Test Report

ETSI EN 303 417 V1.1.1 (2017-09)

For

Product: Wireless Charger

Model: MO2651

Report No.: RKEYS250731241

Issued for

Mid Ocean Brands B.V.

Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.

Issued by

Guangdong KEYS Testing Technology Co.,Ltd.

Address: Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China

Scan to view the original file

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

CONTENTS

1. TEST RESULT CERTIFICATION 3
2. TEST SUMMARY 4
3. GENERAL INFORMATION 5
3.1. GENERAL DESCRIPTION OF E.U.T. 5
3.2. TEST FREQUENCY LIST 5
3.3. TEST MODE 5
3.4. SUPPORT UNIT USED IN TEST CONFIGURATION AND SYSTEM 5
3.5. ENVIRONMENTAL CONDITIONS 6
3.6. STATEMENT OF THE MEASUREMENT UNCERTAINTY 6
4. EQUIPMENTS USED DURING THE TEST 7
5. TEST CONDITIONS AND RESULTS 8
5.1. PERMITTED RANGE OF OPERATING FREQUENCIES 8
5.2. OPERATING FREQUENCY RANGES 9
5.3. H-FIELD REQUIREMENTS 13
5.4. TRANSMITTER SPURIOUS EMISSIONS 15
5.5. TRANSMITTER OUT OF BAND (OOB) EMISSIONS 19
5.6. RECEIVER BLOCKING 22
FOR WIRELESS CHARGER ..... 错误！未定义书签。

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

1. TEST RESULT CERTIFICATION

Applicant's name	:	Mid Ocean Brands B.V.
Address	:	Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacture's name	:	117486
Address	:	N/A
Product name	:	Wireless Charger
Model name	:	MO2651

This device described above has been tested by KEYS, and the test results show that the equipment under test (EUT) is in compliance with the 2014/53/EU RED Directive Art.3.2 requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of KEYS, this document may be altered or revised by KEYS, personal only, and shall be noted in the revision of the document.

Date of Test

Date (s) of performance of tests:	Jul.31, 2025 to Aug. 05, 2025
Date of Issue:	Aug.05, 2025
Test Result:	Pass

Test Engineer:

Linda Chen

Linda Chen / Engineer

Technical Manager:

Bruce Zhang

Bruce Zhang / Manager

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

2. TEST SUMMARY

Clause No.	Test Item	Verdict
4.3.2	Permitted range of operating frequencies	PASS
4.3.3	Operating frequency ranges	PASS
4.3.4	H-field requirements	PASS
4.3.5	Transmitter spurious emissions	PASS
4.3.6	Transmitter out of band (O0B) emissions	PASS
4.3.7	WPT system unwanted conducted emissions	N/A
4.4.2	Receiver blocking	PASS
Note:The measurement uncertainty is not included in the test result.		

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

3. General Information

3.1. General Description of E.U.T.

Product Name	:	Wireless Charger
Model Name	:	MO2651
WPC wireless charger	:	110 - 205 KHz
Antenna Type	:	PCB Antenna
Power supply	:	Model: MOB/MO2651 Input: DC 9V 2A, 5V 2A Output: DC 5V 1A, 7.5V 1A, 9V 1.1A, 9V 1.67A
Modulation Type:	:	ASK
Operation Frequency:	:	110.0~205.0KHz
Operational Mode:	:	☒ Mode 1: base station in stand-by, idle mode. ☒ Mode 2: Communication before charging, adjustment charging mode/position. ☒ Mode 3: Communication. ☒ Mode 4: energy transmission.

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

3.2. Test frequency list

Low channel	110.0kHz
High channel	205.0kHz

3.3. Test mode

The EUT has been tested under typical operating condition. The Applicant provides software to control the EUT for staying in continuous transmitting for testing.

Pre-scan above all rating output , found 5V OUTPUT was worse case, so only show the test data for worse case mode on the test report.

3.4. Support unit used in test configuration and system

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:

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Support unit				
Item	**Equipement**	**Trade Name**	**Model No.**	**Power cord**
N/A	N/A	N/A	N/A	N/A

3.5. Environmental Conditions

Normal Condition	Temperature	15 °C to +35 °C
	Relative humidity	20 % to 55 %.
	Voltage	the equipment shall be the nominal voltage for which the equipment was designed.
Extreme Condition	Temperature	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer
	Voltage	Measurements shall be made over the extremes of the operating voltage range as declared by the manufacturer

Normal Condition	TN=Normal Temperature	25 °C
Extreme Condition	TL=Lower Temperature	-20 °C
	TH=Higher Temperature	60 °C

3.6. Statement of the Measurement Uncertainty

Test Items	**Measurement Uncertainty**	**Notes**
Frequency error	70Hz for<1GHz 130Hz for >1GHz	(1)
Transmitter spurious emissions	4.36dB for<1GHz 5.10dB for >1GHz	(1)
Receiver blocking	1.91 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

4. Equipments Used during the Test

RF Conducted Test Equipment

Name of Equipment	Manufacturer	Model	Serial No.	Calibration Date	Cal. Interval
Signal Generator	Agilent	N5182A	KEYS-EL-237	Mar. 03, 2025	1 Year
Spectrum Analyzer	Keysight	N9020A	MY57440518	Mar. 03, 2025	1 Year
Power Switch	WCS Technology	SMU-3002	SMU3002250301A	Apr.16, 2025	1 Year
DC Power source	Agilent	E3632A	MY40023743	Mar. 03, 2025	1 Year
Temperature Chamber	Guangke	GK-TH-1000	/	Oct.12,2024	1 Year

