

Test report No:
80708REM.002

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B
(10-1-23 Edition) & ICES-003 Issue 7 (October 2020)

(*) Identification of item tested	Headunit with Display and TP, USB, BT and WLAN
(*) Trademark	HARMAN
(*) Model and /or type reference	SPACE 4 BASE 1.1A
Other identification of the product	FCC ID: T8GSPACE4B11 IC: 6434A-SPACE4B11
(*) Features	Bluetooth, WLAN HW version: DV2 SW version: R11
Manufacturer	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH Becker-Goering-Str. 16 76307, Karlsbad, GERMANY
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez EMC Consumer & RF Lab. Manager
Date of issue	2024-12-11
Report template No	FDT08_25 (*) "Data provided by the client"



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Acronyms

Acronym ID	Acronym Description
Code	EMC Test Code
Freq Rng	Frequency Range
MP	Measurement Point
OM	Operation Mode
S/	Sample
V	Verdict

Competences and guarantees

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

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DEKRA Testing and Certification S.A.U. 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.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Testing and Certification S.A.U.
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Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Testing and Certification S.A.U. 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).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 26 GHz is $I = \pm 2,6$ dB for peak and average 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 consists of an Headunit with Display and TP, USB, BT and WLAN.

3. Declaration of similarity for SW version:

HARMAN AUTOMOTIVE DIVISION
HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
BECKER-GÖRING-STRASSE 16
76307 KARLSBAD, GERMANY
E-MAIL: STEFAN.BLASCHKE@HARMAN.COM



Harman Becker Automotive Systems GmbH | Postfach 2260 | 76303 Karlsbad
To whom it may concern

Karlsbad, 27.11.2024

SW-Declaration for model: SPACE 4 BASE 1.1A

Dear Ladies and Gentlemen,

we, Harman Becker Automotive Systems GmbH herewith confirm, that the product used for RED/FCC testing had the following HW/SW configuration:

Model: SPACE 4 BASE 1.1A
HW: DV2
SW: R11

Hint: On the product label you can find the SW version "SW: RB09.1.1" – this was printed in the production, but before doing the measurements the units have been updated.

In case of any question please do not hesitate and contact us. Thank you

Regards


Stefan Blaschek
Regulatory Compliance Management

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Sitz der Gesellschaft: Karlsbad | Amtsgericht Mannheim: HRB-Nr. 361395

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results. The laboratory is not responsible for such information and it is not covered by accreditation.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	76426_18.1	Headunit	SPACE 4 BASE 1.1A	Z0681A000041379321A0694E0015	2024-10-03	Element Under Test
S/01	76426_19.1	Harness	--	--	2024-10-03	Auxiliary element

Notes referenced to samples during the project:

Id	Note
S/01	Sample used for testing

Test sample description

Ports..... :	Port name and description		Cable				
			Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾	
	Main Connector		2m	[X]	[]	[]	
	USB Connector			[X]	[X]	[]	
	GPS/FVC/RVC			[X]	[X]	[]	
--							
Supplementary information to the ports..... :							
Rated power supply	Voltage and Frequency			Reference poles			
				L1	L2	L3	N
	[]	AC:	[]	[]	[]	[]	[]
[X]		DC: 12V car battery /attenuator (9,5-15,5v normal operation)					
Rated Power	--						
Clock frequencies.....:	--						
Other parameters	--						
Software version	R11						
Hardware version	DV2						
Dimensions in cm (W x H x D)	--						
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[]	Hand-held equipment					
	[X]	Other: automotive					
Modules/parts.....:	Module/parts of test item			Type		Manufacturer	
	--						
Accessories (not part of the test item)	Description			Type		Manufacturer	
	--						
Documents as provided by the applicant	Description			File name		Issue date	
	--						

⁽³⁾ Only for Medical Equipment

Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Becker-Goering-Str. 16
76307, Karlsbad, GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2024-10-18
Date (finish)	2024-10-18

Document history

Report number	Date	Description
80708REM.002	2024-12-11	First release

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. = 860mbar Max. = 1060mbar

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. = 860mbar Max. = 1060mbar

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. = 860mbar Max. = 1060mbar

Remarks and comments

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

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P
Partial Passed	P*

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
06064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	FRANKONIA	N/A
06329	SHIELDED ROOM	--	FRANKONIA	N/A
06132	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2025-04-09
06126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2025-04-04
03541	HYBRID BILOG ANTENNA 30MHz-6GHz	JB6	SUNOL SCIENCES CORPORATION	2024-11-15
08866	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-06-12
06496	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK	2026-12-01
09360	PRE-AMPLIFIER G>40dB 1-18 GHz	BLMA 0118-1M	BONN ELEKTRONIK	2025-08-05
04657	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2026-06-12
08856	PRE-AMPLIFIER G>30dB 17-40GHz	BLMA 1840-4A	BONN ELEKTRONIK	2025-02-27
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A

Summary

Test Specification	Requirement – Test case	Verdict	Remark
FCC CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020)	RE Radiated emission. Electromagnetic field measure	P	(1)
	CE Continuous conducted emission	N/A	---
<u>Supplementary information and remarks:</u> (1) Test required only to the 5th harmonics of the maximum internal work frequency in the EUT. (2) According to the standard, this test is not applicable because EUT is powered in DC.			

