



Test report No:
NIE: 62807REM.002

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

(*) Identification of item tested	Wireless Charger Module (WCM)
(*) Trademark	Harman
(*) Model and /or type reference	VW WLC
Other identification of the product	HW Version: 02.00 SW Version: 00.10.05
(*) Features	No additional features except smartphone charging and Foreign Object detection
Manufacturer	Harman International Industries, Inc. 30001 Cabot Drive. 48377 Novi, Michigan. USA
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López Martín EMC Consumer & RF Lab. Manager
Date of issue	2020-08-13
Report template No	FDT08_22 (*) "Data provided by the client"

Index

Competences and guarantees	3
General conditions	3
Uncertainty	3
Data provided by the client.....	3
Usage of samples	4
Test sample description	4
Identification of the client.....	5
Testing period and place.....	5
Document history	5
List of equipment used during the test.....	6
Environmental conditions	7
Remarks and comments	8
Testing verdicts.....	8
Summary	8
Appendix A: Test results	9

Competences and guarantees

DEKRA Testing and Certification is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is a FCC recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report, FCC designation number ES0004.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

DEKRA Testing and Certification is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $I = \pm 4,9$ dB for quasi-peak measurements, $I = \pm 4,6$ dB for peak measurements ($k=2$).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample of VW WLC model is a wireless charger which is a device that enables charging the battery of a smartphone or any other device that is Qi compliant using magnetic induction up to the power of 10W.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples under test have been selected by: The client.

Sample S/01, is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
62807F/002	Wireless Charger Module (WCM)	VW WLC	VWZGZ1W3500680	2020-06-16

Auxiliary elements used with the sample S/01:

Control N°	Description	Model	Serial N°	Date of reception
62807F/010	DC power cable	---	---	2020-06-16

Test sample description

Ports:	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
		N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Supplementary information to the ports..... :							
Rated power supply 9V to 16V	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	<input type="checkbox"/> AC:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/> DC: 9V to 16V						
Rated Power	10W						
Clock frequencies.....	127kHz						
Other parameters	--						
Software version	00.10.05						
Hardware version	02.00						
Dimensions in cm (W x H x D)	146 X 88 X 20						
Mounting position	<input checked="" type="checkbox"/>	Tabletop equipment					
	<input type="checkbox"/>	Wall/Ceiling mounted equipment					
	<input type="checkbox"/>	Floor standing equipment					
	<input type="checkbox"/>	Hand-held equipment					
	<input type="checkbox"/>	Other:					

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	Wireless charger	Up to 10W	Harman Brazil
Accessories (not part of the test item)	Description	Type	Manufacturer
	Receiver for 1%.	Wireless Charger receivers	Harman
	Receiver for 50%.	Wireless Charger receivers	Harman
	Receiver for 99%.	Wireless Charger receivers	Harman
	Wiring Harness		Harman
	Load Boxes if required		Harman
Documents as provided by the applicant.....:	Description	File name	Issue date

Identification of the client

Harman International Industries, Inc.
30001 Cabot Drive. 48377 Novi,
Michigan. USA

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-06-22
Date (finish)	2020-06-22

Document history

Report number	Date	Description
62807REM.002	2020-08-13	First release

List of equipment used during the test

Control Number	Description	Model	Manufacturer	Next Calibration
4523	EMI TEST RECEIVER 20Hz-26.5GHz	ESU26	ROHDE AND SCHWARZ	2022-05-27
5641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2021-07-31
6064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	Frankonia	---
6126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2021-04-17
6132	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2021-04-20
6329	SHIELDED ROOM		FRANKONIA	---

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The test have been performed by the technical personnel: Antonio Ruiz.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

Emission Test		
Requirement – Test case	Verdict	Remark
Radiated emission. Electromagnetic field measure (30 MHz – 1000 MHz)	P	-
Radiated emission. Electromagnetic field measure (1 GHz – 12.75 GHz)	N/A	(1)
Radiated emission. Electromagnetic field measure (12.75 GHz – 26 GHz)	N/A	(1)
Continuous conducted emission (150 KHz – 30 MHz)	N/A	(2)
<u>Supplementary information and remarks:</u> (1) Range: $f > 1$ GHz. Test required only if the 5th harmonics of the maximum internal work frequency EUT. (2) Equipment powered in DC.		

