

ISED CABid: ES1909

Test Report No:

Lab. Company Number: 4621A

83206RRF.001

## Partial Test Report

### USA FCC Part 15.247, 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 15.247 (10-1-23 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. 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 Performing Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid Systems Devices Operating Under Section 15.247 of the FCC Rules. 558074 D01 Meas Guidance v05r02 dated April 2, 2019. 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
Report template No	FDT08_25 (*) "Data provided by the client"

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## Acronyms

Acronym ID	Acronym Description
BW	Bandwidth
Detector	Detector used
Equipment	Equipment Type
Freq	Frequency
Freq Rng	Frequency Range
Lvl	Level
MP	Measurement Point
Mod	Modulation
Mode	MIMO Mode
Peak Power	Maximum Peak Conducted Output Power
Pol	Polarization
Port	Active Port

## 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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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

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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 Peak Output Power: Measurement uncertainty  $\leq \pm 0,80$  dB

RF Average Output Power: Measurement uncertainty  $\leq \pm 0,99$  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 <sup>(3)</sup>
	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
	--					

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
	--		

<sup>(3)</sup> 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)	2025-04-04
Date (finish)	2025-05-22

### Document history

Report number	Date	Description
83206RRF.001	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

### Bluetooth EDR. Chipset 1 & 2:

Requirement – Test case	FCC PART 15 PARAGRAPH / RSS-247	Verdict	Remark
FCC 15.247 (a) (1) / RSS-247 5.1 (b)	20 dB Bandwidth	N/M	(1)
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d)	Time of Occupancy (Dwell Time)	N/M	(1)
FCC 15.247 (b) / RSS-247 5.4. (b)	Maximum peak output power and	P*	(2)
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d)]	Number of hopping channels	N/M	(1)
FCC 15.247 (d) / RSS-247 5.5	Band-edge emissions compliance	N/M	(1)
FCC 15.247 (d) / RSS-247 5.5	Emission limitations radiated (Transmitter)	N/M	(1)
<u>Supplementary information and remarks:</u> <ol style="list-style-type: none"> <li>Test not requested by the client</li> <li>Only spot-check for the worst case has been evaluated</li> </ol>			

## Bluetooth Low Energy 5.1 (1M & 2M). Chipset 1 & 2:

FCC PART 15 PARAGRAPH/ RSS-247			
Requirement – Test case		Verdict	Remark
FCC 15.247 (a)(2) / RSS-247 5.2. (a)	6 dB Bandwidth	N/M	(1)
FCC 15.247 (b) / RSS-247 5.4. (d)	Maximum output power and antenna gain	P*	(2)
FCC 15.247 (d) / RSS-247 5.5.	Band-edge emissions compliance (Transmitter)	N/M	(1)
FCC 15.247 (e) / RSS-247 5.2. (b)	Power spectral density	N/M	(1)
FCC 15.247 (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	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			

## WLAN 2.4 GHz:

FCC PART 15 PARAGRAPH/ RSS-247			
Requirement – Test case		Verdict	Remark
FCC 15.247 (a)(2) / RSS-247 5.2. (a)	6 dB Bandwidth	N/M	(1)
FCC 15.247 (b) / RSS-247 5.4. (d)	Maximum output power and antenna gain	P*	(2)
FCC 15.247 (d) / RSS-247 5.5.	Band-edge emissions compliance (Transmitter)	N/M	(1)
FCC 15.247 (e) / RSS-247 5.2. (b)	Power spectral density	N/M	(1)
FCC 15.247 (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	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			

## Appendix A: Test results. Bluetooth EDR. Chipset 1

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<i>RSS-247 5.4 (b) / FCC 15.247 (b) (1) Maximum Peak Conducted output power</i> .....	14

# TEST CONDITIONS

(\*): Data provided by the client.

POWER SUPPLY (\*):

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

ANTENNA (\*):

Type of Antenna: External antenna  
Maximum Declared Antenna Gain: +2dBi

TEST FREQUENCIES (\*):

Modulation	Data rates	Middle Channel
BTEDR 8DPSK	3-DH5	2441 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

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.



