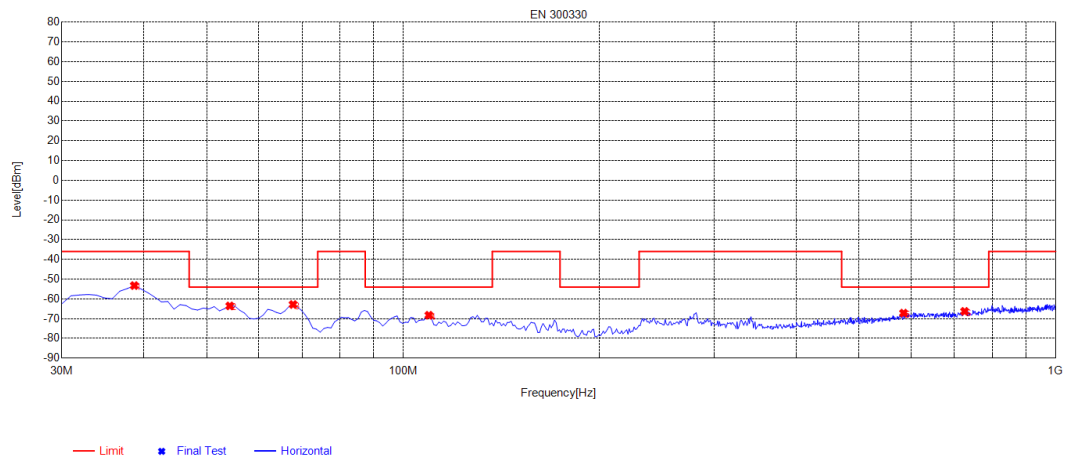
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FREQUENCY RANGE (ABOVE 30MHZ)

EUT OPERATION MODE – HORIZONTAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	38.73	-82.68	-53.27	-36.00	17.27	29.41	230	Horizontal
2	54.25	-91.25	-63.55	-54.00	9.55	27.70	20	Horizontal
3	67.83	-87.86	-62.84	-54.00	8.84	25.02	170	Horizontal
4	109.54	-88.90	-68.28	-54.00	14.28	20.62	170	Horizontal
5	584.84	-101.42	-67.19	-54.00	13.19	34.23	60	Horizontal
6	725.49	-101.65	-66.31	-54.00	12.31	35.34	100	Horizontal

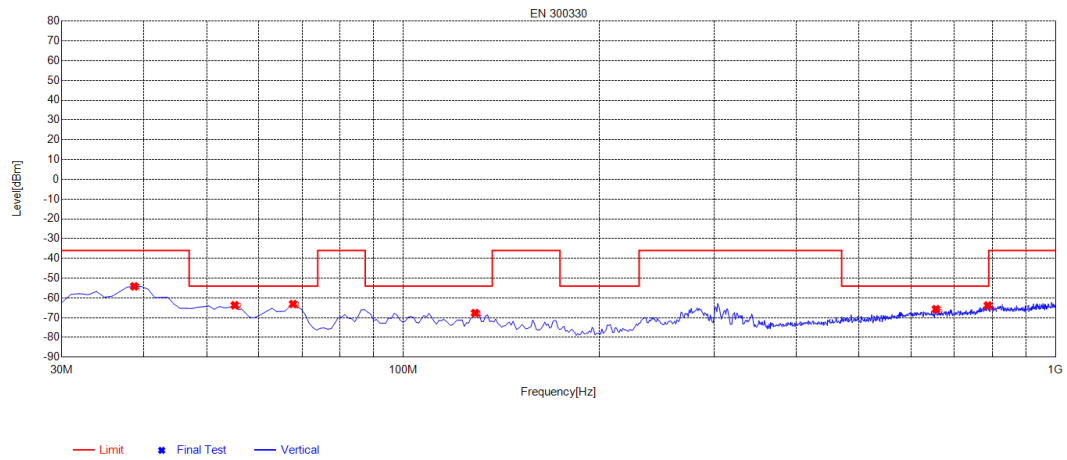
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EUT OPERATION MODE – VERTICAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	38.73	-83.57	-54.16	-36.00	18.16	29.41	140	Vertical
2	55.22	-91.18	-63.71	-54.00	9.71	27.47	250	Vertical
3	67.83	-88.14	-63.12	-54.00	9.12	25.02	80	Vertical
4	128.94	-92.40	-67.68	-54.00	13.68	24.72	20	Vertical
5	655.65	-100.46	-65.71	-54.00	11.71	34.75	220	Vertical
6	787.57	-101.04	-63.84	-54.00	9.84	37.20	50	Vertical

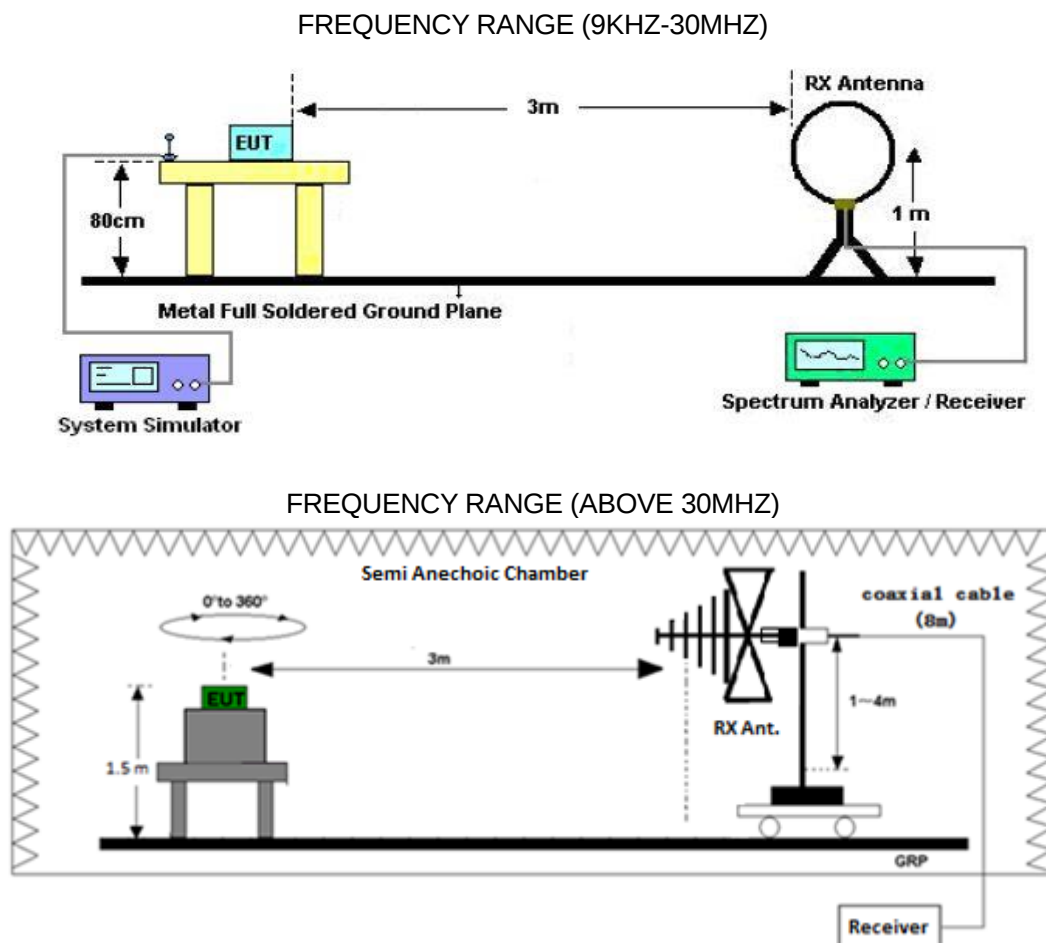
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6.4 ETSI EN 300 330 Subclasses 4.4.2: Receiver spurious radiation

MEASUREMENT EQUIPMENT USED:

NAME OF EQUIPMENT	MANUFACTURER	MODEL	S/N	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESCI	100694	Jun. 02, 2024	Jun. 01, 2025
Amplifier	Schwarzbeck	BBV 9718	9718-205	Jun. 02, 2024	Jun. 01, 2025
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168- D69250	May 11, 2023	May 10, 2025
LOOP ANTENNA	ZHINAN	ZN30900C	18051	Mar. 05, 2024	Mar. 04, 2026

TEST SETUP:



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TEST RESULT AND LIMIT

FREQUENCY RANGE (9KHZ-30MHZ)

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBμA/m Q.P.)
9 kHz ≤ f < 10 MHz	10	5.5dB μ A/m at 9 kHz descending 3 dB/oct
10 MHz ≤ f < 30 MHz	10	-25 dB μ A/m

RECEIVER MODE

Frequency (MHz)	Reading level (dBμA/m)	Total Factor (dB)	Emission level (dBμA/m)	10M Limit (dBμA/m)	Margin (dBμA/m)
--	--	--	--	5.5 dBuA/m at 9KHz descending 3dB/oct (9KHz – 10MHz)	--
--	--	--	--	-25 dBuA/m (10MHz – 30MHz)	--
--	--	--	--		--
--	--	--	--		--

Remark:

- Corrected Power (dBm) = Total Factor + Reading Level
- 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.

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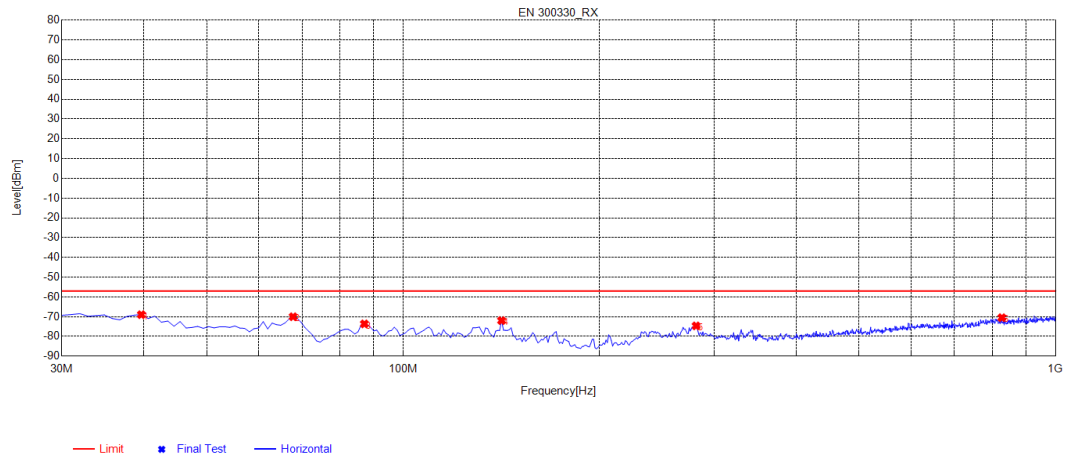
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FREQUENCY RANGE (ABOVE 30MHZ)

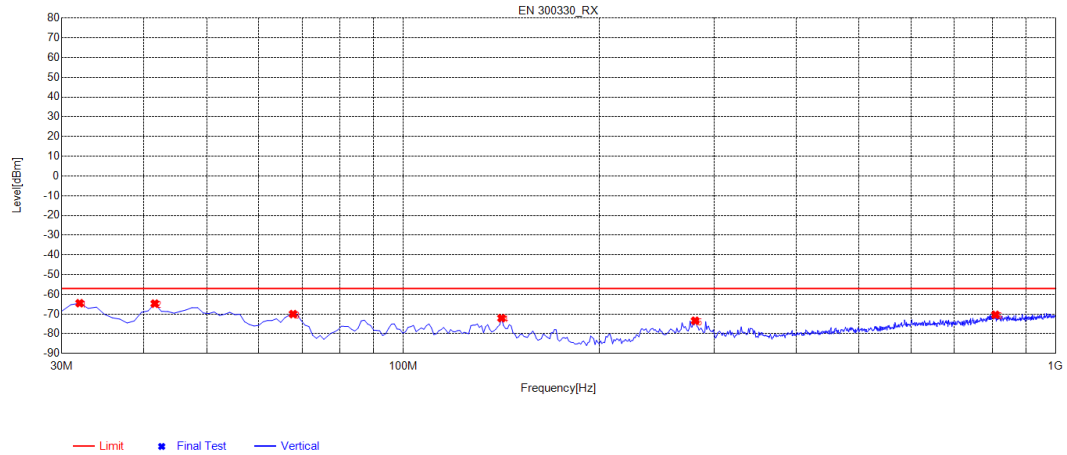
EUT OPERATION MODE – HORIZONTAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	39.7	-98.45	-69.00	-57.00	12.00	29.45	190	Horizontal
2	67.83	-95.06	-70.04	-57.00	13.04	25.02	20	Horizontal
3	87.23	-96.52	-73.66	-57.00	16.66	22.86	240	Horizontal
4	141.55	-99.17	-71.99	-57.00	14.99	27.18	90	Horizontal
5	281.23	-102.92	-74.67	-57.00	17.67	28.25	40	Horizontal
6	827.34	-107.91	-70.52	-57.00	13.52	37.39	200	Horizontal

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EUT OPERATION MODE – VERTICAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	31.94	-93.65	-64.52	-57.00	7.52	29.13	340	Vertical
2	41.64	-94.06	-64.73	-57.00	7.73	29.33	330	Vertical
3	67.83	-95.06	-70.04	-57.00	13.04	25.02	70	Vertical
4	141.55	-99.26	-72.08	-57.00	15.08	27.18	0	Vertical
5	280.26	-101.68	-73.41	-57.00	16.41	28.27	320	Vertical
6	808.91	-108.01	-70.40	-57.00	13.40	37.61	150	Vertical

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7. ETSI EN 300 330 V2.1.1: INTERPRETATION OF MEASUREMENT RESULTS

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

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

P.S. Uncertainty figures are valid to confidence level of 95% calculated according to the methods described in the ETR 028[3].