Appendix A: Test results

Appendix A Content

DESCRIPTION OF THE OPERATION MODES..... 11

RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE..... 12

DESCRIPTION OF THE OPERATION MODES

The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. Waiting to charge a receiver. Power supply: 12Vdc
OM#02	EUT ON. Wireless charging mode. Maximum load (worst case). Power supply: 12 Vdc.

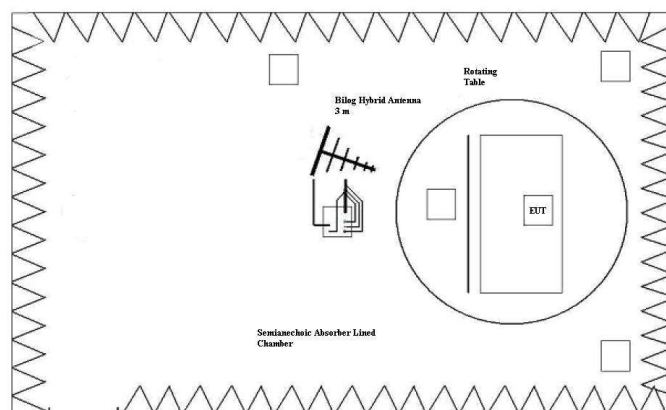
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

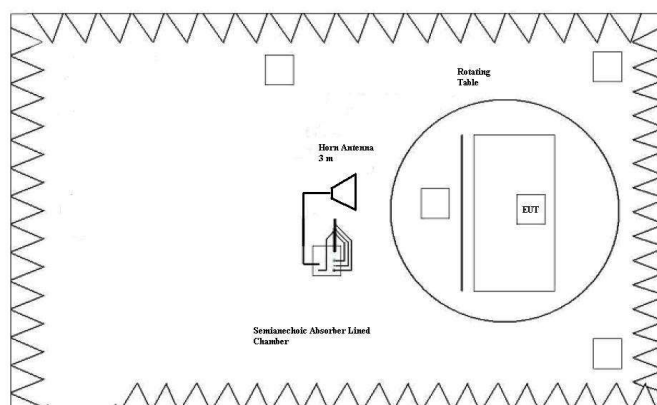
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2019)

Frequency of emission (MHz)	Field strength (microvolt/meter)
30-88	100
88-216	150
21-960	200
Above 960	500



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

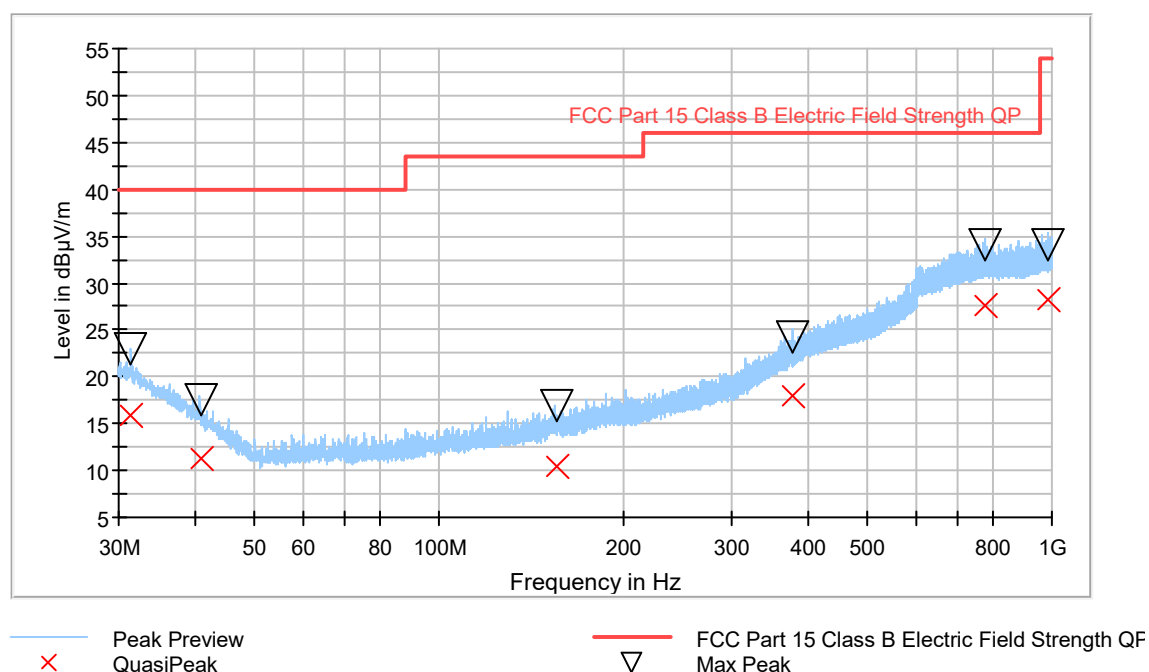
TESTED SAMPLE:	S/01
TESTED OPERATION MODES:	OM#01 & OM#02
TEST RESULTS:	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0102LR	Range: 30 MHz - 1000 MHz.	P