# TEST CASES DETAILS

## RSS-247 5.4 (b) / FCC 15.247 (b) (1) Maximum Peak Conducted output power

### Limits

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1 watt (30 dBm).

RSS-247:

The e.i.r.p. shall not exceed 4 W (RSS-247).

### Results

The maximum peak conducted output power level of the fundamental emission was measured according to clause 7.8.5 “Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices” of ANSI C63.10-2013.

The EIRP power (dBm) is calculated by adding the maximum declared antenna gain to the measured conducted power.

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Modulation: BT (8DPSK 3-DH5)

MIMO Mode: SISO

### Results

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	EIRP (dBm)
Frequency Hopping Spread Spectrum systems (DSS)	1	2441.00000	3	-2.067	-0.067

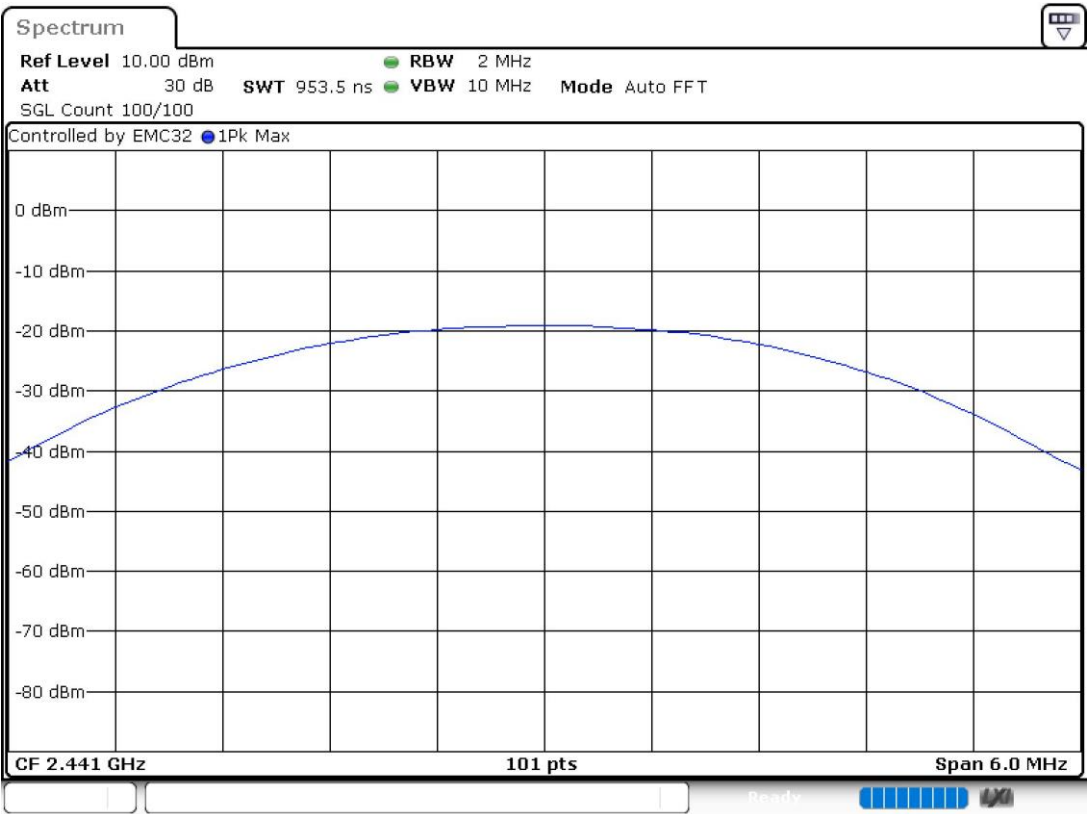
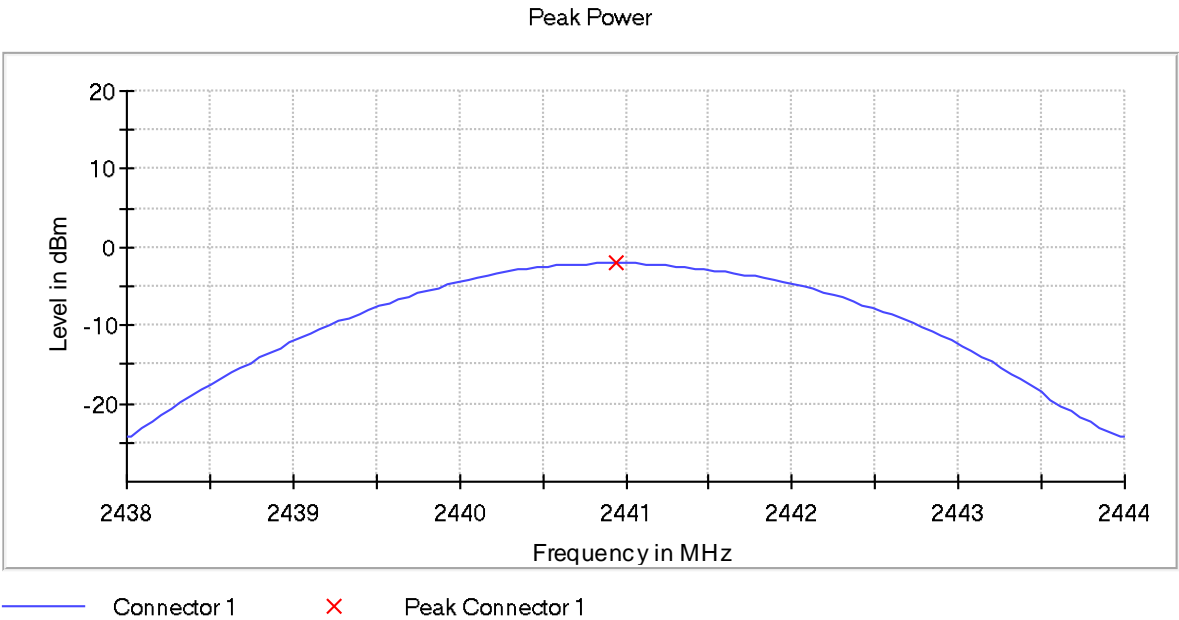
### Verdict

