

Test report No:
82069REM.001

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	CIVIC (Central In-Vehicle Infotainment Computer)
(*) Trademark	BOSCH
(*) Model and /or type reference	MBCI2LS4PN1
Other identification of the product	FCC ID: 2AUXS-MBCI2LS4PN1 IC: 25847-MBCI2LS4PN1
(*) Features	HW version: D22 SW version: E326.0
Manufacturer	Robert Bosch GmbH Robert-Bosch-Platz 1, 70839 Gerlingen. 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	2025-03-21
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

DEKRA Testing and Certification S.A.U. 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.

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.

DEKRA Testing and Certification S.A.U. 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 S.A.U. at the time of performance of the test.

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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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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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 12.75 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 CIVIC Central In-Vehicle Infotainment Computer, including WLAN/ Bluetooth, GPS, AM/FM/DAB receiver.

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	80633C_133.1	Headunit	MBCI2LS4PN1	0759610	2025-02-19	Element Under Test
S/01	80633C_10.1	USB-USB adapter			2024-12-18	Auxiliary Element
S/01	80633C_100.1	Fakra 4x1 cable			2024-12-20	Auxiliary Element
S/01	80633C_103.1	Antenna			2024-12-20	Auxiliary Element
S/01	80633C_104.1	Antenna			2024-12-20	Auxiliary Element
S/01	80633C_105.1	Antenna			2024-12-20	Auxiliary Element
S/01	80633C_106.1	Antenna			2024-12-20	Auxiliary Element
S/01	80633C_43.1	Harness			2024-12-18	Auxiliary Element
S/01	80633C_6.1	Fakra 1X4 cable			2024-12-18	Auxiliary Element
S/01	80633C_61.1	Fakra / Ethernet - VGA Cable			2024-12-19	Auxiliary Element
S/01	80633C_8.1	Fakra-USB cable			2024-12-18	Auxiliary Element
S/01	80633C_9.1	Harness			2024-12-18	Auxiliary Element

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]	[]	[]	
	Most Connector		2m	[X]	[]	[]	
	Fakra Quad Connector AM			[X]	[X]	[]	
	Fakra Quad Connector FM			[X]	[X]	[]	
	Fakra Quad Connector DAB			[X]	[X]	[]	
	Fakra Single Connector GPS			[X]	[X]	[]	
	Fakra Quad Connector WLAN			[X]	[X]	[]	
	Fakra Quad Connector BT			[X]	[X]	[]	
--			[]	[]	[]		
Supplementary information to the ports.....:							
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[]	AC:	[]	[]	[]	[]	[]
[X]	DC: 12Vdc						
Rated Power							
Clock frequencies.....:							
Other parameters							
Software version		E326.0					
Hardware version		D22					
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: Other: Cluster in the car					
Modules/parts.....:	Module/parts of test item			Type		Manufacturer	

Accessories (not part of the test item):	Description	Type	Manufacturer
	Antennas		
	HUD		
	SA2 Panel		
	Cameras		
Documents as provided by the applicant.....:	Description	File name	Issue date

⁽³⁾ Only for Medical Equipment

Identification of the client

Robert Bosch GmbH
Robert-Bosch-Strasse 200
31139 Hildesheim, GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2025-02-27
Date (finish)	2025-03-12

Document history

Report number	Date	Description
82069REM.001	2025-03-21	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: Miguel Manuel López Guzmán.

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
08866	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-06-12
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
04612	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2027-10-15
04657	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2026-06-12
05641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2027-10-23
08856	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-4A	BONN ELEKTRONIK	2025-02-27
09360	PRE-AMPLIFIER G>40dB 1-18 GHz	BLMA 0118-1M	BONN ELEKTRONIK	2025-08-05
06064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	Frankonia	--
06329	SHIELDED ROOM	--	FRANKONIA	--
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--

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)
FCC CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020)	CE Continuous conducted emission	N/A	(2)
<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 standards, 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. Bluetooth, Wifi 2.4GHz and Wifi 5GHz OFF. GNSS module pending to receive satellites signals. Radio Receiving broadcast signal at 98 MHz FM. Power supply: 12 Vdc.