Radiated Emission. CR0101LR

Project: 62807REM.002
Company: Harman International Industries, Inc.
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Waiting to charge a receiver. Power supply: 12Vdc

RE FCC Part 15 Class B



Maximizations

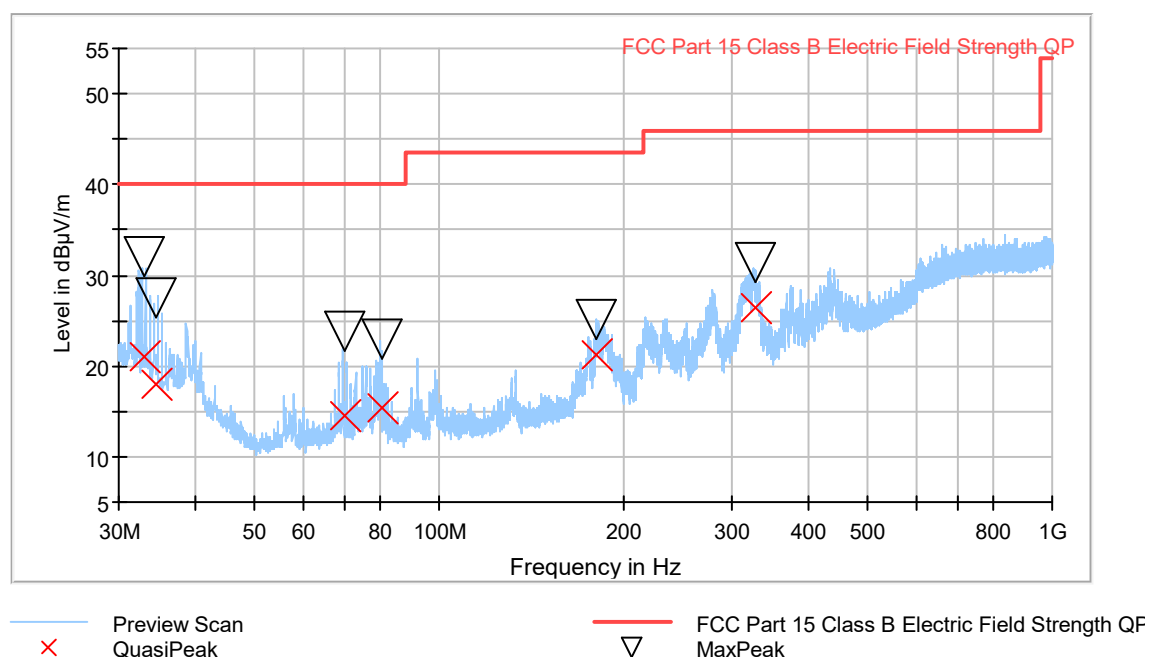
Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
31.441000	15.94	22.99	232.0	H	118.0
40.821000	11.33	17.57	204.0	H	-20.0
155.187000	10.44	16.89	111.0	V	-116.0
377.401000	17.91	24.17	343.0	H	-155.0
776.810000	27.49	34.01	174.0	V	128.0
988.275000	28.22	34.18	143.0	H	-33.0

Radiated Emission. CR0102LR

Project: 62807REM.002
Company: Harman International Industries, Inc.
Sample: S/01
Operation mode: OM#02
Description: EUT ON. Wireless charging mode. Maximum load (worst case). Power supply: 12 Vdc.

RE FCC Part 15 Class B

Full Spectrum



Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Azimuth (deg)
33.045000	20.97	31.98	40.00	19.03	V	-130.0
34.465000	17.92	27.61	40.00	22.08	V	155.0
69.954000	14.43	23.76	40.00	32.57	V	15.0
80.492000	15.42	22.98	40.00	32.58	V	-158.0
180.545000	21.31	25.23	43.52	32.21	V	146.0
327.200000	26.52	31.46	46.00	30.48	V	141.0