Pass

Attachments

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)    Bandwidth MHz = 1  
Modulation = BT (8DPSK 3-DH5)    Frequency MHz = 2441.00000  
MIMO Mode = SISO    Active Port = 3

Images:



## Appendix B: Test results. Bluetooth EDR. Chipset 2



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<i>RSS-247 5.4 (b) / FCC 15.247 (b) (1) Maximum Peak Conducted output power .....</i>	<i>19</i>

# TEST CONDITIONS

(\*): Data provided by the client.

POWER SUPPLY (\*):

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

ANTENNA (\*):

Type of Antenna: External antenna  
Maximum Declared Antenna Gain: +2dBi

TEST FREQUENCIES (\*):

Modulation	Data rates	Low Channel:
BTEDR PI/4 DQPSK	2-DH5	2402 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

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.



## TEST CASES DETAILS

### RSS-247 5.4 (b) / FCC 15.247 (b) (1) Maximum Peak Conducted output power

**Limits**

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1 watt (30 dBm).

RSS-247:

The e.i.r.p. shall not exceed 4 W (RSS-247).

**Results**

The maximum peak conducted output power level of the fundamental emission was measured according to clause 7.8.5 “Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices” of ANSI C63.10-2013.

The EIRP power (dBm) is calculated by adding the maximum declared antenna gain to the measured conducted power.

