

ISED CABid: ES1909

Test Report No:

Lab. Company Number: 4621A

83206RRF.002

Partial Test Report

USA FCC Part 15.407, 15.209

CANADA RSS-247, RSS-Gen

(*) Identification of item tested	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	AM/FM/DAB/SIRIUS, GNSS, 2.4/5GHz WLAN, Bluetooth 5.1, Video/Audio HW version: D22 SW version: E326.0
Applicant	Robert Bosch GmbH Robert-Bosch-Strasse 200 31139, Hildesheim, GERMANY
Test method requested, standard	USA FCC Part 15.407 (10-1-23) Edition: Unlicensed National Information Infrastructure (U-NII) Devices. General technical requirements. USA FCC Part 15.209 (10-1-23) Edition: Radiated emission limits; general requirements. CANADA RSS-247 Issue 3 (August 2023). CANADA RSS-Gen Issue 5 Amendment 2 (February 2021). Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017. ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager
Date of issue	2025-06-16
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Acronyms

Acronym ID	Acronym Description
Avg Power	Maximum Average Conducted Output Power
DC	Duty Cycle
Ebw	Emission Bandwidth
Freq	Frequency
Max EIRP	Maximum Burst EIRP
Mod	Modulation
Mode	MIMO Mode
Occ Ch BW	Occupied Channel Bandwidth
Operation Band	Operation Band
PSD	Power Spectral Density
Port	Active Port
TPC	TPC

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.

DEKRA Testing and Certification S.A.U. is an FCC-recognized accredited testing laboratory with appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification S.A.U. is an ISED-recognized accredited testing laboratory, CABid: ES1909, Company Number: 4621A, with the appropriate scope of accreditation that covers the performed tests in this report.

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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

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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 conducted testing of EUT is:

RF Average Output Power: Measurement uncertainty $\leq \pm 2,01$ dB

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 a Central In-Vehicle Infotainment Computer. 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 Reception	of	Application
S/01	80633C_134.1	Central In-Vehicle Infotainment Computer	MBCI2LS4PN1	0759592	2025-02-19		Element Under Test
S/01	80633C_4.1	Ethernet - CAN interface	VN5610A	--	2024-12-18		Auxiliary Element
S/01	80633C_9.1	Harness	--	--	2024-12-18		Auxiliary Element
S/01	80633C_34.1	Antenna	A1777 905 29 02	--	2024-12-18		Auxiliary Element
S/01	80633C_61.1	Fakra / Ethernet - VGA cable	--	--	2024-12-19		Auxiliary Element
S/01	80633C_80.1	Fakra - 4 SMA cable	--	--	2024-12-20		Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Sample used for conducted tests

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/FM/DAB			[X]	[X]	[]
	Fakra Single Connector GPS			[X]	[X]	[]
	Fakra Quad Connector WLAN/BT			[X]	[X]	[]
--						
Supplementary information to the ports..... :						
Rated power supply	Voltage and Frequency			Reference poles		
				L1	L2	L3
	[]	AC:	[]	[]	[]	[]
[X]	DC: 9-16V nominal 12 VDC by vehicle battery					
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: Cluster in the car				
Modules/parts.....	Module/parts of test item			Type		Manufacturer
	--					

⁽³⁾ Only for Medical Equipment

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)	2025-05-23
Date (finish)	2025-05-23

Document history

Report number	Date	Description
83206RRF.002	2025-06-16	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. = 20 % Max. = 75 %

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. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Carmen Vázquez.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
06793	SHIELDED ROOM	S101	ETS LINDGREN	N/A
06611	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2026-04-21
06668	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2027-04-01
08848	OPEN SWITCH UNIT UP TO 7.5 GHz	OSP-B157W8 PLUS	ROHDE AND SCHWARZ	2027-01-02
07796	EXTENSION FOR OPEN SWITCH UNIT UP TO 40GHz	OSP-B157Wx	ROHDE & SCHWARZ	2027-01-09
00922	POWER SUPPLY DC 40 V / 40 A	NGPE 40/40	ROHDE AND SCHWARZ	2027-10-02
05850	DIGITAL MULTIMETER	179	FLUKE	2025-11-04
07798	WMS32	WMS32	ROHDE AND SCHWARZ	N/A

Testing verdicts

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

Summary

Common requirements for all Bands:

FCC PART 15 PARAGRAPH / RSS-247		
Requirement – Test case	Verdict	Remark
RSS-Gen 6.10. / FCC 15.35 Subclause (c). Transmitter. Duty Cycle	N/M	(1)
RSS-Gen section 6.7. Transmitter. 99% Occupied Bandwidth	N/M	(1)
RSS-Gen section 6.7 / FCC 15.407 (a)(2). Transmitter. 26 dB Emission Bandwidth (EBW)	N/M	(1)
Supplementary information and remarks:		
1. Test not requested by the client		