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APPENDIX I PHOTOGRAPHS OF TEST SETUP

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APPENDIX II PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC05443241134AP01

----END OF REPORT----

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Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the “Company”) solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the “Clients”).
2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
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.

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Radio Test Report

Report No.: AGC05443241134ER02

PRODUCT DESIGNATION : 3 in 1 wireless charger
BRAND NAME : N/A
MODEL NAME : MO2420
APPLICANT : MID OCEAN BRANDS B.V.
DATE OF ISSUE : Dec. 09, 2024
STANDARD(S) : ETSI EN 303 417 V1.1.1 (2017-09)
REPORT VERSION : V1.0

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 09, 2024	Valid	Initial Release

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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	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	3 in 1 wireless charger
Brand Name	N/A
Test Model	MO2420
Series Model(s)	N/A
Difference Description	N/A
Date of receipt of test item	Nov. 21, 2024
Date of Test	Nov. 21, 2024 to Dec. 09, 2024
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-EU-WPT-V1

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By



Cici Li
(Project Engineer)

Dec. 09, 2024

Reviewed By



Calvin Liu
(Reviewer)

Dec. 09, 2024

Approved By



Angela Li
Authorized Officer

Dec. 09, 2024

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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. Product Information

2.1 Product Technical Description

Equipment Type	WPT System
Permitted Range of Operating Frequency	☐ WPT Band 1: 19~21kHz
	☐ WPT Band 2: 59~61kHz
	☐ WPT Band 3: 79~90kHz
	☒ WPT Band 4: 100~119kHz,119~140kHz,140~148.5kHz
	☒ WPT Band 4: 148.5-300kHz
	☐ WPT Band 5: 6765kHz~6795kHz
Operation Frequency	110kHz-205kHz
Hardware Version	V1.0
Software Version	V1.0
Modulation Type	ASK
Corrected Amplitude H-field@10m	8.14dBμA/m (Max.)
Antenna Designation	Coil Antenna
Antenna Gain	0dBi
EUT Input Rating	DC 5V, 2A; DC 9V, 2A
Wireless Charging Output Power	Wireless Output of charging pad: 15W Max Wireless Output for AirPods: 5W Max Wireless Output for Apple Watch: 1.5W Max

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

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2.2 Objective

Perform Radio Spectrum tests for CE Marking according to the provisions of article 3.2 of the Radio Equipment Directive (2014/53/EU) for the WPT function of the EUT.

2.3 Test Items and The Results

The tests were performed according to following standards:

ETSI EN 303 417 V1.1.1 (2017-09)	Wireless power transmission systems, using technologies other than radio frequency beam in the 19-21kHz,59-61kHz,79-90kHz,100-300 kHz, 6765-6795kHz ranges; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
-------------------------------------	--

Test items and the results are as bellow:

No.	Test Item	Standard Require	Condition	Result
Harmonised Standard ETSI EN 303 417				
1	Permitted range of Operating Frequencies	sub-clause 4.3.2	/	Pass
2	Operating Frequency Ranges	sub-clause 4.3.3	/	Pass
3	H-field Requirements	sub-clause 4.3.4	/	Pass
4	Transmitter Spurious Emissions	sub-clause 4.3.5	/	Pass
5	Transmitter Out of Band (OOB) Emissions	sub-clause 4.3.6	/	Pass
6	WPT System Unwanted Conducted Emissions	sub-clause 4.3.7	Only for equipment which has a cable between the off board power supply and the primary coil which is longer than 3 m	N/A
7	Receiver Blocking	sub-clause 4.4.2	Only for Mode1, Mode2 and Mode3 (see Table 2)	Pass

Note: N/A means not applicable. This equipment does not meet the above test item evaluation conditions, so it is not applicable.

2.3 Overview of Operational Modes within a WPT System

EN 303 417 Clauses 4.2.3 Table 2: Overview of operational modes within a WPT system					
Operational Mode	Set-up	Function of base station	Function of mobile device	Test Scenario	Conformance Requirements
Mode 1: base station in stand-by, idle mode	Single device	TX	Not applicable	Single radiation test (TX) with the base station/charging pad. The test set-up as described in clause 6.1.2 shall be used.	- Operating frequency range (clause 4.3.3) - H-Field emission (clause 4.3.4) - TX spurious (clauses 4.3.5, 4.3.6 and 4.3.7) - Performance criteria test (RX test) (clause 4.4)
Mode 2: Communication before charging, adjustment charging mode / position	In combination	TX and RX	TX and RX	Specific test setup, declared by the manufacturer. Manufacturer shall declare the maximal distance between base station and mobile device the WPT system is able to communicate (distance D). The test setup- up shall be performed with the largest communication distance. The test set-up as described in clause 6.1.3 shall be used.	- Operating frequency range (clause 4.3.3) - H-Field emission (clause 4.3.4) - TX spurious (clauses 4.3.5, 4.3.6 and 4.3.7) - Wanted performance criteria test (RX test) (clause 4.4)
Mode 3: Communication	WPT system alignment	TX and RX	TX and RX	- Worst case alignment - Both tests can be performed within one set-up, worst-case alignment. - The test set-up as described in clause 6.1.4 shall be used.	- Operating frequency range (clause 4.3.3) - H-Field emission (clause 4.3.4) - TX spurious (clauses 4.3.5, 4.3.6 and 4.3.7) - Wanted performance criteria test (RX test) (clause 4.4)
Mode 4: energy transmission	WPT system alignment	TX and RX	TX and RX		

2.4 Description of Test Modes

No.	Test Mode Description	Test Channel		
		Lowest	Middle	Highest
1	base station in stand-by, idle mode	/		
2	Communication before charging, adjustment charging mode / position	/	/	/
3	Communication	146.1kHz		
4	Energy transmission	111.6kHz	146.3kHz	203.6kHz

Note:

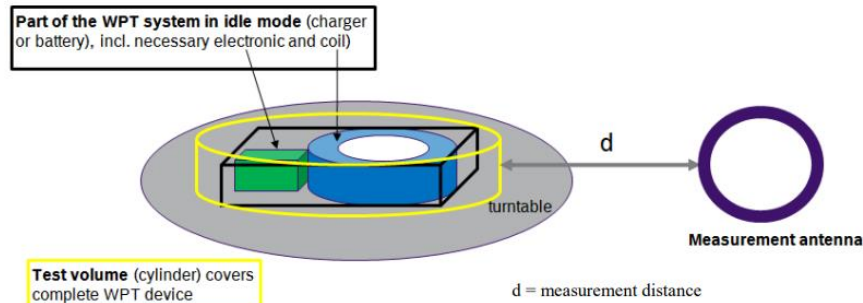
- During the initial establishment of the charging mode (mode 2), no or very low emission occur (below the sensitivity level of the test set-up), so the mode 2 can be assumed as irrelevant for the test.
- Mode 1 is only for base station function equipment and is not taken into consideration
- Mode 3 and mode 4 have been performed within one set-up, worst-case alignment.
- The communication frequency 146.1 kHz corresponds to the maximum field strength.

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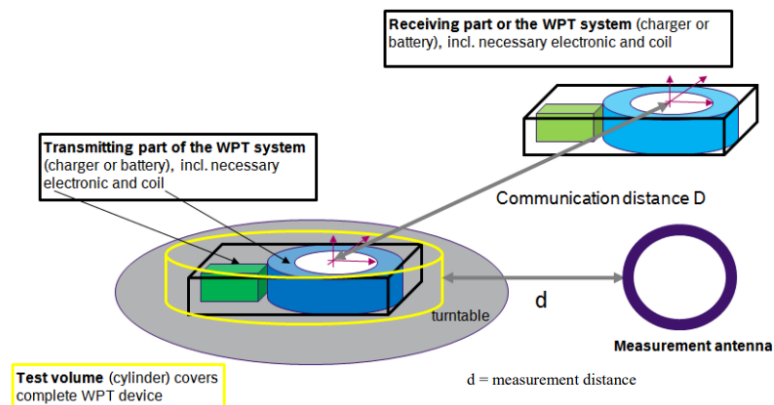
3. Setup of Equipment Under Test

3.1 Setup Configuration of EUT

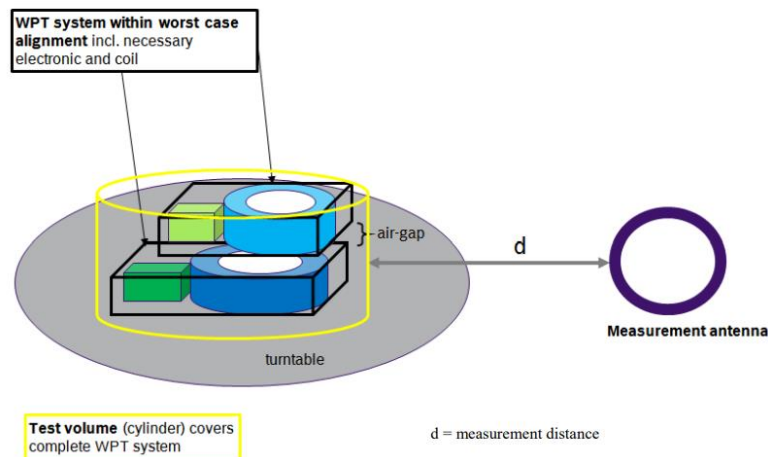
◆ Mode 1: Idle Mode



◆ Mode 2: Charging Adjustment



◆ Mode 3 and Mode 4: Power Transmission Arrangement



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3.2 Support Equipment

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

Whether support unit is used?				
Yes				
Item	Equipment	Manufacturer	Model No.	Specification
1	Wireless Charging Load	HUAWEI	N/A	--
2	--	--	--	--
3	--	--	--	--

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4. Test Environment

4.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

4.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories.)

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842(CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

4.3 Environmental Conditions

Normal Condition	VN=nominal Voltage	DC 9.0V
	TN=normal Temperature	25 °C
Extreme Condition	VL=lower Voltage	DC 8.1V
	TL=lower Temperature	-20 °C
	VH=higher Voltage	DC 9.9V
	TH=higher Temperature	-40 °C

Note: The maximum temperature of 40 is not a standard requirement and is measured according to the maximum service temperature stated by the manufacturer.