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Modulation: BT (Pi/4 DQPSK)

MIMO Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	EIRP (dBm)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-3.053	-1.053

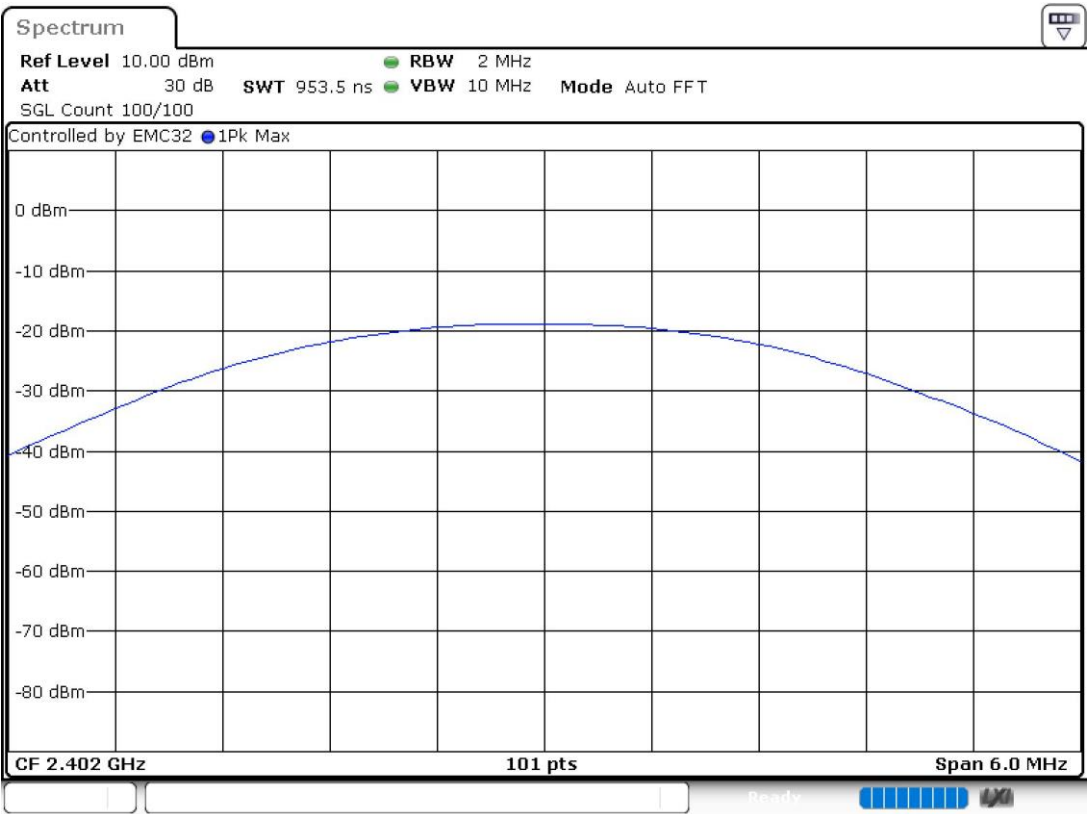
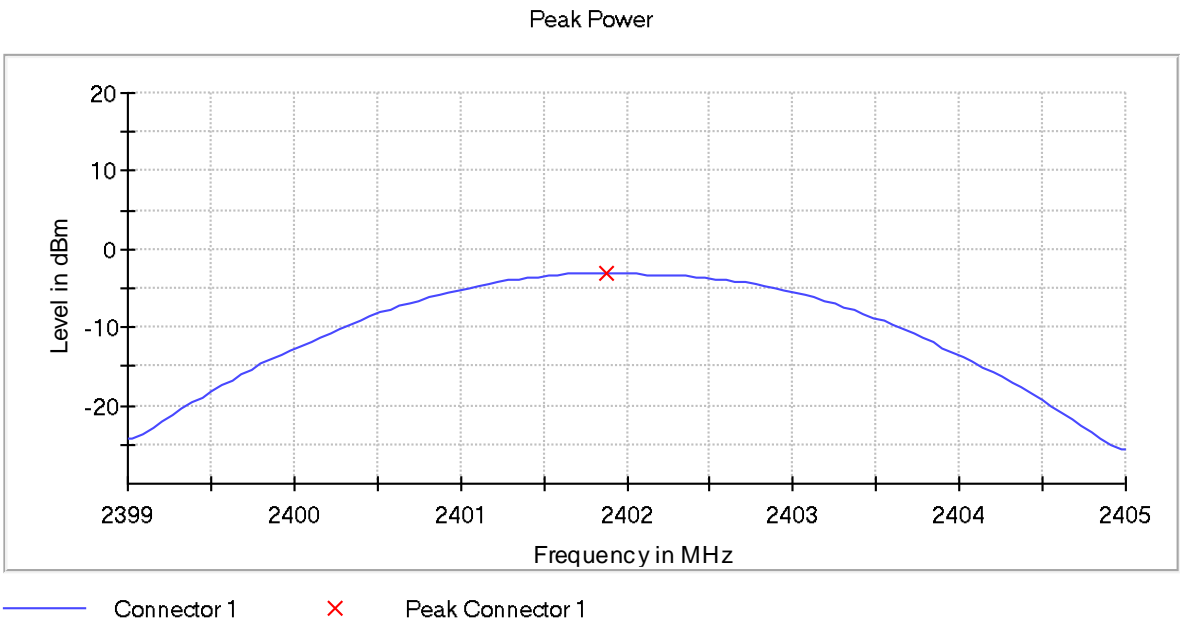
**Verdict**