Radiated Emissions Test Equipment

Name of Equipment	Manufacturer	Model	Serial No.	Calibration Date	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCI7	KEYS-EL-205	Mar. 03, 2025	1 Year
Logarithmic Periodic Broadband Antenna	Schwarzbeck	VULB9168	KEYS-EL-209	Mar. 06, 2025	3 Year
Horn antenna	Schwarzbeck	BBHA9120D	03083	Mar. 06, 2025	3 Year
Preamplifier	HP	EM330	KEYS-EL-210	Mar. 03, 2025	1 Year
3m standard semi-anechoic chamber	Taihe MaoRui	9*6*6	KEYS-EL-234	Oct. 12, 2024	5 Year
Test Software	Tonscend	JS32-RE Version 5.0.0			

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5. Test Conditions and Results

5.1. Permitted range of operating frequencies

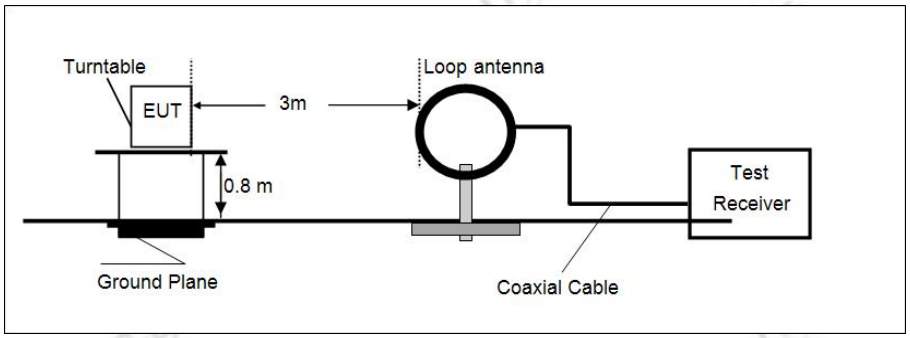
5.1.1. LIMIT

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, see Table 2 as follow:

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	Transmitter	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	• 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	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.	

5.1.2. TEST CONFIGURATION



5.1.3. TEST PROCEDURE

1.The test conditions.

☒ Normal conditions ☐ Extreme conditions

2.Please refer to ETSI EN 303417 (V.1.1.1) Sub-clause 4.3.2.4 for the conformance.

5.1.4. TEST MODE:

The EUT was programmed to be in continuously transmitting mode.

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.1.5. TEST RESULTS

PASS

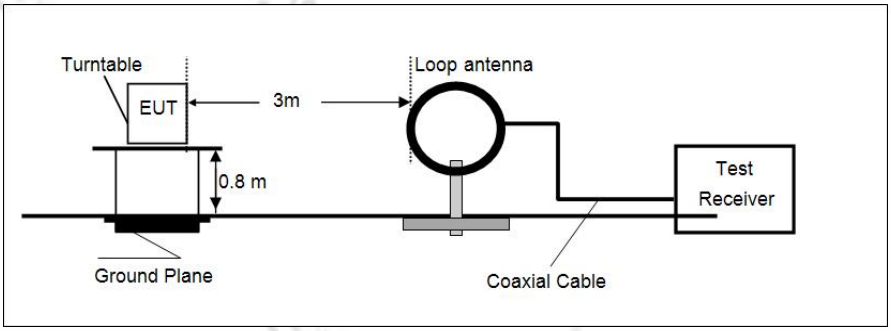
The manufacturer declare:the frequency ranges of EUT conform the permitted range:100-300KHz

5.2. Operating frequency ranges

5.2.1. LIMIT

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.

5.2.2. TEST CONFIGURATION



5.2.3. TEST PROCEDURE

1.The test conditions.

☒ Normal conditions ☒ Extreme conditions

2.Please refer to ETSI EN 303417 (V.1.1.1) Sub-clause 6.2.1and 4.3.3.2 for the measurement method.

5.2.4. TEST MODE

The EUT was programmed to be in continuously transmitting mode.