4.4 Measurement Uncertainty

Test Items	Measurement Uncertainty
Frequency error	$\pm 1 \times 10^{-7}$
Transmitter power conducted	$\pm 0.75\text{dB}$
Maximum Frequency Deviation: Within 300Hz and 6KHz of Audio Frequency Within 6KHz and 25KHz of Audio Frequency	$\pm 5\%$ $\pm 3\text{dB}$
Adjacent channel power	$\pm 3\text{dB}$
Conducted Emission of Transmitter, Valid Up to 12.75GHz	$\pm 4\text{dB}$
Conducted Emissions of Receivers	$\pm 3\text{dB}$
Radiated Emission of Transmitter, Valid Up to 12.75GHz	$\pm 6\text{dB}$

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

4.5 List of Equipment Used

● RF Conducted Test System							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☒	AGC-ER-E086	Spectrum Analyzer	KEYSIGHT	N9020A	MY53300860	2024-05-23	2025-05-22
☒	AGC-EM-E002	Wireless Connectivity Tester	HP	8920B	US35010106	2024-05-23	2025-05-22
☒	AGC-ER-E059	Signal Generator	Agilent	N5182B	MY53050647	2024-02-01	2025-01-31
☒	AGC-ER-E037	Signal Generator	Agilent	N5182A	MY50140530	2024-05-23	2025-05-22
☒	AGC-ER-E075	Small Environmental Tester	SH-242	ESPEC	93008290	2024-08-02	2026-07-23
☒	AGC-EM-A007	30dB Attenuator	Weinachel	58-30-33	ML030	2023-06-01	2025-05-31
☒	AGC-ER-A004	Power splitter	Agilent	1167B	/	2023-06-01	2025-05-31
☒	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A
☒	N/A	RF Connection Cable	N/A	2#	N/A	Each time	N/A

● Radiated Spurious Emission& RF Conducted Test							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☐	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2024-02-01	2025-01-31
☒	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2024-05-24	2025-05-23
☒	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2024-05-28	2025-05-27
☒	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10
☒	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2024-03-31	2025-03-30
☒	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2024-08-03	2026-07-23
☒	AGC-EM-A088	UHF Filter	N/A	N/A	N/A	2024-05-23	2025-05-22
☒	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	N/A	N/A

● Test Software					
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information
☒	AGC-EM-S011	RSE Test System	Tonscend	TS+-Ver2.1(JS36-RSE)	4.0.0.0

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5. ETSI EN 303 417 Requirements for Transmitter and Receiver

5.1 Operating Frequency Ranges and Permitted Range of Operating Frequencies

Test Limit

The permitted range of operating frequency range(s) for intentional emissions shall be within 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz,

Test Description

- ◆ The operating frequency range is the frequency range over which the WPT system is intentionally transmitting (all operational modes, see clause 4.2.3, Table 2).
- ◆ The operating frequency range(s) of the WPT system are determined by the lowest (f_L) and highest frequency (f_H) as occupied by the power envelope.
- ◆ The WPT system could have more than one operating frequency range. For a single frequency systems the OFR is equal to the occupied bandwidth (OBW) of the WPT system.
- ◆ For multi-frequency systems the OFR is described in Figures 2 and 3.

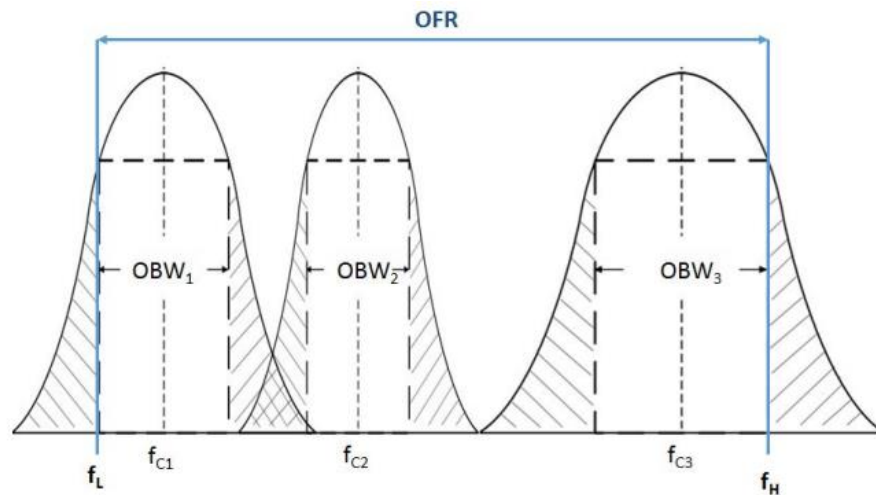


Figure 2: OFR of a multi - frequency WPT system within one frequency range of Table 2 and within one WPT system cycle time

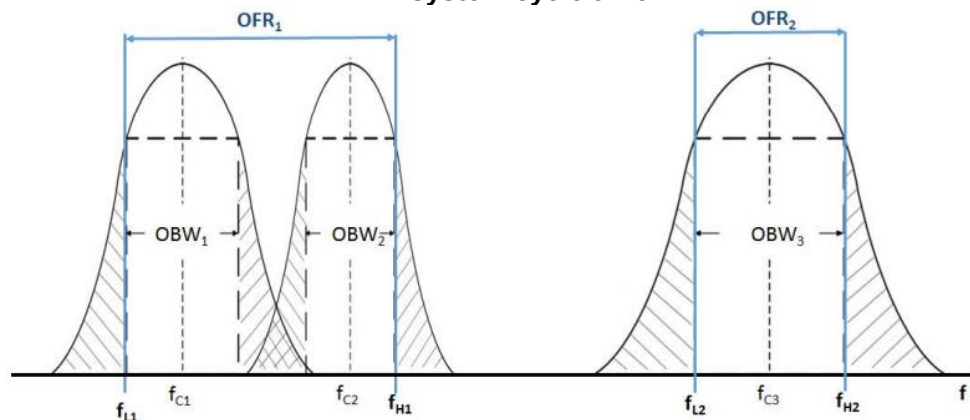
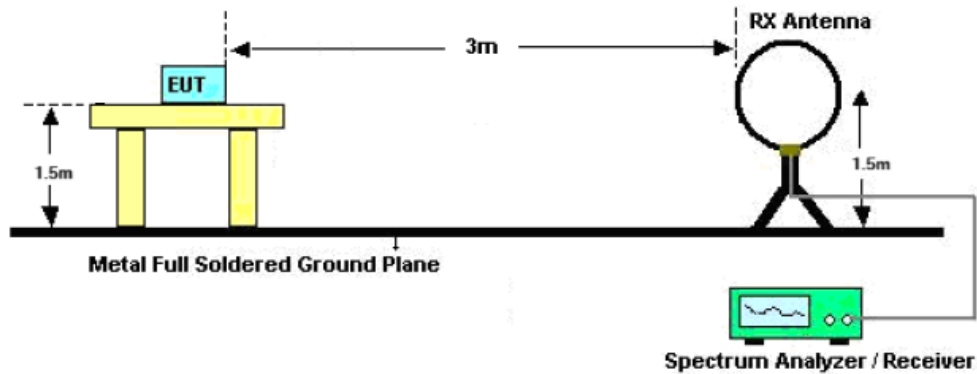


Figure 3: OFR of a multi - frequency WPT system within two frequency ranges of Table 2 and within one WPT system cycle time

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Test Setup



Test Procedure

1. The EUT was placed on a turn table which is 1.5m 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, f_H is the frequency of the upper marker resulting from the OFR, f_L is the frequency of the lower marker resulting from the OFR.
4. Both normal test condition and extreme test condition applied

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Test Result

☒ Test Mode: Mode 3

Frequency (kHz)	Test Conditions		99% Bandwidth (kHz)	F _L at 99% BW (kHz)	F _H at 99% BW (kHz)	Limit Band (kHz)	Result
	Temperature (°C)	Voltage (V)					
146.1	-20	4.20	0.874	145.662	146.536	100~300	Pass
		3.15	0.878	145.662	146.539		Pass
	25	4.20	0.882	145.659	146.541		Pass
	50	3.15	0.877	145.661	146.539		Pass
		4.20	0.878	145.663	146.541		Pass

☒ Test Mode: Mode 4

Frequency Range (kHz)	Test Conditions		Lower Frequency (kHz)	Upper Frequency (kHz)	Limit Band (kHz)
	Temperature (°C)	Voltage (V)			
111.6-203.9	-20	4.20	111.204	204.040	100~300
		3.15	111.205	204.039	
	25	4.20	111.201	204.041	
	50	3.15	111.202	204.034	
		4.20	111.203	204.036	
OFR	92.840kHz				
Result	Pass				

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5.2 Transmitter H-Field Requirements

Test Limit

- The H-field limits are provided in Table 3.
- They have been specified for control of any radiated emissions within the OFR originating from the WPT system (power transmission and accompanying data communication).
- The H-field limits in Table 3 are EU wide harmonised according to EC Decision 2013/752/EU [i.2]. Further information is available in CEPT/ERC/REC 70-03 [i.1].

Table 3: H-field limits

Frequency range [MHz]	H-field strength limit [dBμA/m at 10 m]	Comments
$0,019 \leq f < 0,021$	72	
$0,059 \leq f < 0,061$	69,1 descending 10 dB/dec above 0,059 MHz	See note 1
$0,079 \leq f < 0,090$	67,8 descending 10 dB/dec above 0,079 MHz	See note 2
$0,100 \leq f < 0,119$	42	
$0,119 \leq f < 0,135$	66 descending 10 dB/dec above 0,119 MHz	See note 1
$0,135 \leq f < 0,140$	42	
$0,140 \leq f < 0,1485$	37,7	
$0,1485 \leq f < 0,30$	-5	
$6,765 \leq f < 6,795$	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 H-field limit in dBμA/m at 3 m, H_{3m} , is determined by the following equation:

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

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.

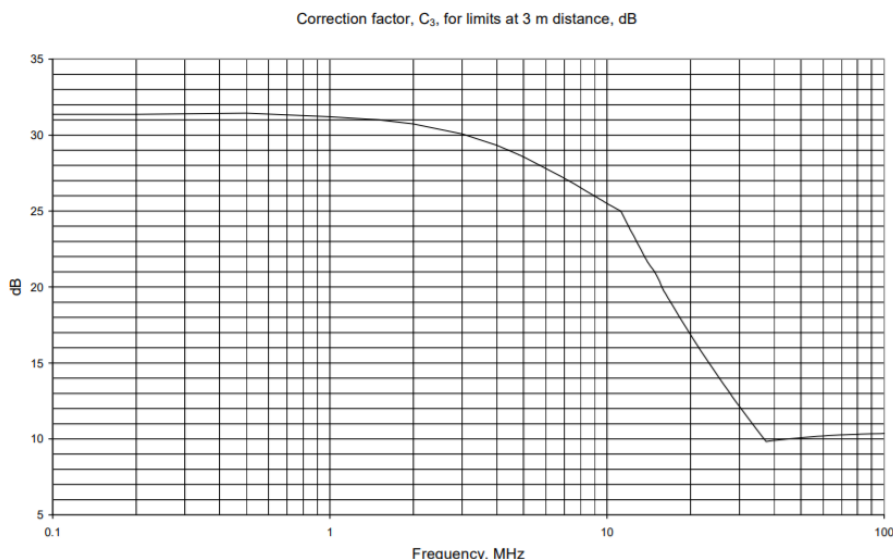
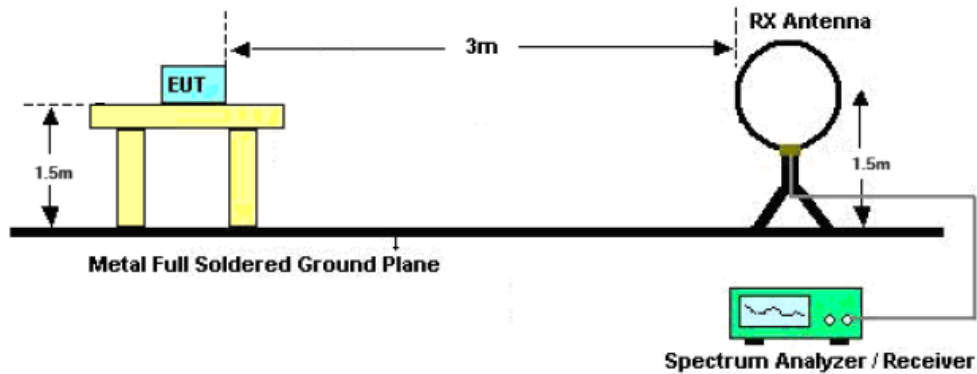


Figure H.2: Conversion factor C_3 versus frequency

- $E(\text{dB}\mu\text{V/m}) = \text{dB}\mu\text{A/m} + 51.5$;
- $\text{ERP (dBm)} = E(\text{dB}\mu\text{V/m}) + 20\lg(D) - 104.8$, D is the measurement distance;
- $\text{ERP} = 10\lg P(\text{mW})$

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Test Setup



Test Procedure

1. 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.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The H-field is measured with a shielded loop antenna connected to a measurement receiver.
4. The measuring bandwidth and detector type of the measurement receiver shall be in accordance with EN 300 330 V2.1.1 clause 5.12.
5. The EUT operate with modulation under normal and extreme conditions.