Pass

Attachments

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)    Bandwidth MHz = 1  
Modulation = BT (Pi/4 DQPSK)    Frequency MHz = 2402.00000  
MIMO Mode = SISO    Active Port = 1

Images:



## Appendix C: Test results. Bluetooth Low Energy 5.1 (1M & 2M). Chipset 1

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# TEST CONDITIONS

(\*): Data provided by the client.

POWER SUPPLY (\*):

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

ANTENNA (\*):

Type of Antenna: External antenna  
Maximum Declared Antenna Gain: +2dBi

TEST FREQUENCIES (\*):

Modulation	Data rates	Middle Channel
BTLE GFSK	2M 2 Mbit/s	2440 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

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.



## TEST CASES DETAILS

### RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Peak Conducted output power

**Limits**

For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).  
The e.i.r.p. shall not exceed 4 W (36 dBm) (Canada).  
The maximum peak conducted output power level in the fundamental emission was measured using the method according to point 11.9.1.1 "RBW ≥ DTS bandwidth" of ANSI C.63.10-2013.

Modulation: BTLE 5.1 (GFSK 2 Mbit/s)

**Results**

Freq (MHz)	Peak Power (dBm)	Maximum EIRP Power (dBm)
2440.00000	-3.754	-1.754

**Verdict**

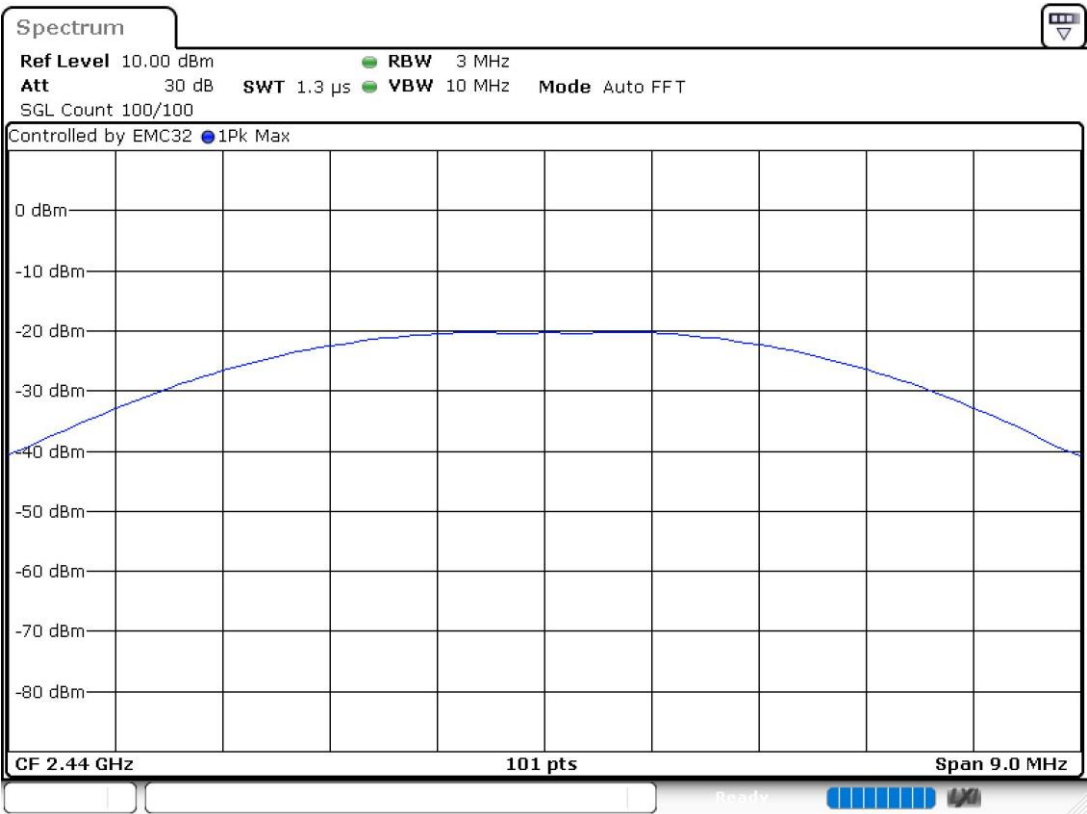
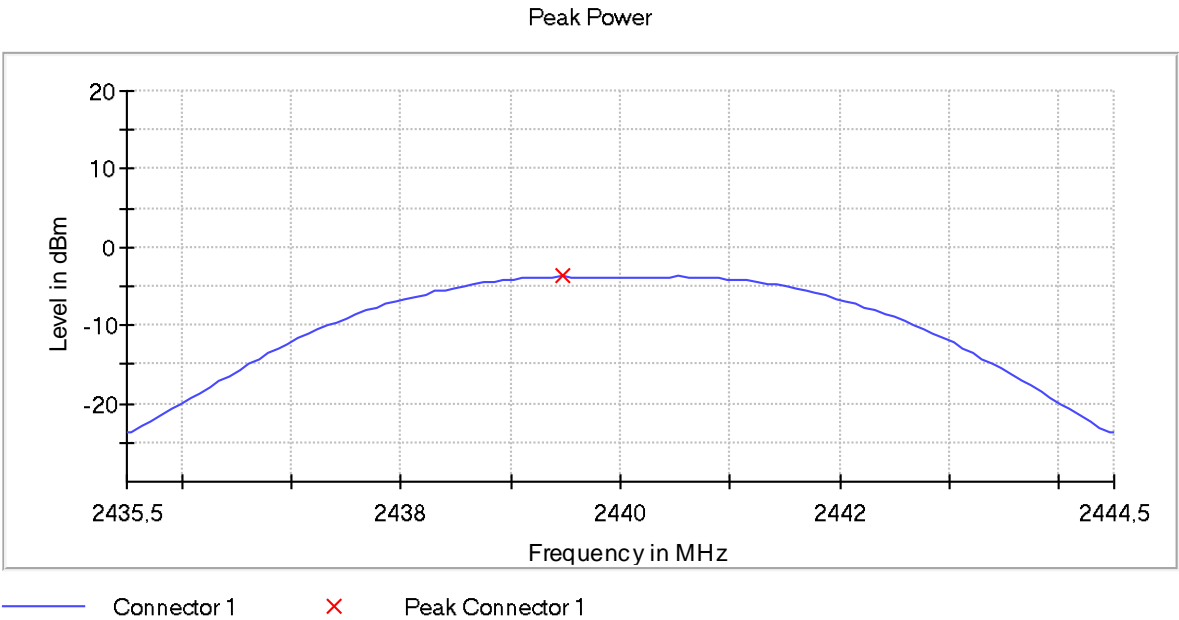
Pass



Attachments

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.1 (GFSK 2 Mbit/s)    Frequency MHz = 2440.00000  
MIMO Mode = SISO    Active Port = 3

Images:



## Appendix D: Test results. Bluetooth Low Energy 5.1 (1M & 2M). Chipset 2

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<i>RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Peak Conducted output power .....</i>	<i>29</i>

# TEST CONDITIONS

(\*): Data provided by the client.