5.2.5. TEST RESULTS

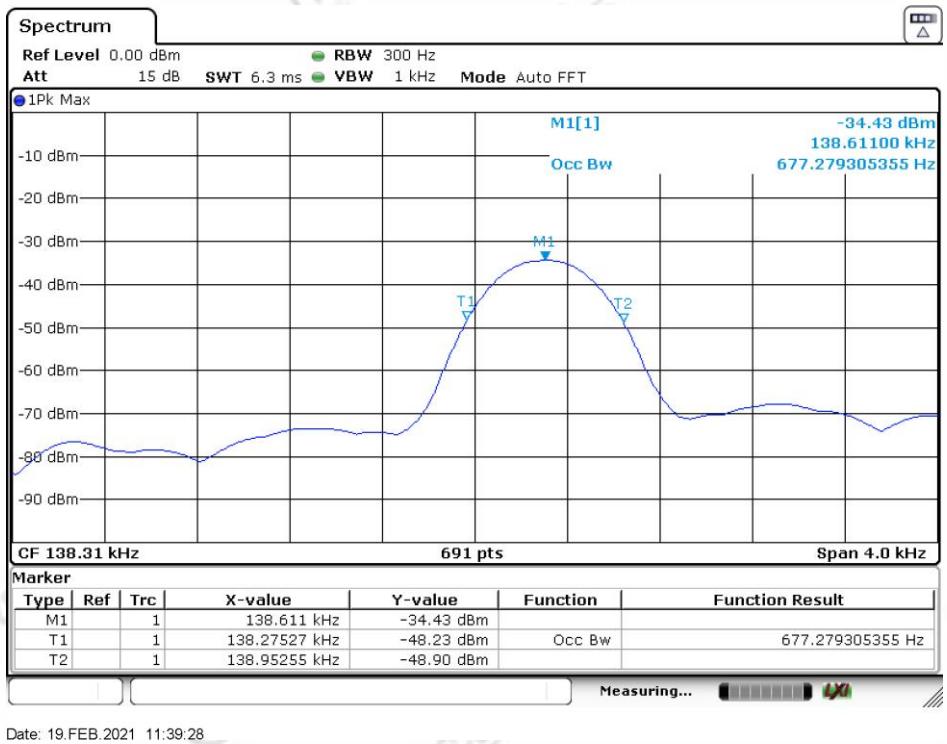
This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

For WPT system

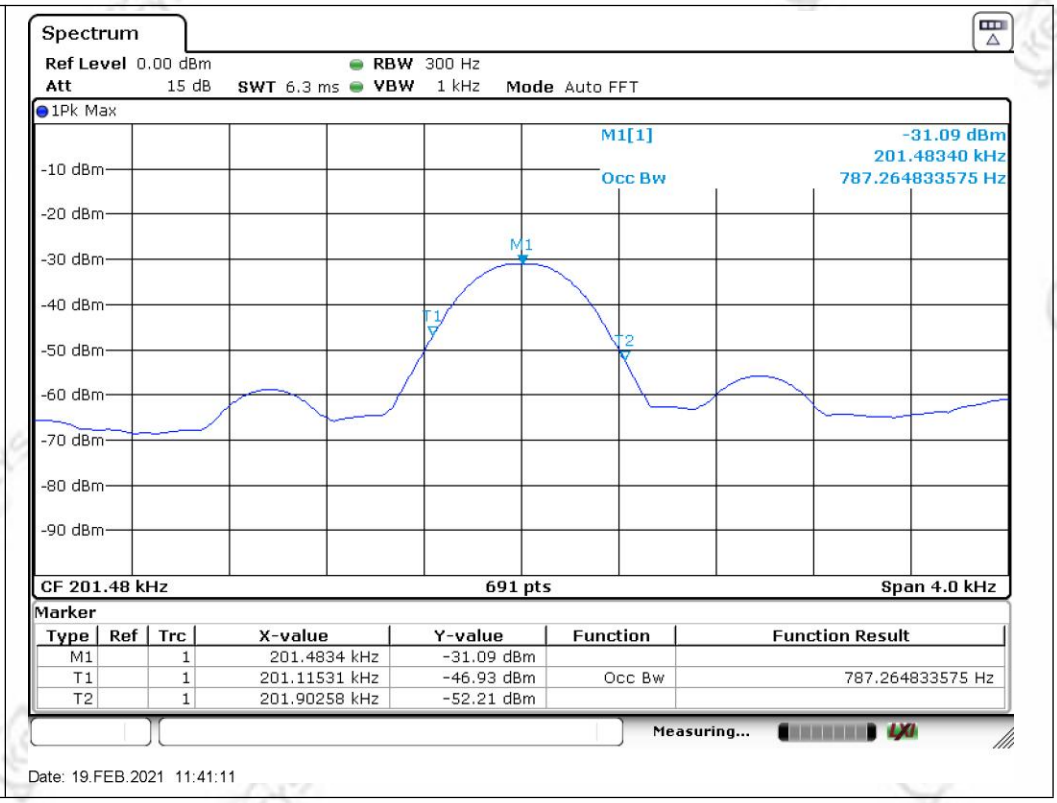
condition		Test channel	OBW (KHz)	FL	FH	LIMIT	Verdict
TEMP	VOL						
Normal	Normal	FCL	0.677	137.9715	-	Within 100-300KHz	PASS
		FCH	0.787	-	201.8735		
LT	LV	FCL	0.675	137.9725	-		
		FCH	0.784	-	201.872		
	HV	FCL	0.669	137.9755	-		
		FCH	0.798	-	201.879		
HT	LV	FCL	0.671	137.9745	-		
		FCH	0.779	-	201.8695		
	HV	FCL	0.684	137.968	-		
		FCH	0.781	-	201.8705		
Note: fL= fCL-0.5OBW, fH = fCH+0.5OBW							

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Normal condition:

Low Channel	

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

High Channel	

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.3. H-field requirements

5.3.1. LIMIT

The H-field limits are provided in Table 3.