Appendix A: Test results

Appendix A content

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Description of the operation modes

The operation modes described in this paragraph constitute a functionality of the sample under test for itself.
The operation modes used by the samples to which the present report refers, are shown in the following table:

Id	Description
OM/01	EUT ON. 3xBluetooth, WiFi 2,4GHz and WiFi 5GHz OFF. Power supply: 12Vdc.

Test standards version applied

The product standards and test standards applied for each test cases are shown in the following table:

Product Test Standard	Test standard	Requirement – Test case
FCC CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020)	ANSI C63.4 (2014)	RE Radiated emission.

Test Cases Details

RE Radiated emission. Electromagnetic field measure

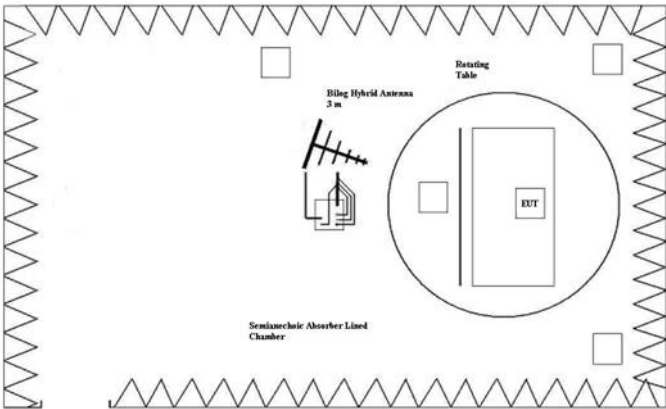
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according to the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-23 Edition), Secs. 15.109 & ICES-003 Issue 7 (October 2020)

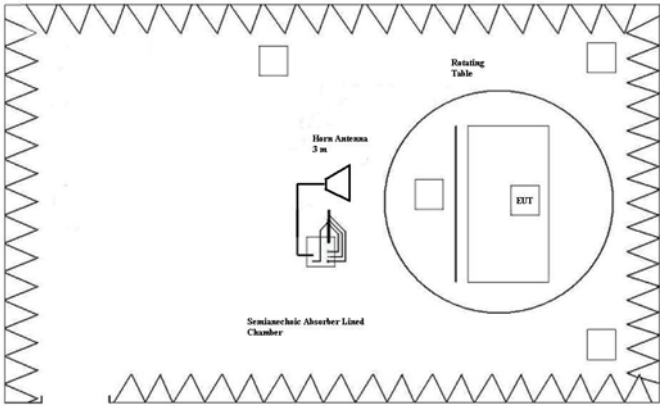
Frequency range (MHz)	FCC Part 15B		ICES-003 Issue 7		FCC Part 15B & ICES-003 Issue 7	
	QP Limit for 3 m		QP Limit for 3 m		PK Limit for 3 m	AVG Limit for 3 m
	(μ V/m)	(dB μ V/m)	(μ V/m)	(dB μ V/m)	(dB μ V/m)	(dB μ V/m)
30 to 88	100	40	100	40	---	---
88 to 216	150	43.5	150	43.5	---	---
216 to 230	200	46	200	46	---	---
230 to 960	200	46	224	47		
960 to 1000	500	54	500	54	---	---
Above 1000	---	---	---	---	74	54

Limits according to FCC Part 15B, are equal or more stringent than those of ICES-003 Issue 7.

Setup for measurements



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

Results

S/	OM	Code	Freq Rng (MHz)	V
01	OM/01	RE0101LR	[30, 1000]	P
01	OM/01	RE0101HR1	[1000, 17000]	P
01	OM/01	RE0101HR2	[17000, 26000]	P