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Test Result

Test conditions	Test Temp.	Test Volt.	Note
TN/VN	25°C	9.0V	Worst case
TL/ VL	-10°C	9.9V	
TH/ML	40°C	9.9V	
TL/VH	-10°C	8.1V	
TH/VH	40°C	8.1V	

☒ Test Mode: Mode 3

Frequency (kHz)	Reading (dBμA/m)	Factor (dB)	Field Strength (dBμV/m@3m)	Field Strength (dBμA/m@3m)	Calculated (dBμA/m@10m)	Limit at 10m (dBμA/m@10m)	Result
146.1	63.23	27.15	90.38	38.88	7.68	37.70	Pass

☒ Test Mode: Mode 4

Frequency (kHz)	Reading (dBμA/m)	Factor (dB)	E-Field Strength (dBμV/m@3m)	H-Field Strength (dBμA/m@3m)	Calculated (dBμA/m@10m)	Limit at 10m (dBμA/m@10m)	Result
111.6	62.14	27.15	89.29	37.79	6.59	42.00	Pass
146.3	63.69	27.15	90.84	39.34	8.14	37.70	Pass
203.6	63.11	27.15	90.26	38.76	7.56	-5.00	Pass

Remark:

1. Field Strength at 3m(dBμA/m) = Reading Level + Corrected Factor
2. Calculated at 10m(dBμA/m) = Field Strength at 3m(dBμA/m)-31.2dB
3. For the calculated method, please refer to Annex F at EN 300330.

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5.3 Transmitter Out of Band (OOB) Emissions

Test Limit

The OOB limits are visualized in Figures 4 and 5; they are descending from the intentional limits from Table 3 at f_H/f_L with 10 dB/decade.

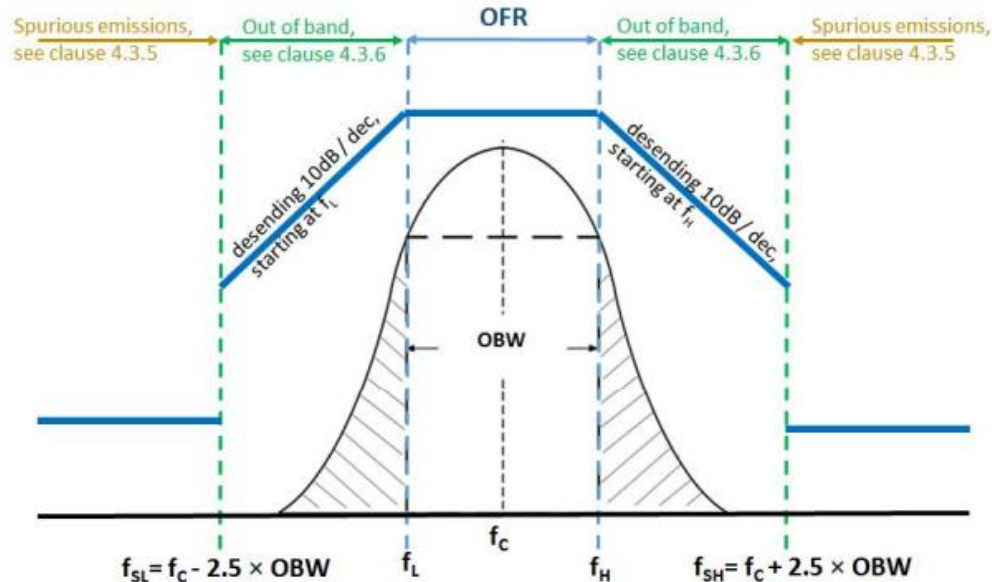


Figure 4: Out of band and spurious domain of a single frequency WPT system

The transmitter spurious emissions for a multi frequency system (within one WPT frequency range from Table 2) are to be considered in frequency ranges defined in Figure 5 ($f < f_{SL}$ and $f > f_{SH}$)

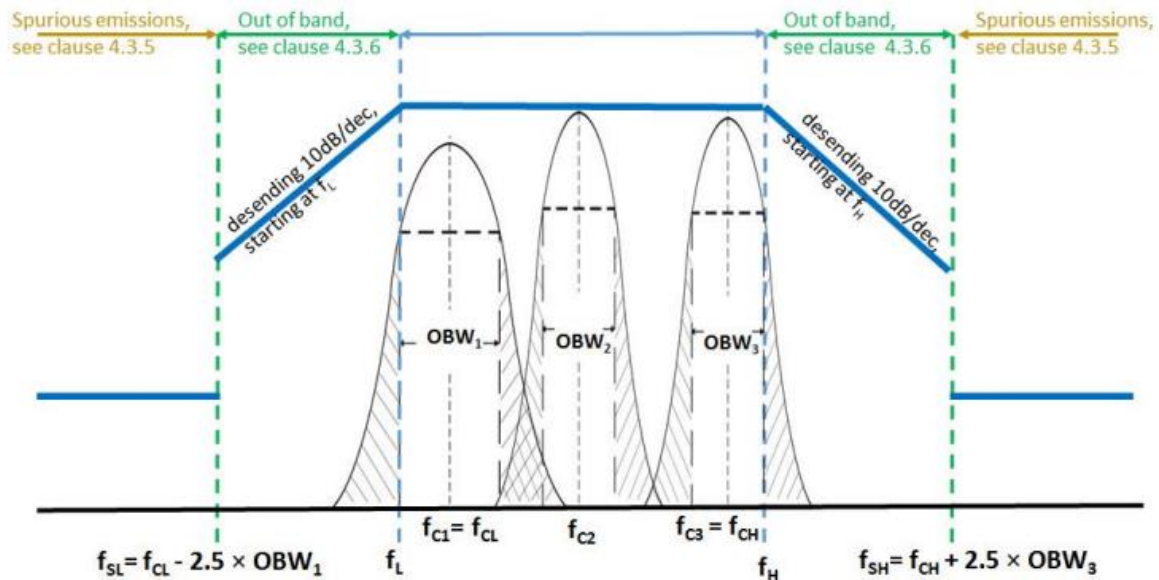
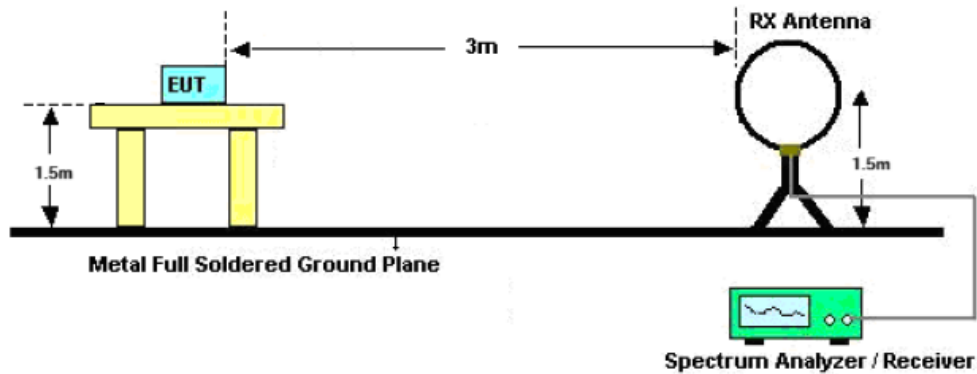


Figure 5: Out of band and spurious domain of a multi - frequency system (during one WPT system cycle time)

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Test Setup



Test Procedure

1. The EUT was placed on a turn table which is 1.5m 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, f_H is the frequency of the upper marker resulting from the OFR, f_L is the frequency of the lower marker resulting from the OFR.
4. Both normal test condition and extreme test condition applied

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Test Result

☒ Test Mode: Mode 3

Test Frequency (kHz)	Frequency Range (kHz)		Maximum level @10m (dBμA/m)	Limit @ 10m (dBμA/m)	Result
146.1	$f_{SL}-f_L$	143.895 - 145.659	Less than -1.48	See figure 4	Pass
	f_L	145.659	-1.48	37.70	Pass
	f_H	146.541	-2.00	37.70	Pass
	f_H-f_{SH}	146.541 - 148.305	Less than -2	See figure 4	Pass

☒ Test Mode: Mode 4

Test Frequency (kHz)	Frequency Range (kHz)		Maximum level @10m (dBμA/m)	Limit @ 10m (dBμA/m)	Result
111.6-203.9	$f_{SL}-f_L$	109.605 - 111.201	Less than -2.57	See figure 4	Pass
	f_L	111.201	-2.57	42.00	Pass
	f_H	204.041	-2.12	-5.00	Pass
	f_H-f_{SH}	204.041 - 205.803	Less than -2.12	See figure 4	Pass

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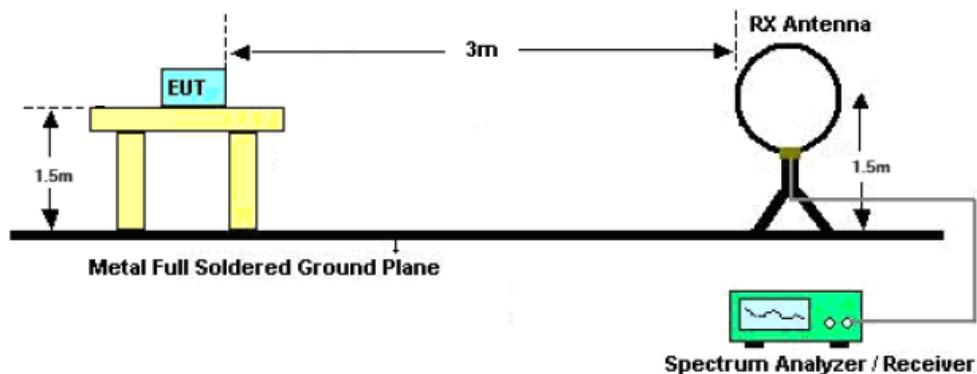
5.4 Transmitter Spurious Emissions (Frequency Below 30MHz)

Test Limit

Operating Mode		
Frequency Range	Distance	Maximum Field Strength Limit
$9 \text{ kHz} \leq f < 10 \text{ MHz}$	10m	27dB μ A/m at 9 kHz descending 3 dB/oct
$10 \text{ MHz} \leq f < 30 \text{ MHz}$	10m	-3.5 dB μ A/m
Stand-by Mode		
$9 \text{ kHz} \leq f < 10 \text{ MHz}$	10m	5.5dB μ A/m at 9 kHz descending 3 dB/oct
$10 \text{ MHz} \leq f < 30 \text{ MHz}$	10m	-25 dB μ A/m

Note: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2.

Test Setup



Test Procedure

- ◆ For test method of frequency range (9 kHz-30MHz)
- 1. 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.
- 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 3. The H-field is measured with a shielded loop antenna connected to a measurement receiver.
- 4. The measuring bandwidth and detector type of the measurement receiver shall be in accordance with EN 300 330 V2.1.1 clause 5.12

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Test Result

☒ Test Mode: Mode 3 (Operating Mode: Face)

Transmitter Spurious Emissions for 9kHz to 30MHz							
Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	E-Field Strength@3m (dBμV/m)	E-Field Strength@10m (dBμV/m)	Calculated@10m (dBμA/m)	Limit@10m (dBμA/m)	Margin (dB)
0.064	20.34	35.88	56.22	45.76	-5.74	18.45	24.19
0.337	17.69	33.13	50.82	40.36	-11.14	11.27	22.41
0.594	14.40	33.13	47.53	37.07	-14.43	8.81	23.24
2.006	14.69	25.45	40.14	29.68	-21.82	3.52	25.34
3.746	12.79	22.66	35.45	24.99	-26.51	0.81	27.31
5.440	11.21	18.56	29.77	19.31	-32.19	-0.81	31.38

☒ Test Mode: Mode 3 (Operating Mode: Side)

Transmitter Spurious Emissions for 9kHz to 30MHz							
Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	E-Field Strength@3m (dBμV/m)	E-Field Strength@10m (dBμV/m)	Calculated@10m (dBμA/m)	Limit@10m (dBμA/m)	Margin (dB)
0.040	20.50	35.88	56.38	45.92	-5.58	20.47	26.05
0.291	17.80	33.13	50.93	40.47	-11.03	11.91	22.94
0.651	14.58	33.13	47.71	37.25	-14.25	8.41	22.66
2.007	14.64	25.45	40.09	29.63	-21.87	3.52	25.38
2.903	12.75	22.66	35.41	24.95	-26.55	1.91	28.47
4.708	11.31	18.56	29.87	19.41	-32.09	-0.19	31.90

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☒ Test Mode: Mode 4 (Operating Mode: Face), Lowest Channel Worst Case

Transmitter Spurious Emissions for 9kHz to 30MHz							
Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	E-Field Strength@3m (dBμV/m)	E-Field Strength@10m (dBμV/m)	Calculated@10m (dBμA/m)	Limit@10m (dBμA/m)	Margin (dB)
0.027	20.47	35.88	56.35	45.89	-5.61	22.16	27.76
0.305	17.54	33.13	50.67	40.21	-11.29	11.69	22.99
0.397	14.61	33.13	47.74	37.28	-14.22	10.55	24.77
1.590	14.84	25.45	40.29	29.83	-21.67	4.53	26.20
2.825	12.40	22.66	35.06	24.60	-26.90	2.03	28.93
3.548	11.23	18.56	29.79	19.33	-32.17	1.04	33.21