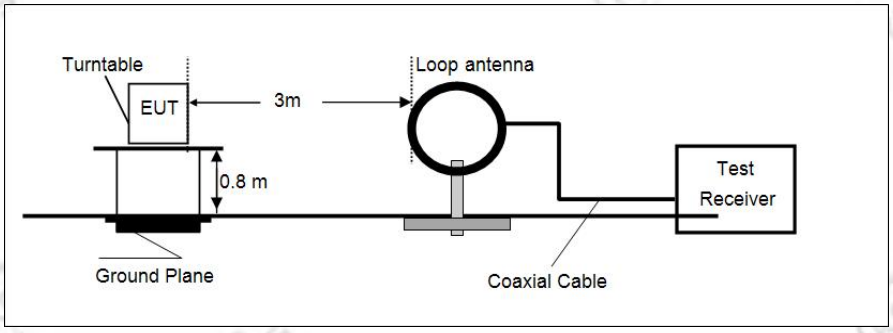
They have been specified for control of any radiated emissions within the OFR originating from the WPT system (power transmission and accompanying data communication).

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 ≤ f < 0,021	72	
0,059 ≤ f < 0,061	69,1 descending 10 dB/dec above 0,059 MHz	See note 1
0,079 ≤ f < 0,090	67,8 descending 10 dB/dec above 0,079 MHz	See note 2
0,100 ≤ f < 0,119	42	
0,119 ≤ f < 0,135	66 descending 10 dB/dec above 0,119 MHz	See note 1
0,135 ≤ f < 0,140	42	
0,140 ≤ f < 0,1485	37,7	
0,1485 ≤ f < 0,30	-5	
6,765 ≤ f < 6,795	42	
NOTE 1: Limit is 42 dBµA/m for the following spot frequencies: 60 kHz ± 250 Hz and 129,1 kHz ± 500 Hz. NOTE 2: At the time of preparation of the present document the feasibility of increased limits for high power wireless power transmission systems to charge vehicles [i.4] was prepared. New specific requirements for such systems (e.g. higher H-field emission limits in the 79 - 90 kHz band) will be reflected within a future revision of the present document.		

5.3.2. TEST CONFIGURATION



This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.3.3. TEST PROCEDURE

1.The test conditions.

☒ Normal conditions ☒ Extreme conditions

2.Please refer to ETSI EN 303417 (V.1.1.1) Sub-clause 6.2.1 for the measurement method.

5.3.4. TEST MODE

The EUT was programmed to be in continuously transmitting mode.

5.3.5. TEST RESULTS

Remark: The test includes extreme mode and normal mode, but only the worst mode data（(normal model） is recorded on the report

For WPT system

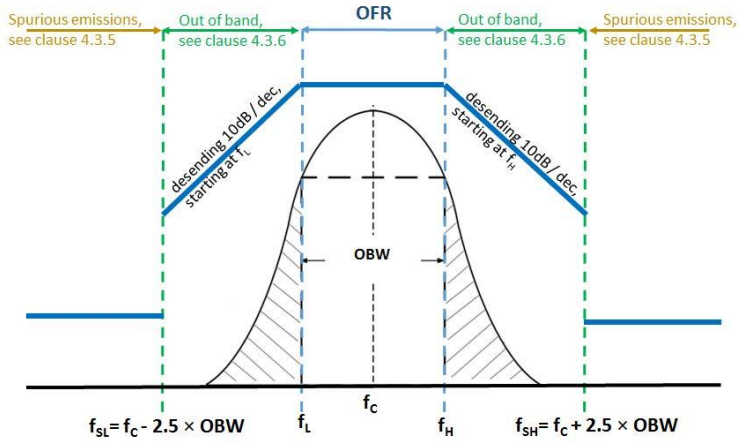
Test condition:		Normal							
Frequency (MHz)	Read Level@3m (dBuA)	Antenna Factor (dBs/m)	Cable Loss (dB)	Preamp Factor (dB)	Level @3m (dBuA/m)	Level@10 m (dBuA/m)	Limit@10 m (dBuA/m)	Over Limit (dB)	Test value
0.02	18.55	20	0.06	0	38.61	14.78	72	-57.22	QP
0.112	15.41	20	0.06	0	35.47	11.58	42	-30.42	QP
0.138	41.35	20	0.06	0	61.41	37.55	42	-4.45	QP
0.144	22.76	20	0.06	0	42.82	19.21	37.7	-18.49	QP
0.201	-5.25	20	0.06	0	14.81	-8.81	-5.34	-3.47	QP
Note: H_{10m}= H_{3m}-C3 C3=23.87dB									

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.4. Transmitter spurious emissions

5.4.1. LIMIT

The radiated field strength of spurious emissions below 30 MHz shall not exceed the generated H-field given in Table 4.



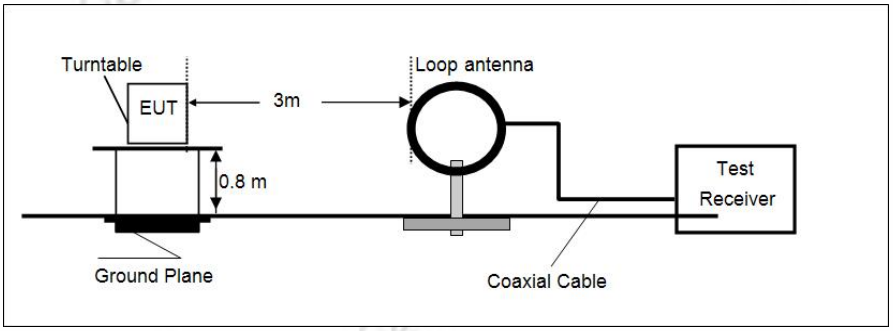
The power of any radiated spurious emission between 30 MHz and 1 GHz shall not exceed the values given in Table 5.