POWER SUPPLY (\*):

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

ANTENNA (\*):

Type of Antenna: External antenna  
Maximum Declared Antenna Gain: +2dBi

TEST FREQUENCIES (\*):

Modulation	Data rates	Low Channel
BTLE GFSK	2M 2 Mbit/s	2402 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

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.



## TEST CASES DETAILS

### RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Peak Conducted output power

**Limits**

For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).  
The e.i.r.p. shall not exceed 4 W (36 dBm) (Canada).  
The maximum peak conducted output power level in the fundamental emission was measured using the method according to point 11.9.1.1 "RBW ≥ DTS bandwidth" of ANSI C.63.10-2013.

Modulation: BTLE 5.1 (GFSK 2 Mbit/s)

**Results**

Freq (MHz)	Peak Power (dBm)	Maximum EIRP Power (dBm)
2402.00000	-4.437	-2.437

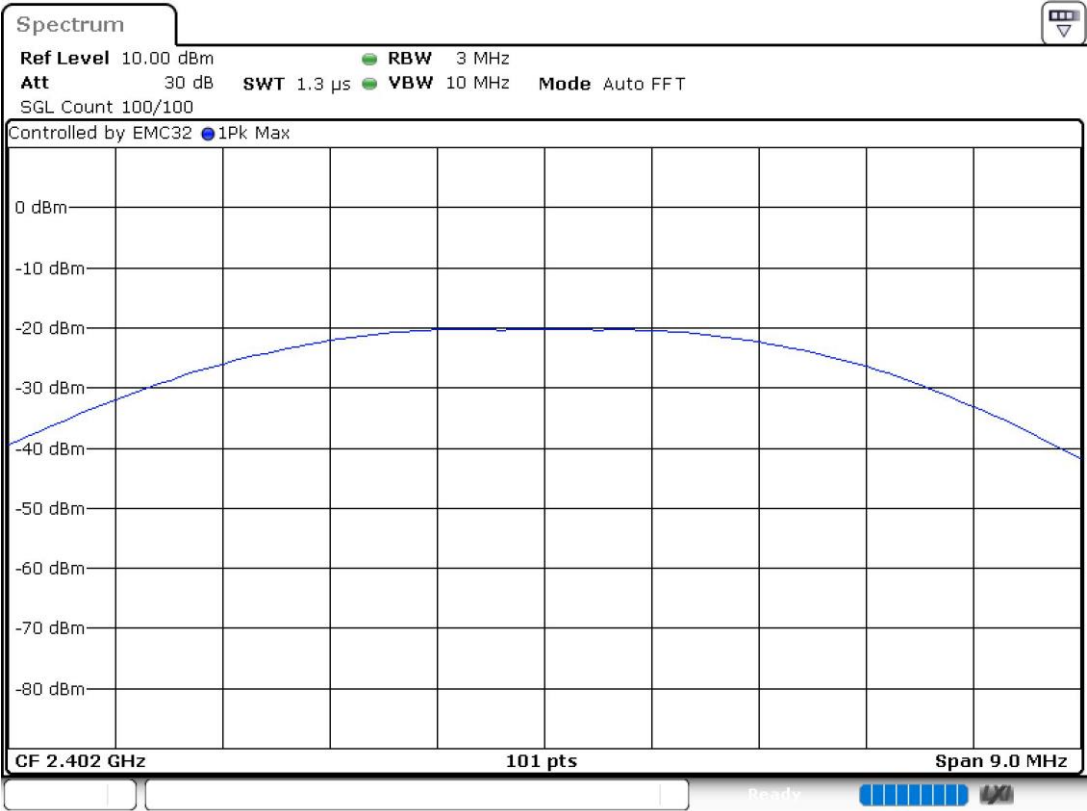
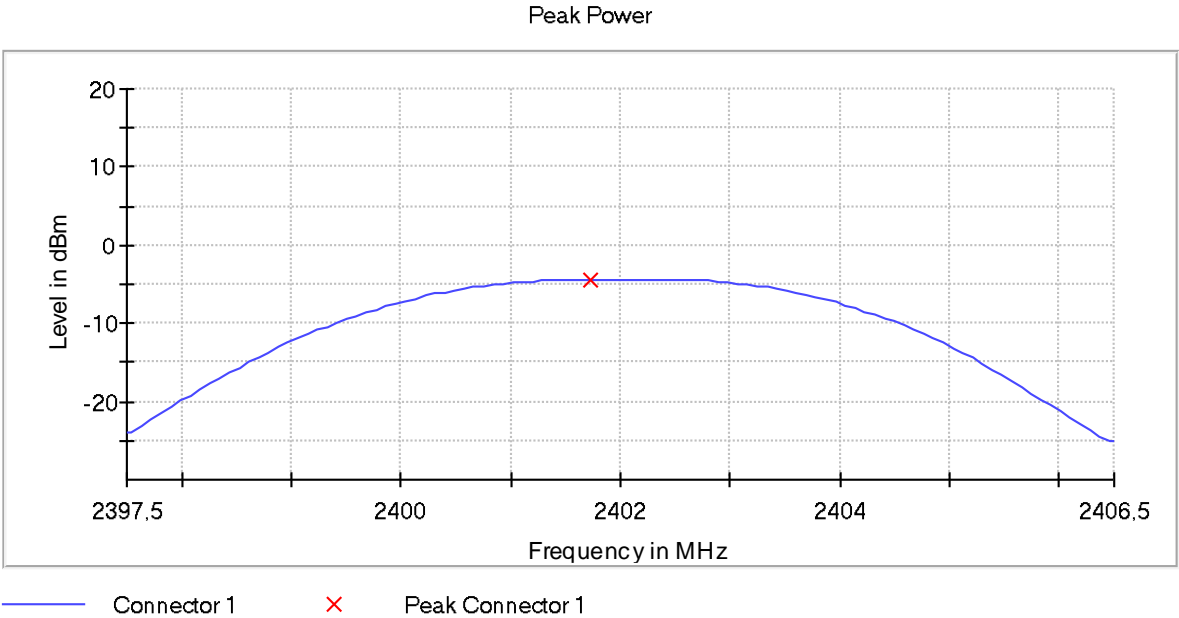
**Verdict**