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.
	ANSI C63.4 (2014)	CE Continuous conducted emission

Test Cases Details

FCC 47 CFR Part 15B

RE Radiated emission. Electromagnetic field measure

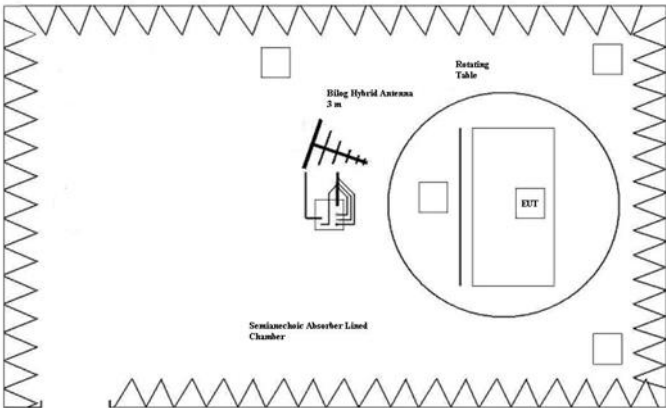
Limits of interference Class B

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)

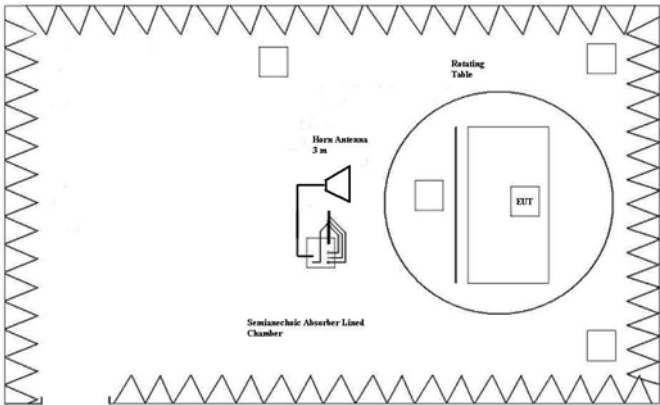
Frequency range (MHz)	FCC Part 15B		ICES-003 Issue 7		FCC Part 15B & ICES-003 Issue 7	
	QP Limit for 3 m		QP Limit for 3 m		PK Limit for 3 m	AVG Limit for 3 m
	($\mu\text{V/m}$)	(dB $\mu\text{V/m}$)	($\mu\text{V/m}$)	(dB $\mu\text{V/m}$)	(dB $\mu\text{V/m}$)	(dB $\mu\text{V/m}$)
30 to 88	100	40	100	40	---	---
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