Verdict

Pass

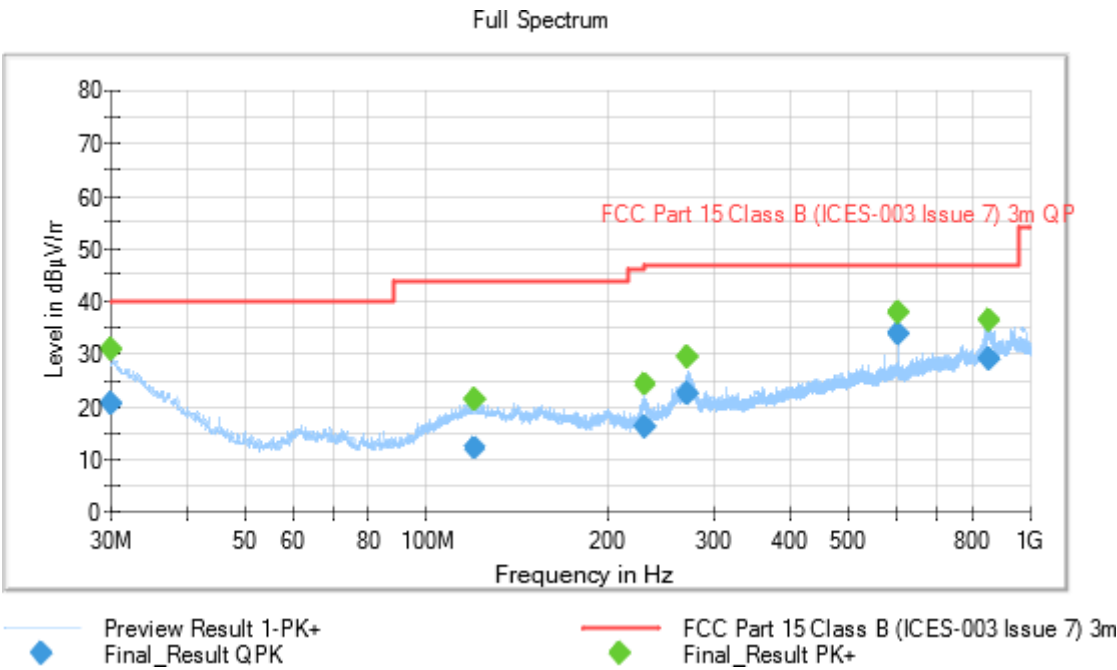
Attachments

EMC Test Code = RE0101LR Frequency Range MHz = [30, 1000]

Sample ID: S/01

Operation Mode: OM/01

Images:



Tables:

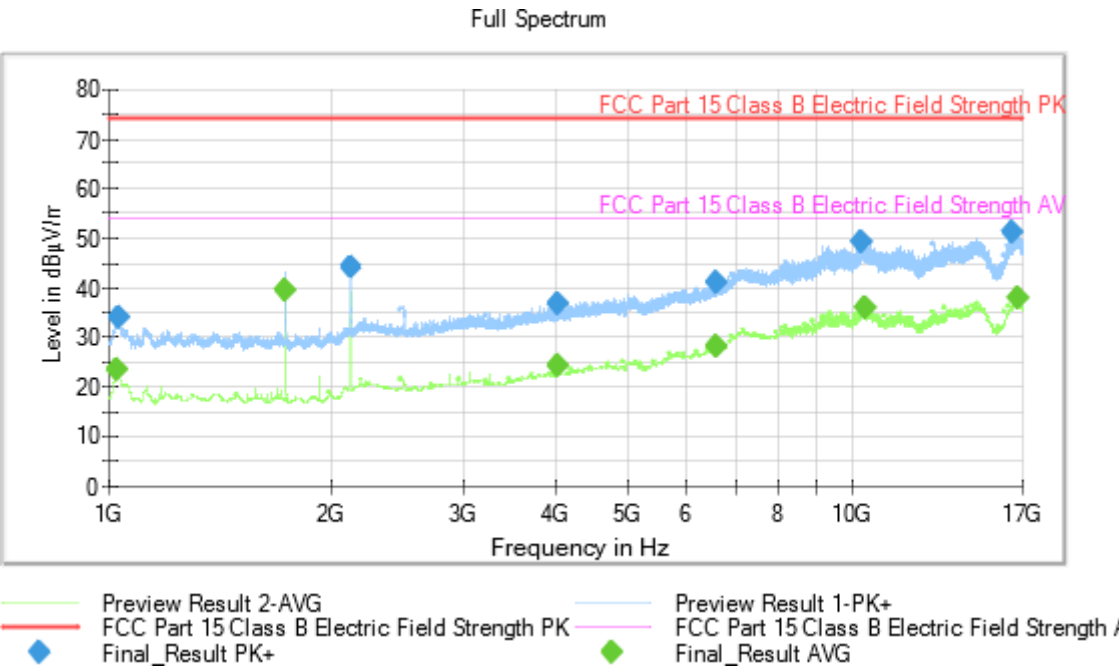
Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
30.025840	20.56	---	40.00	19.44	194.0	V	169.0
30.025840	---	30.78	---	---	194.0	V	169.0
120.233000	11.93	---	43.52	31.59	216.0	V	115.0
120.233000	---	21.17	---	---	216.0	V	115.0
230.323000	16.29	---	47.00	30.71	114.0	V	-149.0
230.323000	---	24.11	---	---	114.0	V	-149.0
271.280000	22.31	---	47.00	24.69	128.0	H	-108.0
271.280000	---	29.49	---	---	128.0	H	-108.0
604.323000	33.62	---	47.00	13.38	139.0	H	155.0
604.323000	---	37.76	---	---	139.0	H	155.0
854.860000	29.10	---	47.00	17.90	184.0	H	170.0
854.860000	---	36.51	---	---	184.0	H	170.0