☒ Test Mode: Mode 4 (Operating Mode: Side), Lowest Channel Worst Case

Transmitter Spurious Emissions for 9kHz to 30MHz							
Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	E-Field Strength@3m (dBμV/m)	E-Field Strength@10m (dBμV/m)	Calculated@10m (dBμA/m)	Limit@10m (dBμA/m)	Margin (dB)
0.036	20.48	35.88	56.36	45.90	-5.60	21.01	26.61
0.280	17.70	33.13	50.83	40.37	-11.13	12.07	23.20
0.452	14.81	33.13	47.94	37.48	-14.02	9.99	24.01
1.526	14.35	25.45	39.80	29.34	-22.16	4.71	26.86
2.798	12.60	22.66	35.26	24.80	-26.70	2.07	28.77
4.978	11.12	18.56	29.68	19.22	-32.28	-0.43	31.86

Notes:

1. Negative sign (-) in the margin column signify levels below the limit.
2. Other emissions found were at least 20 dB below the limit.
3. E-Field Strength@3m(dBμV/m) = Reading Level + Factor
4. E-Field Strength@10m(dBμV/m) = E-Field Strength@3m(dBμV/m)+10.46dB
5. H-Field Strength(dBμA/m)= E-Field Strength(dBμV/m)-51.5dB

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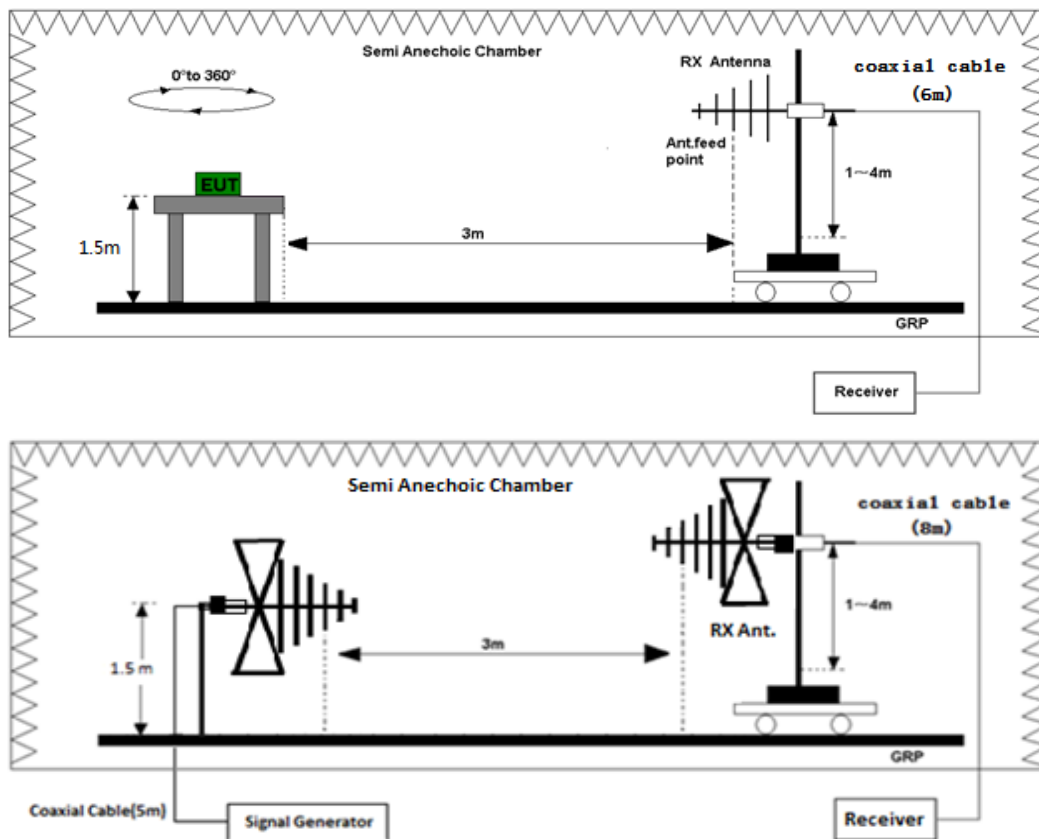
5.5 Transmitter Spurious Emissions (Frequency Above 30MHz)

Spurious emissions are emissions at frequencies other than those of the carrier and sidebands associated with normal modulation.

Test Limit

Frequency Range	Operating Mode Limit	Standby Mode Limit
47 MHz to 74 MHz	4 nW	2 nW
87.5 MHz to 118 MHz	4 nW	2 nW
174 MHz to 230 MHz	4 nW	2 nW
470 MHz to 790 MHz	4 nW	2 nW
Other frequency between 30 MHz to 1000 MHz	250 nW	2 nW

Test Setup



Radiated Emission Test Set-Up Frequency 30 MHz ~ 1 GHz

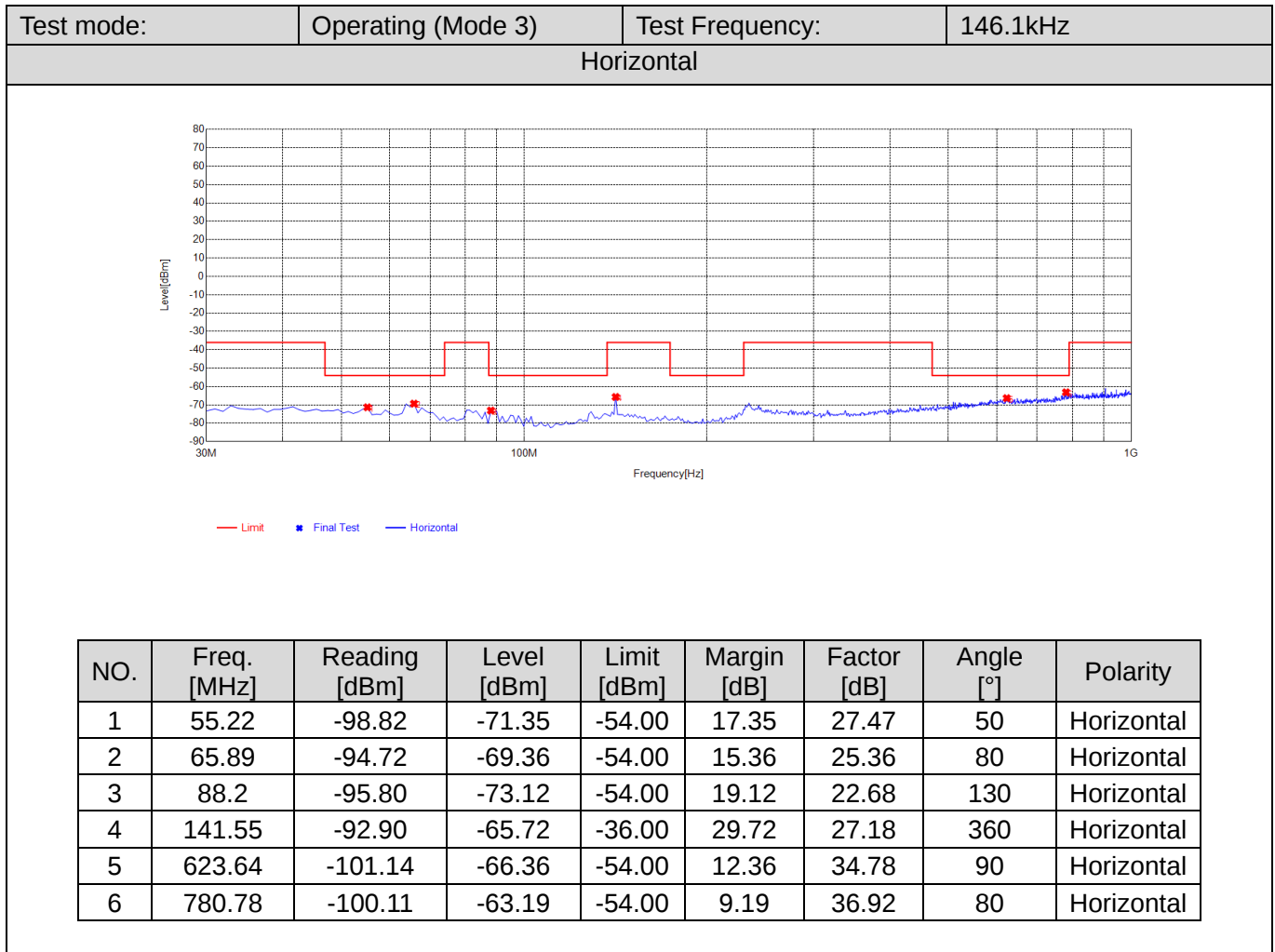
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Test Procedure

- ◆ For test method of frequency range (30 MHz-1000MHz)
- 1. 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.
- 2. 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.
- 3. $\text{Factor} = \text{Antenna Factor} + \text{Cable loss}$, $\text{Margin} = \text{Limit} - \text{Measurement Level}$.
- 4. The "Factor" value can be calculated automatically by software of measurement system.
- 5. All test modes had been pre-tested. The worst case and recorded in the report.

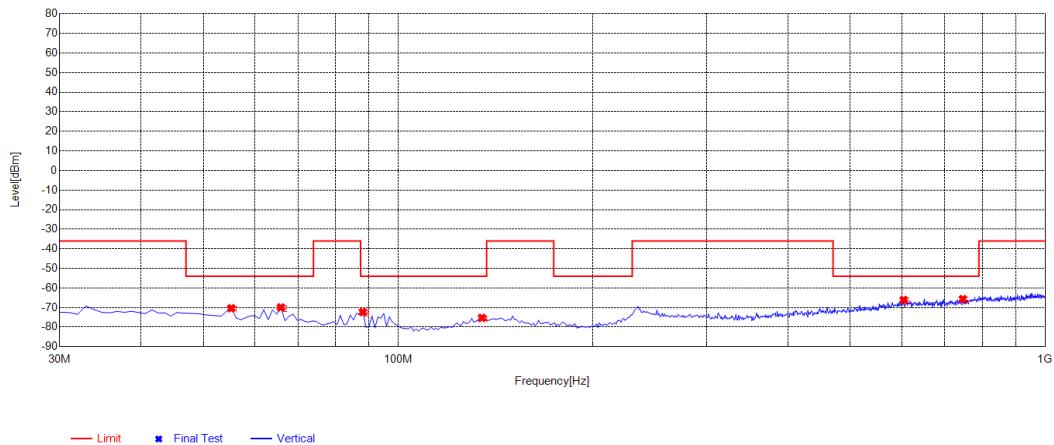
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Test Result