SI	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

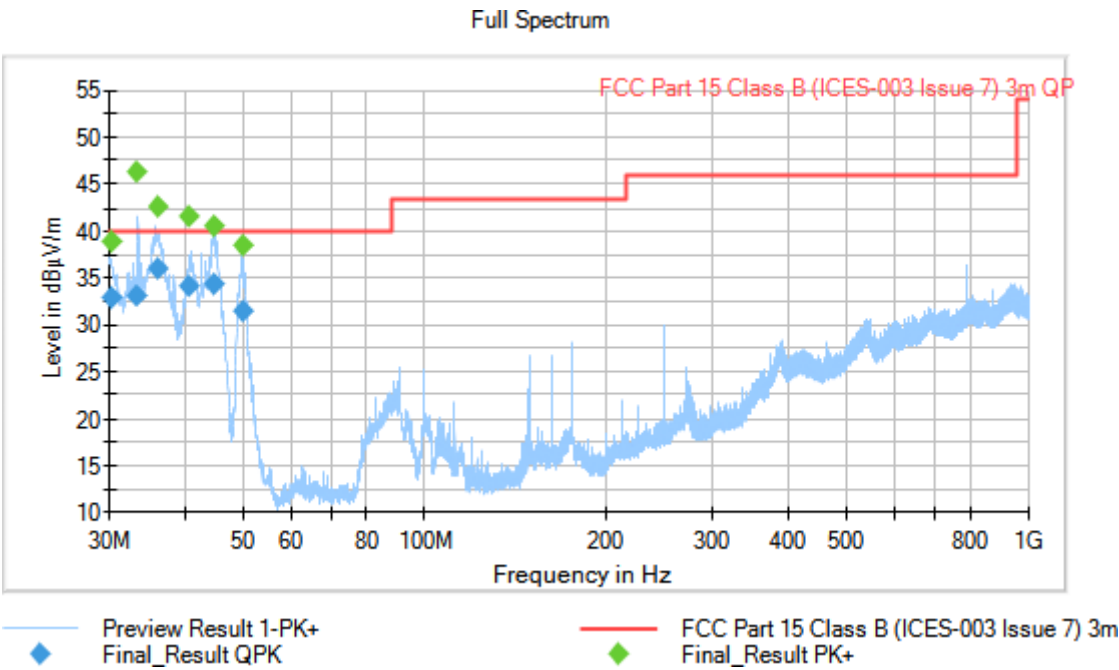
Attachments

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

Sample ID: S/01

Operation Mode: OM/01

Images:



Tables:

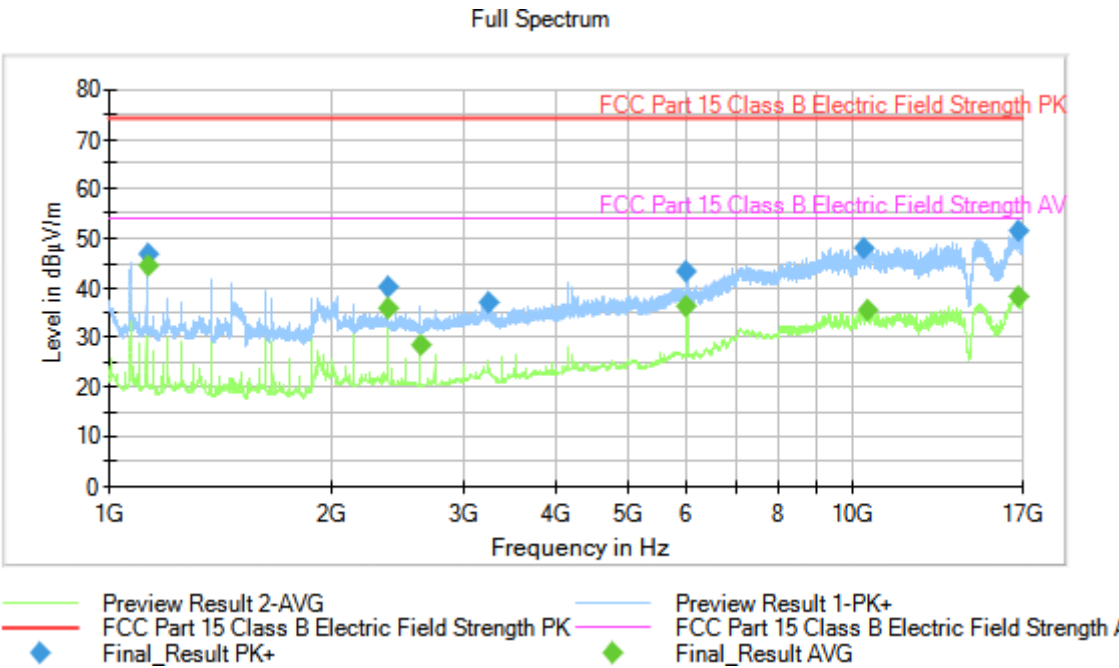
Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
30.156140	32.93	---	40.00	7.07	114.0	V	-18.0
30.156140	---	38.99	---	---	114.0	V	-18.0
33.339000	---	46.42	---	---	171.0	V	31.0
33.339000	33.20	---	40.00	6.80	171.0	V	31.0
36.105000	35.92	---	40.00	4.08	115.0	V	40.0
36.105000	---	42.58	---	---	115.0	V	40.0
40.602000	34.15	---	40.00	5.85	115.0	V	23.0
40.602000	---	41.51	---	---	115.0	V	23.0
44.664000	34.46	---	40.00	5.54	193.0	V	60.0
44.664000	---	40.48	---	---	193.0	V	60.0
49.999000	---	38.50	---	---	207.0	V	-28.0
49.999000	31.46	---	40.00	8.54	207.0	V	-28.0

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

Sample ID: S/01

Operation Mode: OM/01

Images:



Tables:

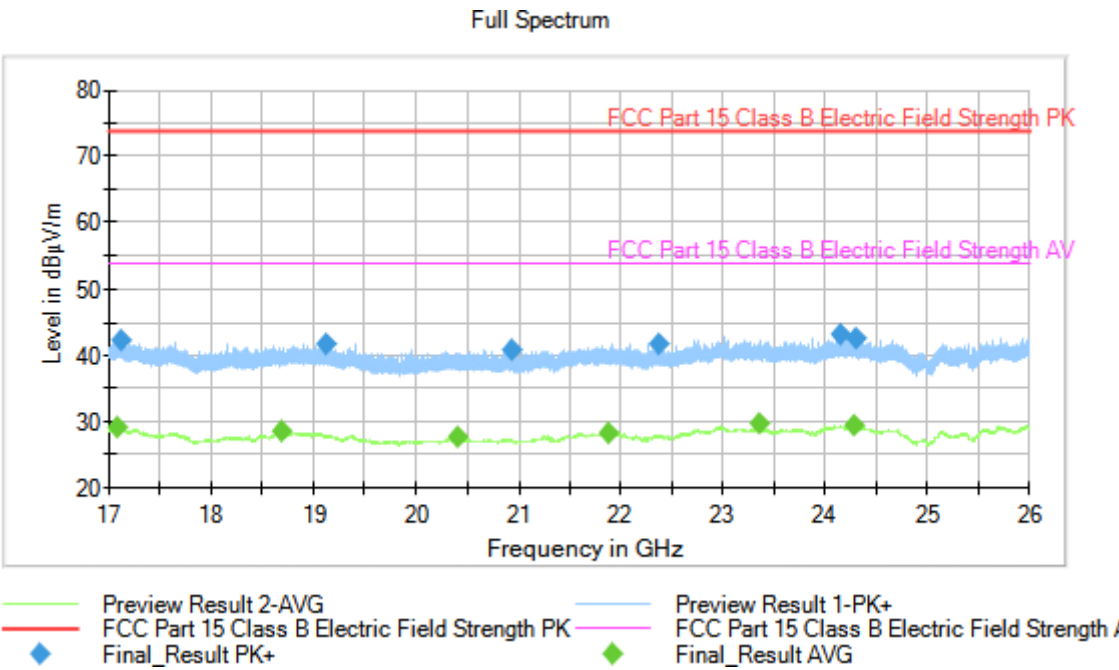
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
1125.000000	---	44.39	53.97	9.58	80.0	V	0.0
1125.000000	46.69	---	73.97	27.28	80.0	V	0.0
2375.000000	---	35.84	53.97	18.13	80.0	H	0.0
2375.000000	40.29	---	73.97	33.68	80.0	H	0.0
2625.000000	---	28.30	53.97	25.67	80.0	H	0.0
3250.500000	36.99	---	73.97	36.98	80.0	V	0.0
6000.000000	43.49	---	73.97	30.48	80.0	H	0.0
6000.000000	---	36.30	53.97	17.67	80.0	H	0.0
10374.750000	48.17	---	73.97	25.80	80.0	H	0.0
10538.750000	---	35.56	53.97	18.41	80.0	V	0.0
16821.750000	---	38.34	53.97	15.63	80.0	V	0.0
16823.500000	51.56	---	73.97	22.41	80.0	V	0.0

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)	Height (cm)	Pol	Azimuth (deg)
17077.750000	---	29.22	53.97	24.75	80.0	V	0.0
17111.750000	42.39	---	73.97	31.58	80.0	V	0.0
18678.250000	---	28.48	53.97	25.49	80.0	H	0.0
19118.750000	41.65	---	73.97	32.32	80.0	V	0.0
20399.500000	---	27.47	53.97	26.50	80.0	H	0.0
20934.250000	40.90	---	73.97	33.07	80.0	H	0.0
21875.250000	---	28.29	53.97	25.68	80.0	H	0.0
22371.500000	41.64	---	73.97	32.33	80.0	H	0.0
23347.750000	---	29.59	53.97	24.38	80.0	H	0.0
24145.500000	43.20	---	73.97	30.77	80.0	H	0.0
24277.750000	---	29.40	53.97	24.57	80.0	H	0.0
24304.250000	42.56	---	73.97	31.41	80.0	H	0.0