

Prüfbericht-Nr.: <i>Test report no.:</i>	CN21HXS0 001	Auftrags-Nr.: <i>Order no.:</i>	168337754	Seite 1 von 15 <i>Page 1 of 15</i>	
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2021-10-06		
Auftraggeber: <i>Client:</i>	MAGNUM BRANDS LTD Unit L, Braintree Industrial Estate Braintree Road HA4 0EJ, Ruislip, LONDON, United Kingdom				
Prüfgegenstand: <i>Test item:</i>	wireless charging pad				
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	7376201, 7376202, 7376203, TCWIRCBPRM, TCWIRCPPRM, TCWIRCWCPRM				
Auftrags-Inhalt: <i>Order content:</i>	Test Report				
Prüfgrundlage: <i>Test specification:</i>	FCC CFR Title 47, Part 15, Subpart C, Section 15.207 FCC CFR Title 47, Part 15, Subpart C, Section 15.209 FCC CFR Title 47, Part 2, Subpart J, Section 2.1091 KDB 680106 D01 v03r01				
Wareneingangsdatum: <i>Date of sample receipt:</i>	2021-10-11	Please refer to Photo Document			
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003132733-001 A003141736-001				
Prüfzeitraum: <i>Testing period:</i>	2021-10-12 – 2021-10-14				
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von: <i>tested by:</i>	 Lin Lin	genehmigt von: <i>authorized by:</i>	 Hardy Suo		
Datum: <i>Date:</i>	2021-10-26	Ausstellungsdatum: <i>Issue date:</i>	2021-10-26		
Stellung / Position:	Senior Project Manager	Stellung / Position:	Technical Certifier		
Sonstiges / Other:	FCC ID: 2AXUXTCWIRC				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>				
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend 3 = satisfactory	4 = ausreichend 4 = sufficient	5 = mangelhaft N/A = nicht anwendbar N/T = nicht getestet 5 = poor N/A = not applicable N/T = not tested
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory	4 = sufficient	5 = poor N/A = not applicable N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

V05

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.3 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Accreditation Designation No.: CN1260

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2022-08-10
Signal Analyzer	R&S	FSV 40	101439	2022-08-09
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2022-08-09
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2022-08-09
Amplifier	R&S	SCU-18F	180070	2022-08-09
Amplifier	R&S	SCU40A	100475	2022-08-09
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2022-08-08
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-09-13
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2022-08-10
Artificial Mains Network	R&S	ENV216	102333	2022-08-10
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty
Radiated Emission of Transmitter, valid up to 26.5 GHz	±6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±6 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	±3.70 dB / ±3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a wireless charging pad, which supports wireless charging (WPT) function.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	wireless charging pad
Type Designation:	7376201, 7376202, 7376203, TCWIRCBPRM, TCWIRCPRM, TCWIRCWCPRM Note: According to manufacturer's declaration, all models are identical except model name.
FCC ID:	2AXUXTCWIRC
Testing Voltage:	AC 120V, 60Hz
Technical Specification of WPT	
Frequency Range:	110~205KHz
Type of Modulation:	FSK
Antenna Type:	Induction coil
Wireless output:	Max. 10W

3.3 Independent Operation Modes

The basic operation modes are:

- A. On (Wireless charging 5W and 10W)
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Rating Label
- Block Diagram
- Operation Description

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.2, all tests were performed on model 7376201 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 3: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Remark
Mobile Phone	HUAWEI	Mate30	N/A	N/A
Wireless Dummy loader	N/A	N/A	N/A	Provided by Applicant
Adapter	MI	MDY-10-EX	N/A	Input: 100-240VAC, 50/60Hz, 1.2A Output: 5V,3A/ 9V,3A/ 10V/4A/ 20V,2.25A
Adapter	MI	MDY-10-EH	N/A	Input: 100-240VAC, 50/60Hz, 0.7A Output: 5V,3A/ 9V,3A/ 12V/2.25A/ 20V,1.35A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