Table 5

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

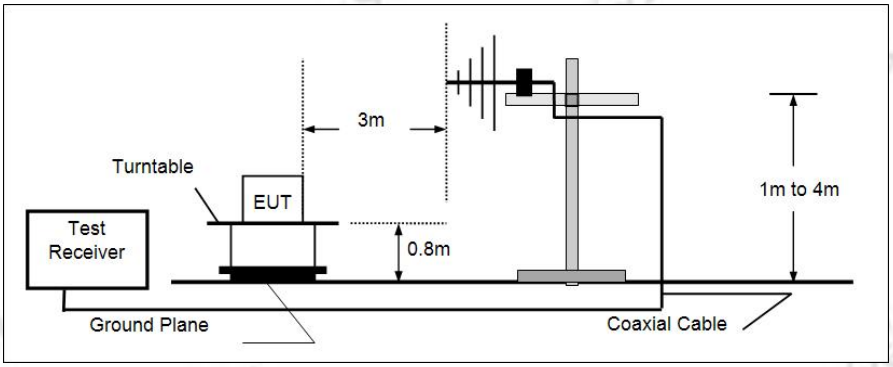
5.4.2. TEST CONFIGURATION

Below 30MHz



This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

30MHz-1GHz



5.4.3. TEST PROCEDURE

1.The test conditions.

☒ Normal conditions ☐ Extreme conditions

2.Please refer to ETSI EN 303417 (V.1.1.1) Sub-clause 6.2.1 for the measurement method.

5.4.4. TEST MODE:

The EUT was programmed to be in continuously transmitting mode.

5.4.5. TEST RESULTS

Below 30MHz:

For WPT system

Frequency (MHz)	Level (dBuA/m) @3m	Level Line (dBuA/m)@10m	Limit Line (dBuA/m)@10m	Over Limit (dB)	Test value
0.04	31.67	0.40	23.18	-22.78	QP
0.08	20.14	-11.12	18.26	-29.38	QP
0.42	11.25	-19.95	12.94	-32.89	QP
0.70	10.26	-20.89	9.46	-30.35	QP
0.97	12.68	-18.42	5.95	-24.37	QP
7.20	-13.01	-40.75	-1.75	-39	QP

Note:

1. $H_{10m}= H_{3m}-C3$

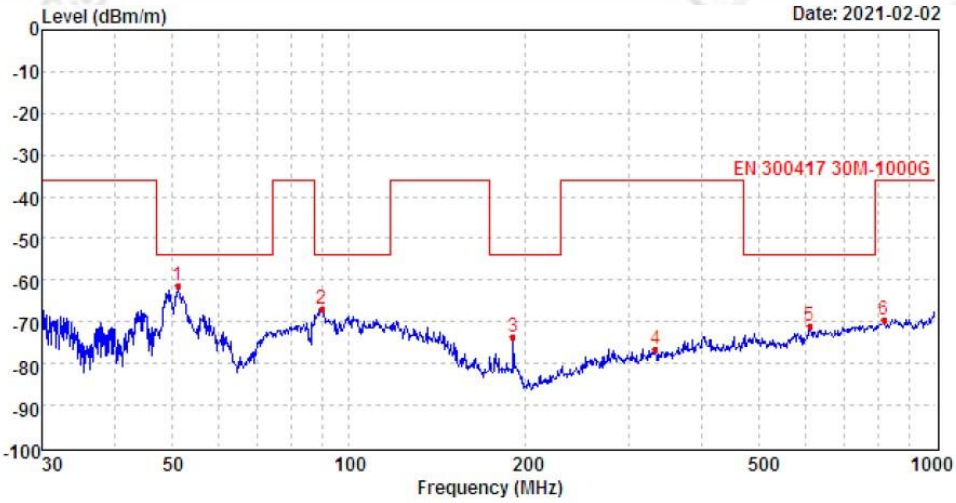
2.Level=Reading Value+Antenna factor +Cable loss-AMP

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Above 30MHz:

For WPT system

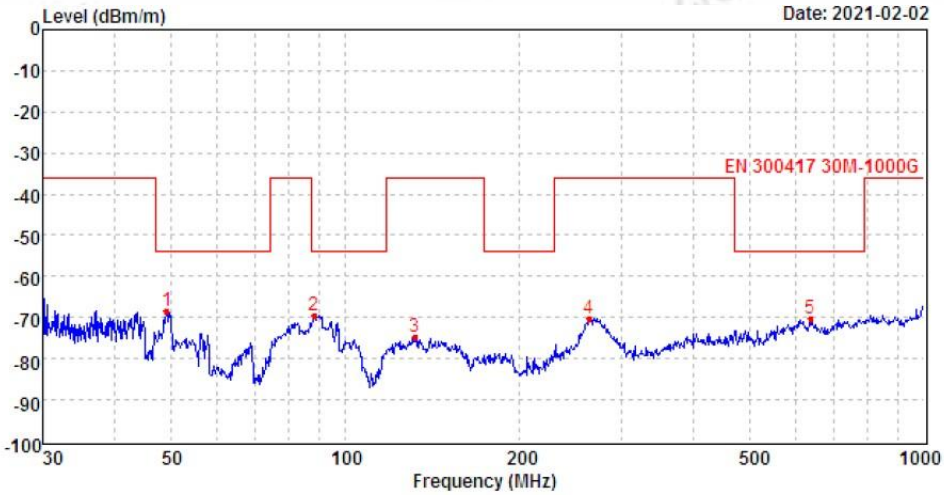
Polarization	**Vertical**



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	51.20	-57.66	20.37	6.65	30.85	-61.49	-54.00	-7.49	Peak
2	89.87	-71.31	28.24	6.92	30.75	-66.90	-54.00	-12.90	Peak
3	190.73	-71.49	20.78	7.47	30.37	-73.61	-54.00	-19.61	Peak
4	333.62	-78.73	24.34	8.07	30.23	-76.55	-36.00	-40.55	Peak
5	610.85	-77.85	27.90	8.98	29.87	-70.84	-54.00	-16.84	Peak
6	817.88	-79.64	29.78	9.62	29.37	-69.61	-36.00	-33.61	Peak

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Polarization	Horizontal



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	49.08	-66.66	22.48	6.64	30.86	-68.40	-54.00	-14.40	Peak
2	88.30	-65.57	19.98	6.91	30.77	-69.45	-54.00	-15.45	Peak
3	131.85	-67.33	15.97	7.17	30.67	-74.86	-36.00	-38.86	Peak
4	263.59	-71.09	23.43	7.79	30.36	-70.23	-36.00	-34.23	Peak
5	637.17	-78.62	29.16	9.07	29.84	-70.23	-54.00	-16.23	Peak

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.5. Transmitter out of band (OOB) emissions

5.5.1. LIMIT

The OOB limits are visualized in Figures 4 and 5; they are descending from the intentional limits from Table3 at f_H/f_L with 10 dB/decade.