Appendix A. U-NII-1: 5.15 GHz – 5.25 GHz Band:

FCC PART 15 PARAGRAPH / RSS-247		
Requirement – Test case	Verdict	Remark
FCC 15.407 (a)(1)(iv) Transmitter Maximum Conducted Output Power	P*	(1)
RSS-247 6.2.1.1 Transmitter Maximum Equivalent Isotropically Radiated Power EIRP	N/M	(2)
FCC 15.407 (a)(1)(iv) Transmitter Maximum Power Spectral Density	N/M	(2)
RSS-247 6.2.1.1 Transmitter EIRP Spectral Density	N/M	(2)
FCC 15.407 (b)(1)(6) / RSS-247 6.2.1.2 Transmitter Out of Band Radiated Emissions	N/M	(2)
FCC 15.407 (b)(1) / RSS-247 6.2.1.2 Transmitter Band Edge Radiated Emissions	N/M	(2)
Supplementary information and remarks:		
1. Only spot-check for the worst case has been evaluated 2. Test not requested by the client		

Appendix B. U-NII-3: 5.725 GHz – 5.85 GHz Band:

FCC PART 15			
Requirement – Test case		Verdict	Remark
FCC 15.407 (e) / RSS-247 Clause 6.2.4.1	6 dB Bandwidth.	N/M	(1)
FCC 15.407 (a)(3) / RSS-247 6.2.4.1	Transmitter Maximum conducted Output Power	P*	(2)
FCC 15.407 (a)(3) / RSS-247 Clause 6.2.4.1	Transmitter Maximum Power Spectral Density	N/M	(1)
FCC 15.407 (b) (4) / RSS-247 6.2.4.2	Transmitter Band Edge Radiated Emissions	N/M	(1)
FCC 15.407 (b) (4) (6) / RSS-247 6.2.4.2	Transmitter Out of Band Radiated Emissions	N/M	(1)
<u>Supplementary information and remarks:</u> 1. Test not requested by the client 2. Only spot-check for the worst case has been evaluated			

TEST CONDITIONS

(*) Declared by the Client.

POWER SUPPLY (*):

Vnominal: 12Vdc
Type of Power Supply: External power supply (vehicle battery)

ANTENNA (*):

Type of Antennas: External antenna
Maximum Declared Antenna Gain: +5 dBi

U-NII-1 & U-NII-3:

TEST FREQUENCIES (*):

Technology: WLAN (IEEE 802.11 a20 / n2040 / ac204080 / ax204080 1x1)
Modulation: 802.11ax40 HE40 (OFDMA MCS0 index) – RU Subcarrier allocation (RU26)
Beamforming: No

Band U-NII-1:

Operating Channel Bandwidth:	40 MHz		
Transmission Channels:	Channels	Channel Frequency (MHz)	Offset
	High (46)	5230	17

Band U-NII-3:

Operating Channel Bandwidth:	40 MHz		
Transmission Channels:	Channels	Channel Frequency (MHz)	Offset
	Low (151)	5755	0

The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode:

- Continuously transmitting with a modulated carrier at power setting according the table on all required channels using the supported data rates/modulations types.

CONDUCTED MEASUREMENTS:

The equipment under test was set up in a shielded room and it is connected to the TS8997 using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



Appendix A: Tests results for the U-NII-1: Band 5.15–5.25 GHz

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TEST CASES DETAILS

FCC 15.407 (a)(1)(iv) Transmitter Maximum Conducted Output Power/ RSS-247 Clause 6.2.1.1. Transmitter Maximum Equivalent Isotropically Radiated Power

Limits

FCC 15.407:

For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247:

The maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Specification

The maximum conducted output power was measured using the method according to clause E) 3) b) (Method PM-G) of 789033 D02 General UNII Test Procedures New Rules v02r01.

The e.i.r.p. levels are calculated by adding the declared maximum antenna gain (dBi).

Results

Modulation: 802.11ax40 HE40 (OFDMA MCS0 index) – RU Subcarrier allocation

Mode: SISO

Results

Operation Band (MHz)	Port	Freq (MHz)	TPC	Avg Power (dBm)	Max EIRP (dBm)
[5150, 5250]	1	5230.00000	No	5.86	10.86

Verdict

Pass

Appendix B: Tests results for the U-NII-3: Band 5.725 GHz – 5.85 GHz

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TEST CASES DETAILS

RSS-247 6.2.4.1 / FCC 15.407 (a) (3) Maximum Conducted output power UNII-3

Limits

FCC 15.407: For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W

RSS-247: The maximum conducted output power shall not exceed 1 W.

Modulation: 802.11ax40 HE40 (OFDMA MCS0 index) – RU Subcarrier allocation

Mode: SISO

Results

Operation Band (MHz)	Port	Freq (MHz)	TPC	Avg Power (dBm)	Max EIRP (dBm)
[5725, 5850]	1	5755.00000	No	5.80	10.80

Verdict

Pass