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Vertical



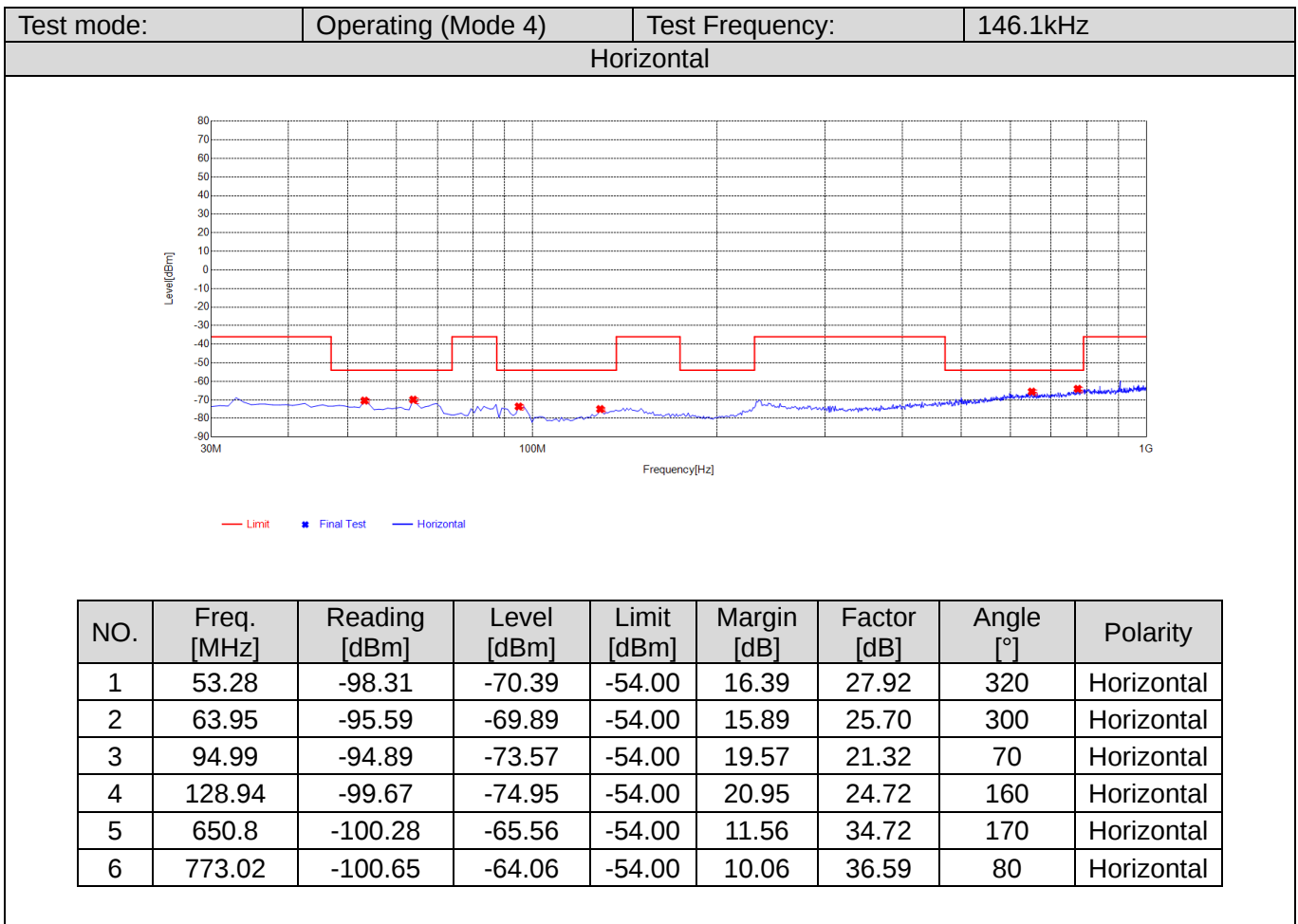
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	55.22	-97.83	-70.36	-54.00	16.36	27.47	310	Vertical
2	65.89	-95.30	-69.94	-54.00	15.94	25.36	340	Vertical
3	88.2	-95.00	-72.32	-54.00	18.32	22.68	170	Vertical
4	134.76	-101.38	-75.27	-54.00	21.27	26.11	50	Vertical
5	604.24	-100.96	-66.12	-54.00	12.12	34.84	280	Vertical
6	745.86	-101.23	-65.64	-54.00	11.64	35.59	110	Vertical

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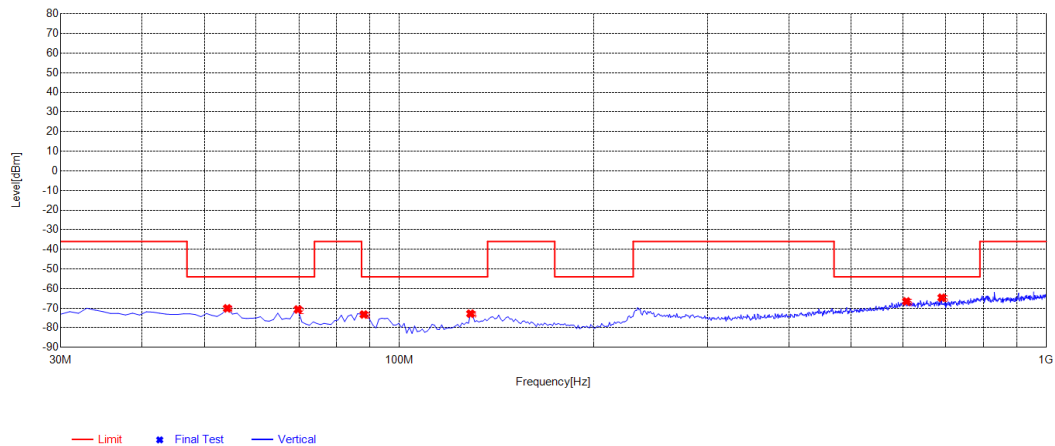
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Vertical



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	54.25	-97.80	-70.10	-54.00	16.10	27.70	340	Vertical
2	69.77	-95.37	-70.67	-54.00	16.67	24.70	200	Vertical
3	88.2	-95.92	-73.24	-54.00	19.24	22.68	30	Vertical
4	128.94	-97.53	-72.81	-54.00	18.81	24.72	170	Vertical
5	608.12	-101.38	-66.55	-54.00	12.55	34.83	340	Vertical
6	689.6	-99.64	-64.67	-54.00	10.67	34.97	130	Vertical

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5.6 Receiver Blocking

Test Limit

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

	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)	$f = f_c \pm 10 \cdot F$ (see note)
Signal level field strength at the EUT	72dB μ A/m	72dB μ A/m	82dB μ A/m
Note: $F = \text{OFR}$ see clause 4.3.3.			

Test Setup

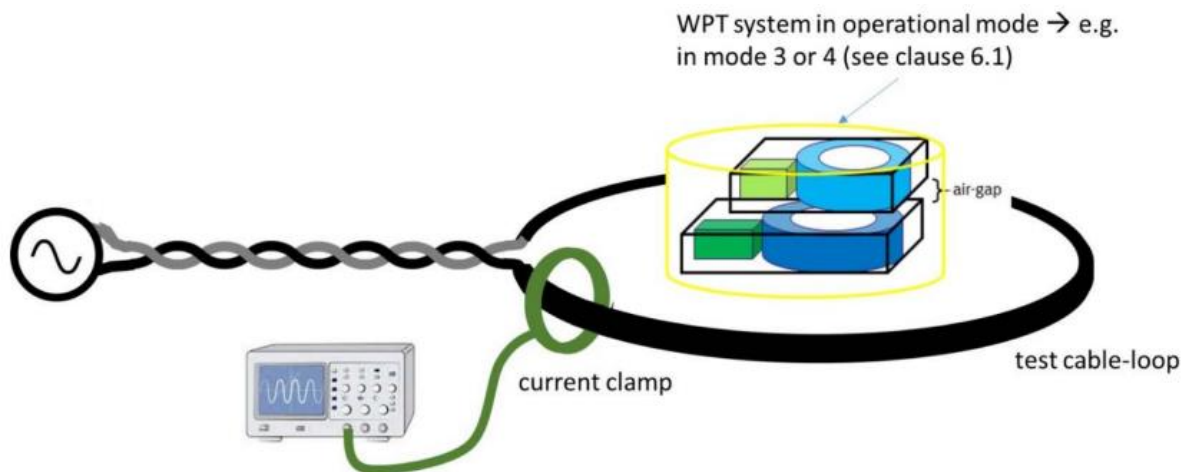


Figure 11: Schematic test set-up for the RX-blocking test

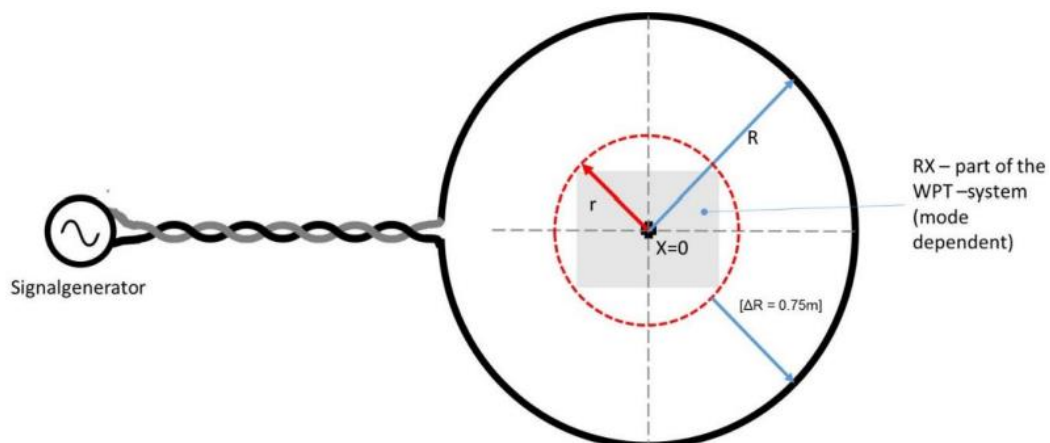


Figure 12: Schematic test set-up for the RX-blocking test

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Test Procedure

The fulfilment of the WPT system performance criterion in all possible operational modes (see clause 4.2.3) shall be tested in presence of the inference signals according to Table 6.

- The manufacturer shall declare in which device orientation(s) (worst case) the test shall be performed.
- The WPT system shall initially operate without interference according to its specified sensitivity (detecting an specific object in the maximum depth as declared by the manufacturer (see clause 4.2.2 on wanted performance criteria)).
- The test setup is visualized in the following Figures 11 and 12.
- The tool shall be operated as intended (e.g. some tools might require to be moved across the object, some tool can be used stationary).
- 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 [1].
- 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 (e.g. see Figures 11 and 12).
- 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.
- (See Figure 12): $R \geq r + \Delta R$.
- The maximum H-Field can be calculated from the loop current I (into the test-loop) with the following formula:

$$H = \frac{I}{2R}$$

Test Result

☒ Test Mode: Mode 3

Interference Type	Test Frequency (kHz)	Signal level @ EUT	Performance	Result
In-band signal	146.1	72dBuA/m	No function loss	Pass
OOB signal	145.218	72dBuA/m	No function loss	Pass
	146.982	72dBuA/m	No function loss	Pass
Remote-band signal	137.28	82dBuA/m	No function loss	Pass
	154.92	82dBuA/m	No function loss	Pass

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Appendix I: Photographs of Test Setup

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Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC05443241134AP01

-----End of Report-----

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1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the “Company”) solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the “Clients”).
2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
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.

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Health Test Report

Report No.: AGC05443241134EH01

PRODUCT DESIGNATION : 3 in 1 wireless charger

BRAND NAME : N/A

MODEL NAME : MO2420

APPLICANT : MID OCEAN BRANDS B.V.

DATE OF ISSUE : Dec. 09, 2024

STANDARD(S) : EN IEC 62311:2020
EN 50665:2017

REPORT VERSION : V1.0

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 09, 2024	Valid	Initial release

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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	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	3 in 1 wireless charger
Brand Name	N/A
Test Model	MO2420
Series Model	N/A
Difference Description	N/A
Date of receipt of test item	Nov. 21, 2024
Date of test	Nov. 21, 2024 to Dec. 09, 2024
Test Result	Pass

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By



Cici Li
(Project Engineer)

Dec. 09, 2024

Reviewed By



Calvin Liu
(Reviewer)

Dec. 09, 2024

Approved By



Angela Li
Authorized Officer

Dec. 09, 2024

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2. TECHNICAL INFORMATION

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

Product Designation	3 in 1 wireless charger
Test Model	MO2420
Hardware Version	V1.0
Software Version	V1.0
EUT Input Rating	DC 5V, 2A; DC 9V, 2A
Wireless Charging Output Power	Wireless Output of charging pad: 15W Max Wireless Output for AirPods: 5W Max Wireless Output for Apple Watch: 1.5W Max
WPT Technical Parameters	
Operation Frequency Range	WPT Band 1: 110kHz-205kHz WPT Band 2: 325kHz-330kHz
Modulation Type	ASK
Antenna Designation	Coil Antenna
Antenna Gain	0dBi

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

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3. 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.

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3.2 TEST LIMIT

According to EN 62311:2008, 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.

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

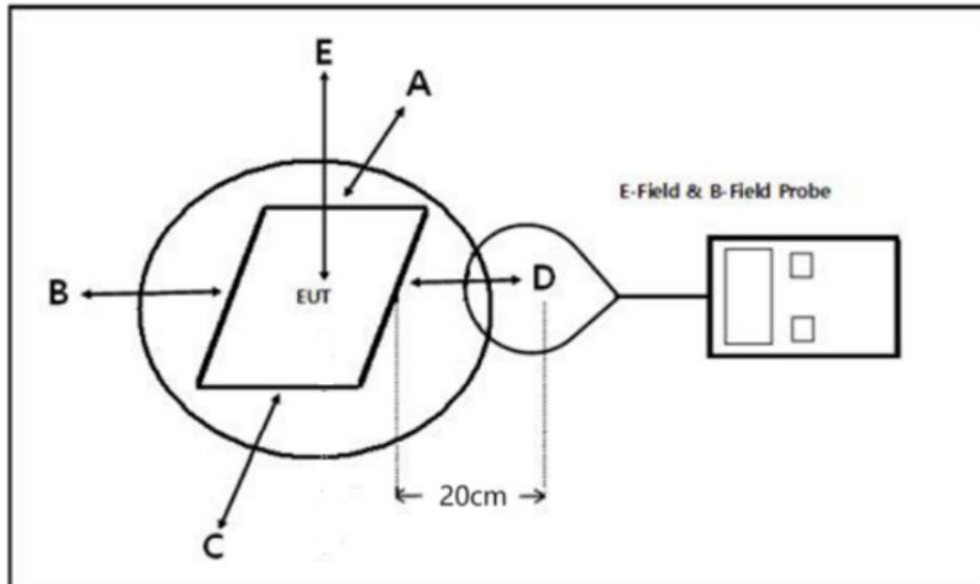
Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	$4\,000/f$	$5\,000/f$	—
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	—
0,8-3 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

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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.