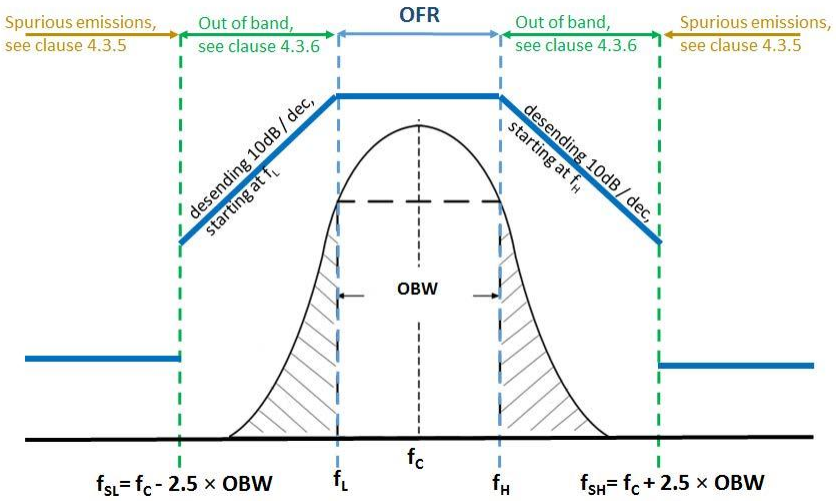


Figure 4: Out of band and spurious domain of a single frequency WPT system

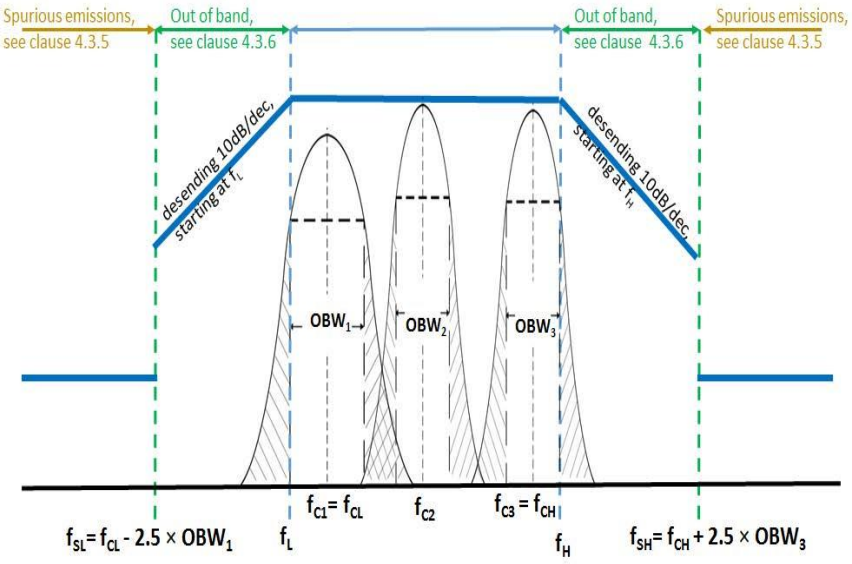


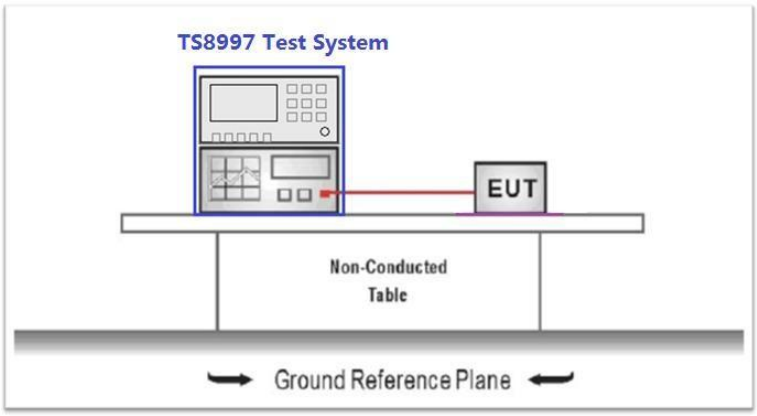
Figure 5: Out of band and spurious domain of a multi - frequency system (during one WPT system cycle time)

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Table 3: H-field limits

Frequency range [MHz]	H-field strength limit [dBµA/m at 10 m]	Comments
0,019 ≤ f < 0,021	72	
0,059 ≤ f < 0,061	69,1 descending 10 dB/dec above 0,059 MHz	See note 1
0,079 ≤ f < 0,090	67,8 descending 10 dB/dec above 0,079 MHz	See note 2
0,100 ≤ f < 0,119	42	
0,119 ≤ f < 0,135	66 descending 10 dB/dec above 0,119 MHz	See note 1
0,135 ≤ f < 0,140	42	
0,140 ≤ f < 0,1485	37,7	
0,1485 ≤ f < 0,30	-5	
6,765 ≤ f < 6,795	42	
NOTE 1: Limit is 42 dBµA/m for the following spot frequencies: 60 kHz ± 250 Hz and 129,1 kHz ± 500 Hz. NOTE 2: At the time of preparation of the present document the feasibility of increased limits for high power wireless power transmission systems to charge vehicles [i.4] was prepared. New specific requirements for such systems (e.g. higher H-field emission limits in the 79 - 90 kHz band) will be reflected within a future revision of the present document.		

5.5.2. TEST CONFIGURATION



5.5.3. TEST PROCEDURE

1.The test conditions.

☒ Normal conditions ☐ Extreme conditions

2.Please refer to ETSI EN 303417 (V.1.1.1) Sub-clause 6.2.1 for the measurement method.

5.5.4. TEST MODE:

Continuously transmitting at the lowest ,and the highest channel

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.5.5. TEST RESULTS

For WPT system

Frequency range (KHz)	Level (dBμA/m)@3m	Level (dBμA/m)@10m	Limit (dBμA/m)@10m	Result
110-2.5OBW	-26.65	-57.84	41.85	Pass
110-0.5OBW	-7.25	-38.44	42.00	Pass
205+0.5OBW	-8.25	-28.92	-5.00	Pass
205+2.5OBW	-27.68	-58.85	-5.01	Pass

Note:
1. H_{10m}= H3m-C3
2. The correct factor C3 is equal to or approximately equal to 31.4dB

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.6. Receiver blocking

5.6.1. LIMIT

The receiver blocking limits in Table 6 shall be fulfilled.

Table 6: Receiver blocking limits

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

5.6.2. TEST CONFIGURATION

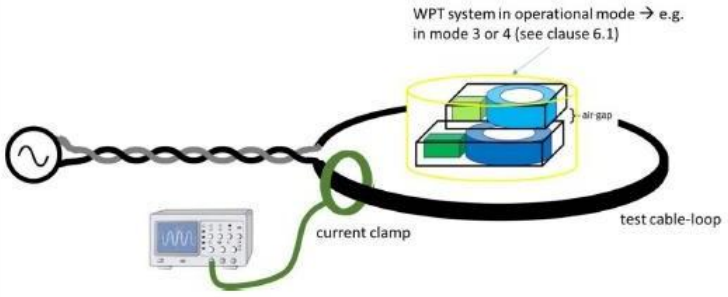
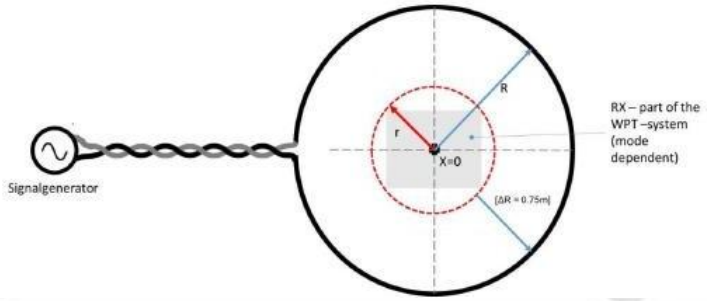


Figure 11: Schematic test set-up for the RX-blocking test



5.6.3. TEST PROCEDURE

1.The test conditions.

☒ Normal conditions ☐ Extreme conditions

2.Please refer to ETSI EN 303417 (V.1.1.1) Sub-clause 6.3.2 for the measurement method.