Pass

Attachments

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.1 (GFSK 2 Mbit/s)    Frequency MHz = 2402.00000  
MIMO Mode = SISO    Active Port = 1

Images:



## Appendix E: Test results. WLAN 2.4 GHz

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<i>RSS-247 5.4 (d) / FCC 15.247 (b) (1) Maximum Average Conducted output Power .....</i>	<i>34</i>



## TEST CONDITIONS

(\*): Data provided by the client.

**POWER SUPPLY (\*):**

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

**ANTENNA (\*):**

Type of Antenna: External antenna  
Maximum Declared Antenna Gain: +2dBi

**TEST FREQUENCIES (\*):**

Modulation	Data rates	High Channel
802.11b:	1 Mbit/s	2462 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

**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.



## TEST CASES DETAILS

### RSS-247 5.4 (d) / FCC 15.247 (b) (1) Maximum Average Conducted output Power

**Limits**

For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).  
The e.i.r.p. shall not exceed 4 W (36 dBm) (Canada).

**Results**

The maximum peak conducted output power level of the fundamental emission was measured according to clause 11.9.2.3.2 “Method AVGPM-G” of ANSI C63.10-2013.

The EIRP power (dBm) is calculated by adding the maximum declared antenna gain to the measured conducted power.

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Modulation: 802.11b (DSSS 1 Mbit/s)  
MIMO Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Avg Power (dBm)	E.I.R.P. (dBm)
Digital Transmission System (DTS)	20	2462.00000	7.72	9.72

**Verdict**

Pass