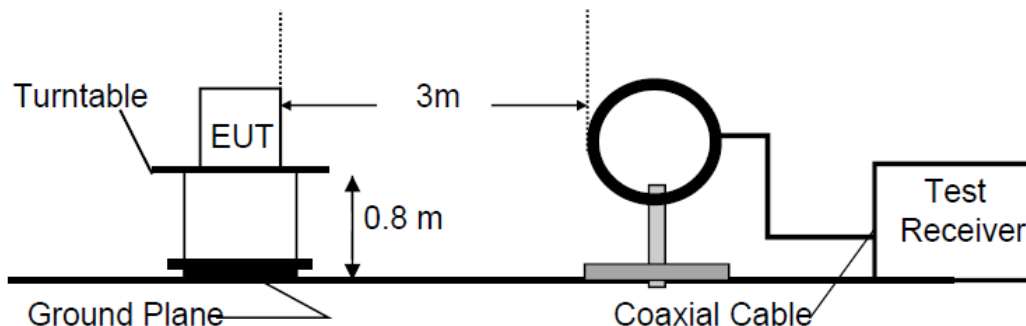


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

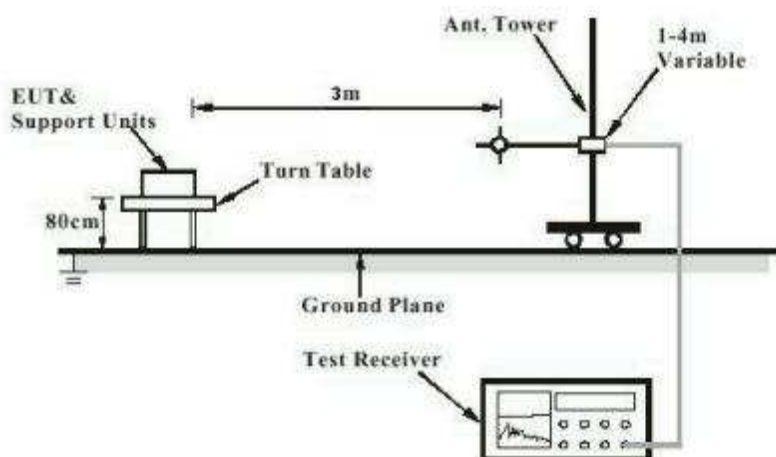
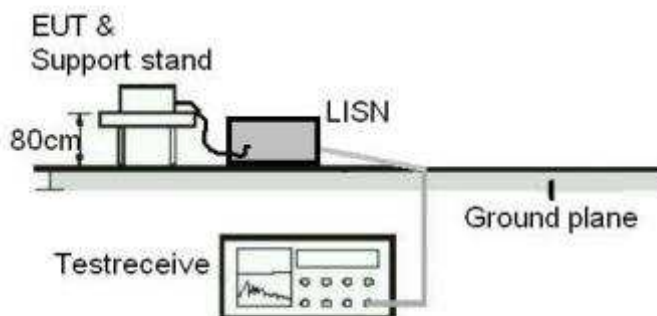


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.203

Note: According to the manufacturer declared, the EUT has an internal antenna, and the antenna is permanent attachment and no consideration of replacement, Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.209 & 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2021-10-12 to 2021-10-14
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.3 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.207
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	150KHz - 30MHz
Limits	:	FCC Part 15.207(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2021-10-12
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Earthing	:	Not connected
Ambient temperature	:	23.1 °C
Relative humidity	:	52 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

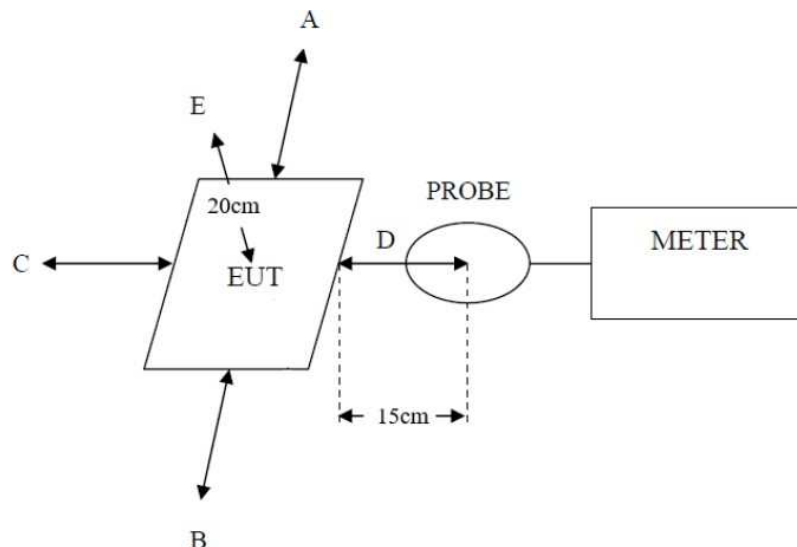
RESULT:
Pass
Test Specification

Test standard : FCC CFR Title 47, Part 2, Subpart J, Section 2.1091
 : FCC CFR Title 47, Part 1, Subpart I, Section 1.1310
 KDB 680106 D01 v03r01

According to the table 1 of FCC Part 1, Subpart I, Section 1.1310, the reference limit as below:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Test Setup:


Test Result:

Table: H-Field Strength at 15 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

EUT Test Mode	Measured H-Field Strength Values (A/m)					50% Limit (A/m)	Limit (A/m)	Result
	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E			
Device working at the maximum power	0.2296	0.2832	0.2384	0.2496	0.2584	0.815	1.63	Pass

7 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

8 List of Tables

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