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4. TEST EQUIPMENT LIST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Broadband Field Meter	WAVECONTROL	SMP2	19SN1101	Feb. 24, 2023	Feb. 23, 2025
Probe FHP	WAVECONTROL	WP400	19WP100558	Feb. 24, 2023	Feb. 23, 2025

5. EUT OPERATION CONDITION

No.	Test Mode Description	Worst Case
1	AC/DC Adapter + EUT + Wireless load (15W)	-
2	AC/DC Adapter + EUT + Wireless load (10W)	-
3	AC/DC Adapter + EUT + Wireless load (7.5W)	-
4	AC/DC Adapter + EUT + Wireless load (5W)	-
5	AC/DC Adapter + EUT + Wireless load (1.5W)	-
6	AC/DC Adapter + EUT (Null load)	-

Note: 1. All modes have been tested and only the worst mode test data recorded in the test report.

2. The EUT supports 15W, 10W, 7.5W, 5W, 1.5W wireless output, and all modes have been tested at full load, half load and null load, only the worst mode(mode 1) is reflected in the report.

4. TEST RESULT

Frequency	Maximum Radiated H-Field at 20cm		Limit	Result
MHz	A/m		A/m	Pass/Fail
146kHz	position E	0.082	5	Pass
	position A	0.065		
	position B	0.044		
	position C	0.040		
	position D	0.035		

Since Radiated H-Field at worse case is 0.082A/m which cannot exceed the exempt condition, 5A/m. It is deemed to full fit the requirement of RF exposure basic restriction specified in EC Council Recommendation (1999/519/EC).

Frequency	Maximum Radiated H-Field at 20cm		Limit	Result
MHz	A/m		A/m	Pass/Fail
328kHz	position E	0.079	5	Pass
	position A	0.061		
	position B	0.042		
	position C	0.038		
	position D	0.032		

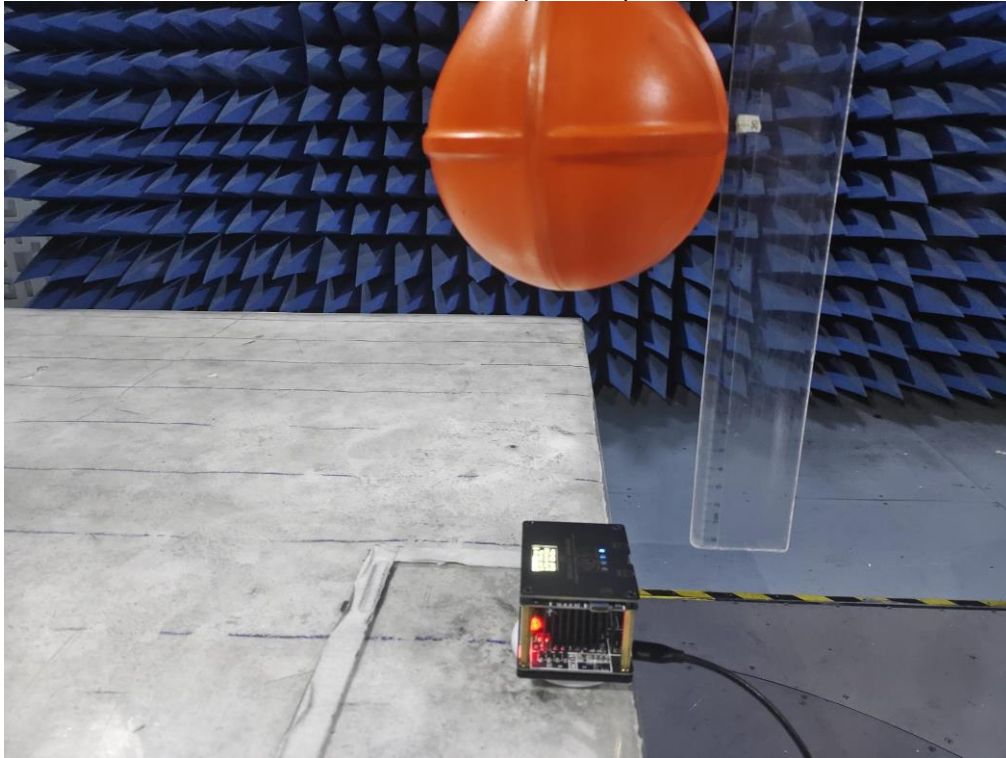
Since Radiated H-Field at worse case is 0.079A/m which cannot exceed the exempt condition, 5A/m. It is deemed to full fit the requirement of RF exposure basic restriction specified in EC Council Recommendation (1999/519/EC).

5. CONCLUSION

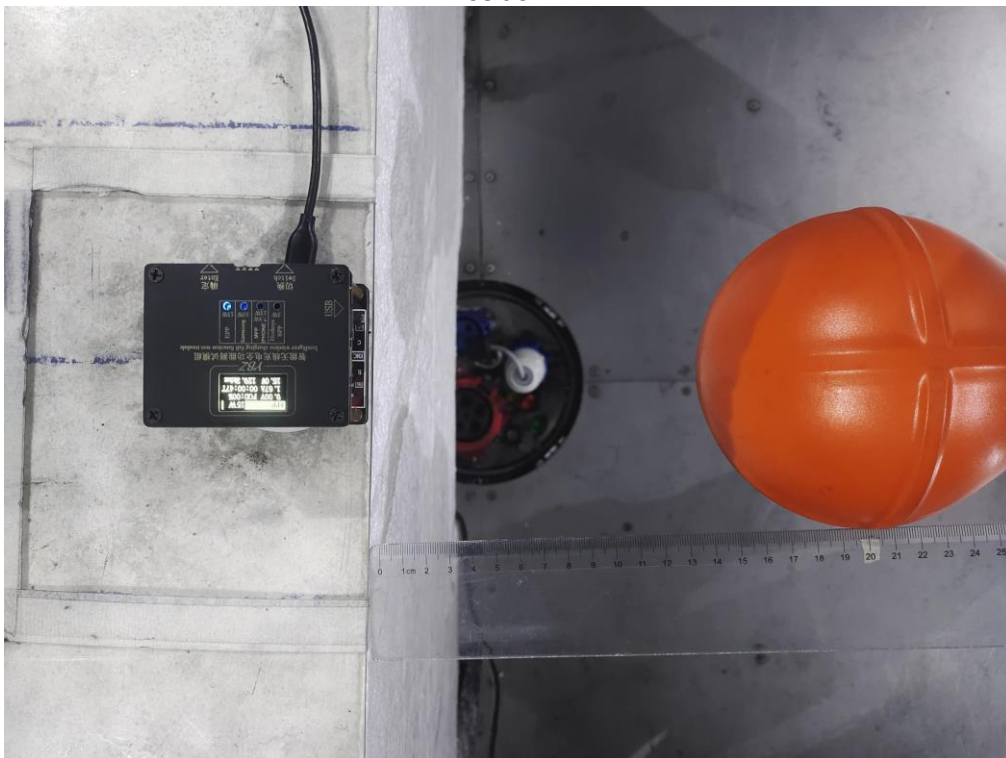
Remark: EUT meets the basic requirements in the standard.

APPENDIX I: PHOTOGRAPHS OF TEST SETUP

Position E (146kHz)