EMC Test Code = RE0101HR1 Frequency Range MHz = [1000, 17000]

Sample ID: S/01

Operation Mode: OM/01

Images:



Tables:

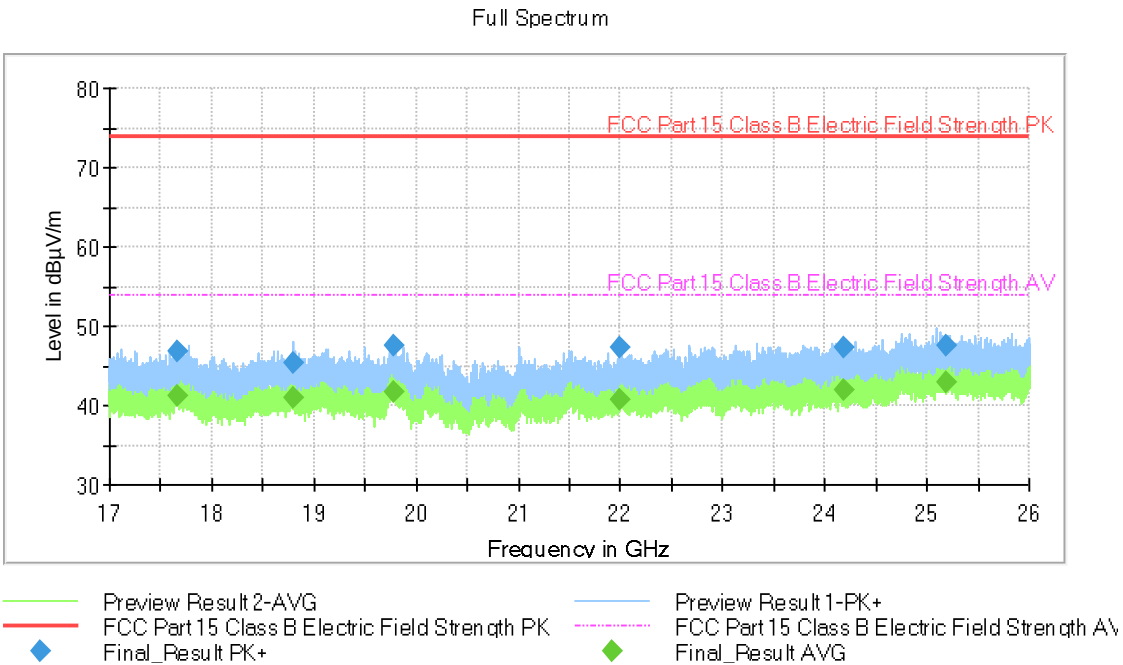
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol
1025.500000	---	23.52	53.97	30.45	V
1028.750000	34.02	---	73.97	39.95	V
1728.000000	---	39.60	53.97	14.37	H
2112.250000	44.12	---	73.97	29.85	H
4031.250000	36.87	---	73.97	37.10	V
4032.500000	---	24.18	53.97	29.79	V
6597.750000	41.10	---	73.97	32.87	H
6600.500000	---	28.14	53.97	25.83	V
10338.250000	49.28	---	73.97	24.69	H
10460.000000	---	35.99	53.97	17.98	V
16521.500000	51.02	---	73.97	22.95	V
16845.500000	---	37.85	53.97	16.12	H

EMC Test Code = RE0101HR2 Frequency Range MHz = [17000, 26000]

Sample ID: S/01

Operation Mode: OM/01

Images:



Tables:

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol
17656.718750	46.76	---	73.97	27.21	H
17656.718750	---	41.20	53.97	12.77	H
18789.875000	45.32	---	73.97	28.65	V
18789.875000	---	40.89	53.97	13.08	V
19772.000000	---	41.75	53.97	12.22	V
19772.000000	47.67	---	73.97	26.30	V
21990.500000	47.31	---	73.97	26.66	V
21990.500000	---	40.77	53.97	13.20	V
24185.093750	---	41.97	53.97	12.00	V
24185.093750	47.33	---	73.97	26.64	V
25178.468750	---	42.83	53.97	11.14	H
25178.468750	47.54	---	73.97	26.43	H