5.6.4. TEST MODE:

Continuously transmitting at the lowest, and the highest channel

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

5.6.5. TEST RESULTS

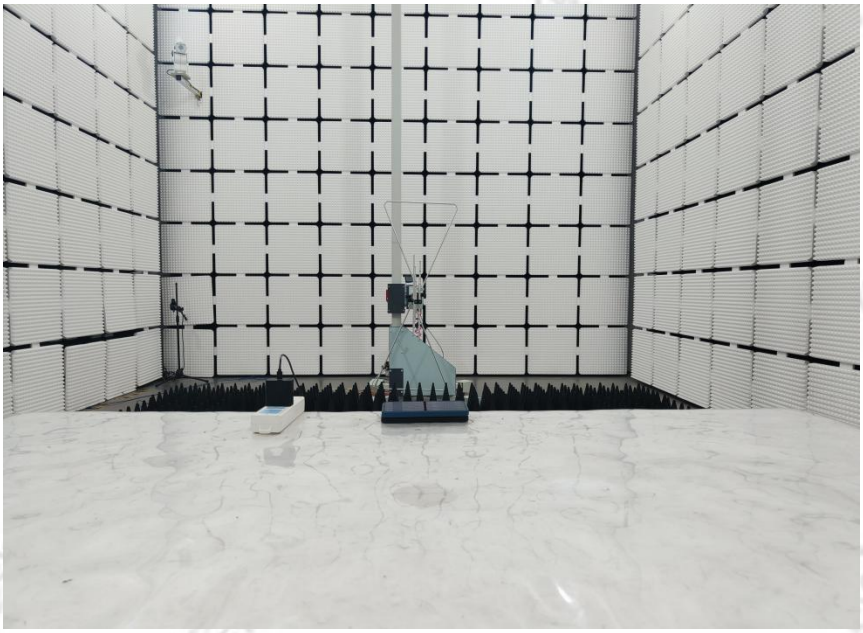
	Frequency (KHz)	Signal level field strength at the EUT	performance criteria	Result
In-band signal	fc	71 dBμA/m	The EUT can be used as intended without degradation of performance.	PASS
OOB signal	fc+F	70 dBμA/m		
	fc-F			
Remote-band signal	fc+10 × F	80 dBμA/m		
	fc-10 × F			
NOTE: F = OFR, fc=Centre frequency				

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

Frequency Spurious（Below 30MHz）

Frequency Spurious（30 MHz to 1 GHz）



********THE END REPORT********

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Test Report

EN IEC 62311:2020

For

Product: Wireless Charger

Model: MO2651

Report No.: RKEYS250731243

Issued for

Mid Ocean Brands B.V.

Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.

Issued by

Guangdong KEYS Testing Technology Co.,Ltd.

Address: Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China

Scan to view the original file

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

1 TEST RESULT CERTIFICATION

Applicant's name	:	Mid Ocean Brands B.V.
Address	:	Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacture's name	:	117486
Address	:	N/A
Product name	:	Wireless Charger
Model name	:	MO2651
Series model	:	N/A

This report shall not be reproduced except in full, without the written approval of KEYS, this document may be altered or revised by KEYS, personal only, and shall be noted in the revision of the document.

Sample Received Date:	Jul.31, 2025
Date (s) of performance of tests:	Jul.31, 2025 to Aug.05, 2025
Date of Issue:	Aug.05, 2025
Test Result:	Pass

Prepared by:

Linda Chen / Engineer

Approved by:

Bruce Zhang / Manager

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

CONTENTS

1 TEST RESULT CERTIFICATION 2

2 GENERAL INFORMATION 4

2.1 GENERAL DESCRIPTION OF E.U.T. 4

3 RF EXPOSURE EVALUATION 5

3.1 STANDARD 5

3.2 LIMITS 5

3.3 TEST RESULT 6

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

2 General Information

2.1 General Description of E.U.T.

Product Name	:	Wireless Charger
Model Name	:	MO2651
List Model	:	N/A
RF Specification	:	110-205kHz
Hardware Version	:	/
Software Version	:	/
Test Voltage:	:	Model: MOB/MO2651 Input: DC 9V 2A, 5V 2A Output: DC 5V 1A, 7.5V 1A, 9V 1.1A, 9V 1.67A
Power supply	:	N/A
Note: N/A		

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

3 RF Exposure Evaluation

3.1 Standard

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

3.2 Limits

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/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

Notes:

1. f as indicated in the frequency range column.
2. For frequencies between 100 kHz and 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any $68/f^{1.05}$ -minute period (f in GHz).
4. No E-field value is provided for frequencies < 1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m. Spark discharges causing stress or annoyance should be avoided.

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection. This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

3.3 Test Result

E-Field:

Frequency (kHz)	Front(V/m)	Left(vim)	Right(v/m)	Rear(V/m)	Top (V/m)	Limit (V/m)	Result
138	72.3	69.6	71.1	68.5	75.6	83	PASS

H-Eield:

Frequency (kHz)	Front(A/m)	Left(A/m)	Right(A/m)	Rear(A/m)	Top (A/m)	Limit (A/m)	Result
138	4.3	3.9	4.6	4.2	4.3	5	PASS

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.

Note: 1. The maximum Power comes from manufacture's declaration.

2. The assess distance is 20cm.

Based on the above assessment, this product comply with the human exposure restrictions.

The Notice in Installation Manual should state as below:

The user must maintain a minimum distance of 20 cm from the device at all time.

****** End of Report ******

This report is only responsible for the test results of the samples submitted for inspection, and is not responsible for the source of the samples submitted for inspection.
This report shall not be altered, increased or deleted. Without written approval of KEYS, this test report shall not be copied except in full and published as advertisement.