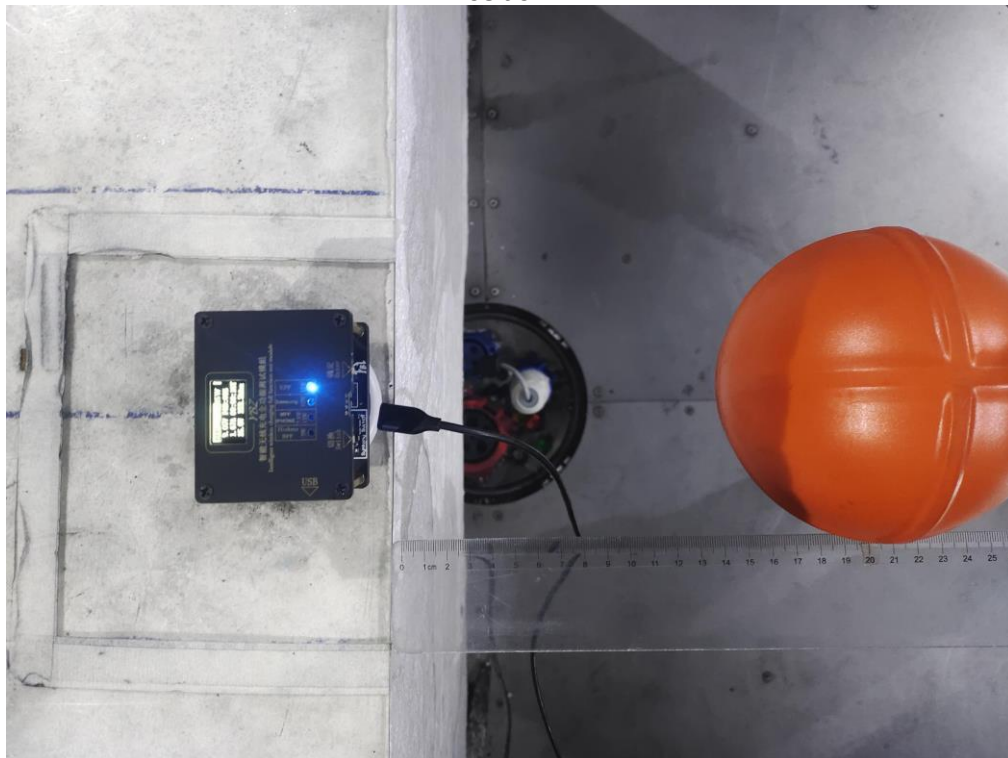


Position A

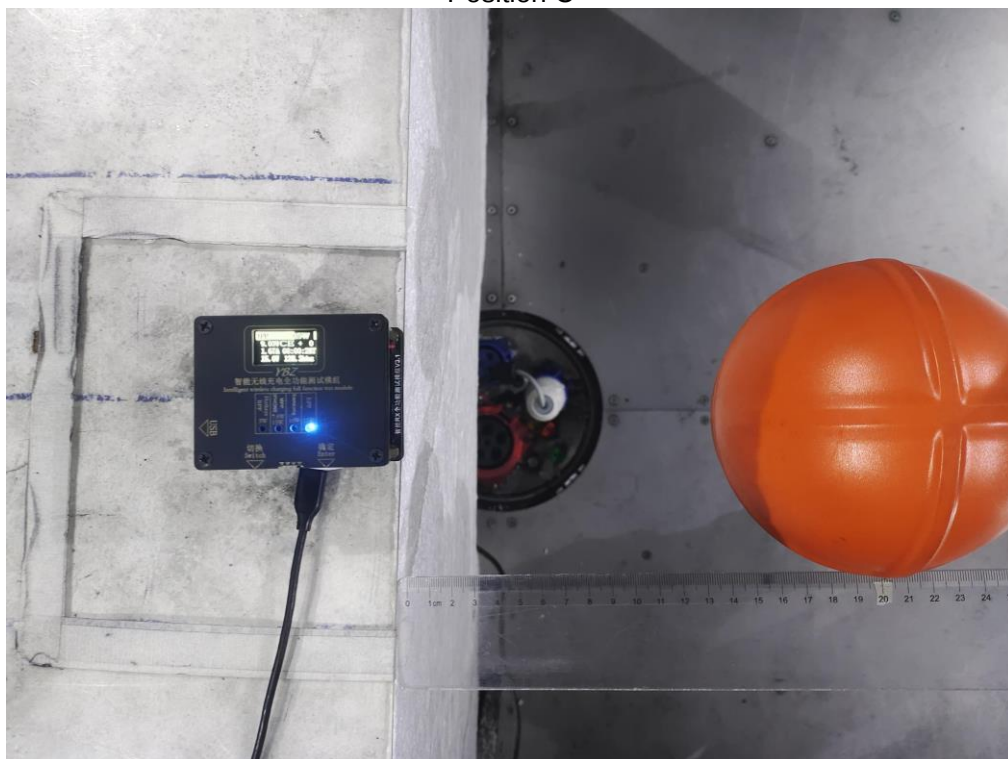


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Position B

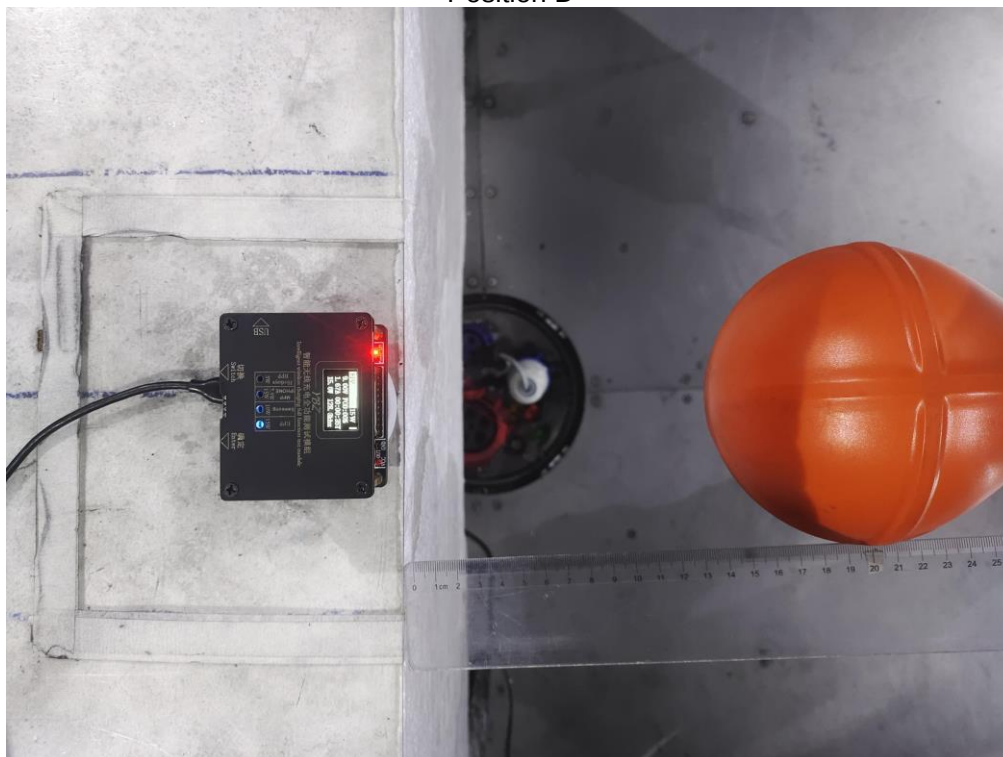


Position C

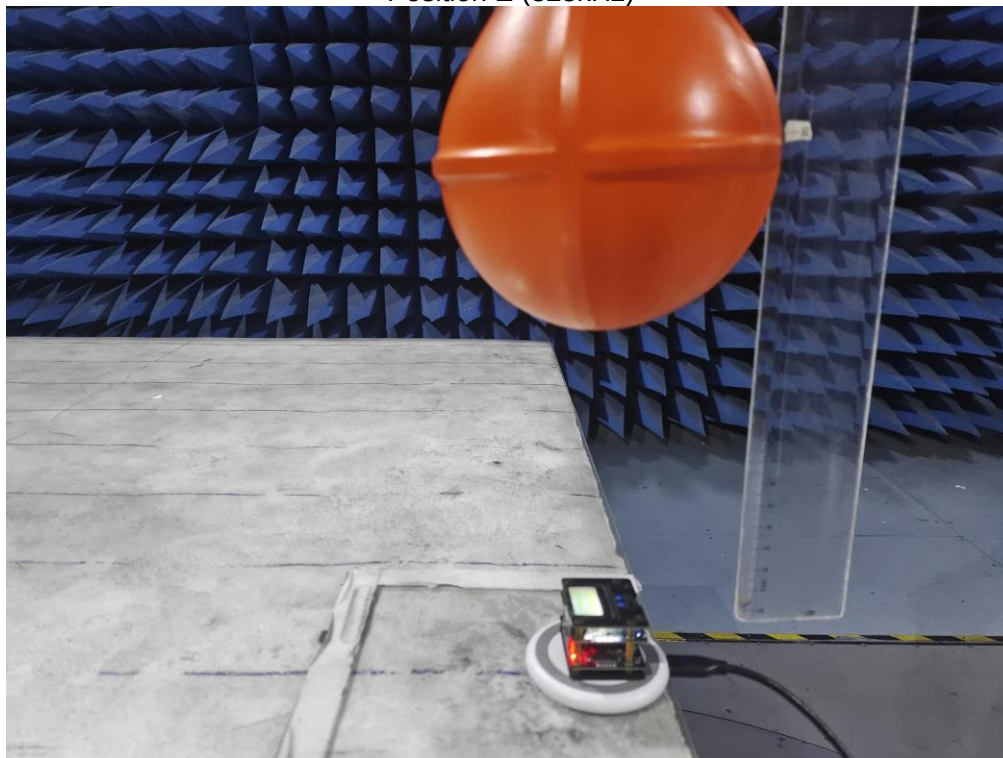


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Position D

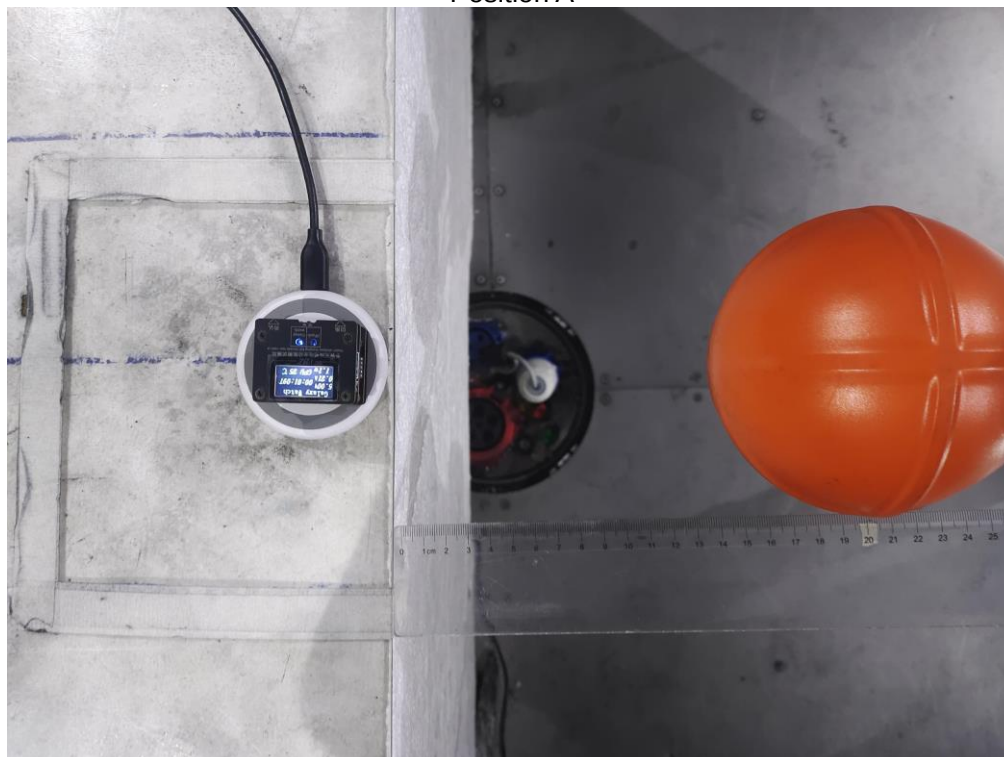


Position E (328kHz)

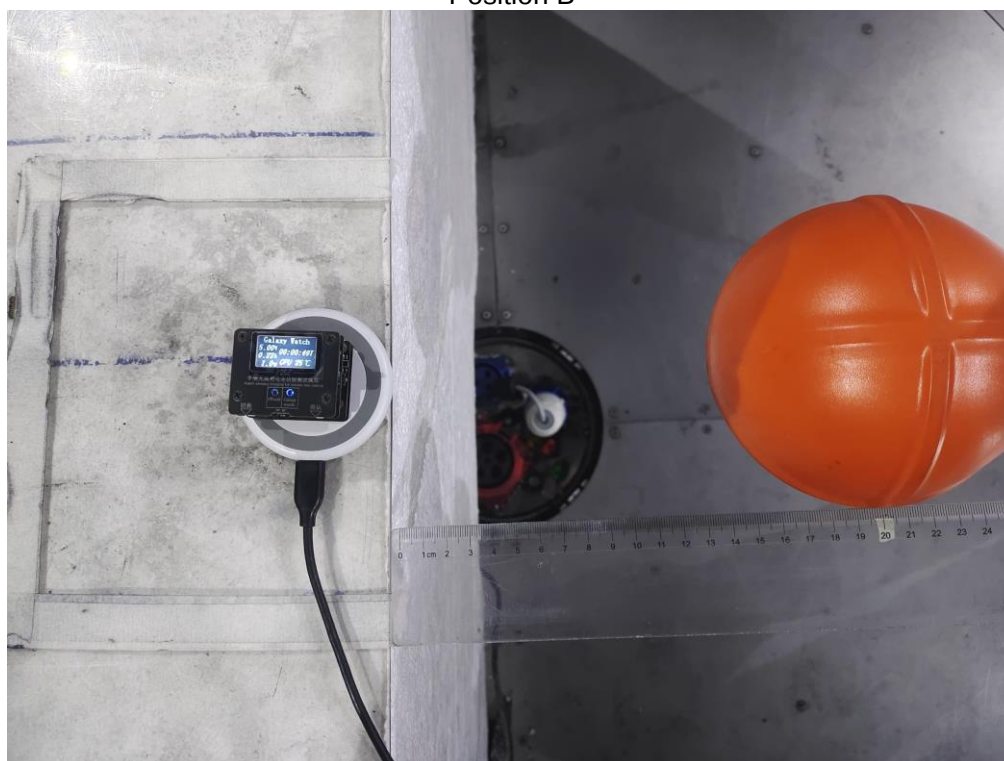


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Position A



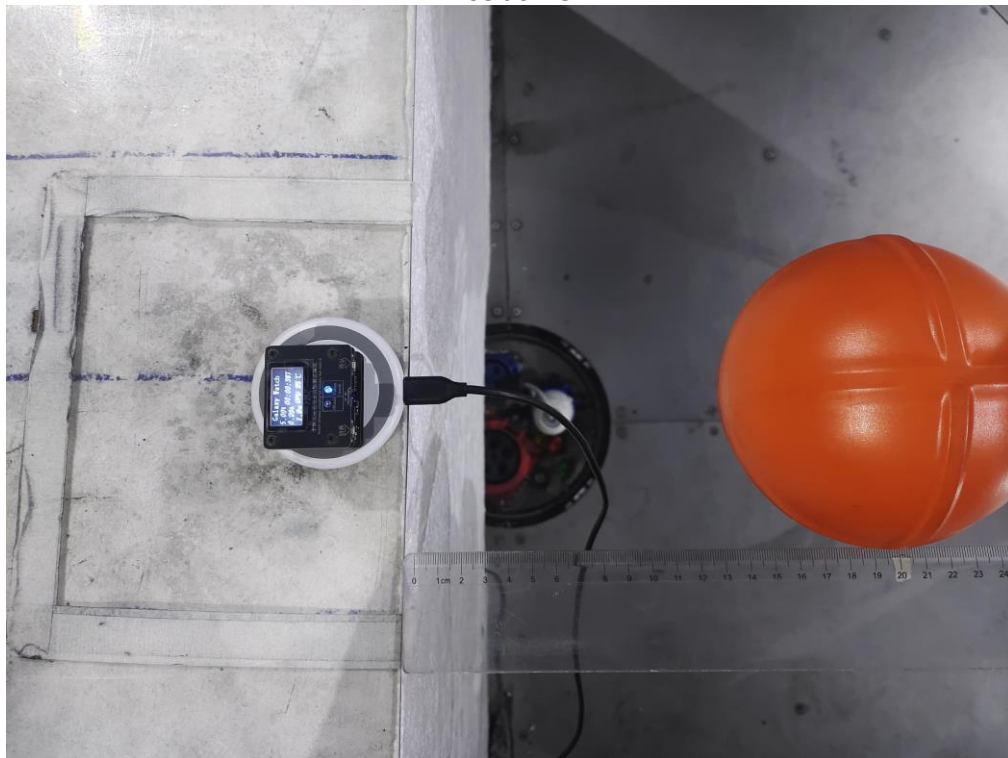
Position B



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Position C



Position D

**-----END OF REPORT-----**

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2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
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.
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