DEKRA Certification, Inc.
405 Glenn Dr. Suite 12,
Sterling, VA 20164
United States of America

DEKRA

ACCREDITED
Test Lab
Cert 2764.01

FCC LISTED, REGISTRATION NUMBER: 2764.01

ISED LISTED REGISTRATION NUMBER: 23595-1

Test report No:
2501BERM.006

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-18 Edition) & ICES-003 ISSUE 6 – Update April (2017)

Identification of item tested	Display Audio Infotainment Unit 10”TP
Trademark	Visteon
Model and /or type reference	VW MIB Regio
Other identification of the product	FCC ID: NT8-VWMIBREGIO IC: 3043A-VWMIBREGIO HW Version: H04 SW Version: 0107
Features	FM, AM, USB, Bluetooth, WLAN, GNSS
Manufacturer	VISTEON CORPORATION ONE VILLAGE CENTER DRIVE, VAN BUREN TOWNSHIP, MI, 48111 U.S.A
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-18 Edition) ICES-003 ISSUE 6 – Update April (2017)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager Digitally signed by Domingo Galvez DN: cn=Domingo Galvez, o=DEKRA Certification Inc., ou=Regulatory Lab, email=dgalvez@dekra.com, c=US Date: 2019.12.09 22:05:19 -05'00'
Date of issue	11-26-2019
Report template No	FDT08_21

Index

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

Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

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

DEKRA Certification Inc. 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 Certification at the time of performance of the test.

DEKRA Certification Inc. 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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Certification Inc.

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 Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Uncertainty

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

	Frequency (MHz)	U(k=2)	Units
Conducted emission	0,009 - 30	2.69	dB
Radiated emission	30-180	3.82	dB
	180-1000	2.61	dB
	1000-18000	2.92	dB
	18000-40000	2.15	dB

Data provided by the client

VW MIB Regio is a Display Audio Infotainment Unit with capacitive 10”TP touch screen with following functionalities: USB 3.1/USB Video, USB Hub, Bluetooth EDR 2.4 GHz, Audio BT streaming music, control and browsing, Wi-Fi hotspot Functionality/Wireless 2.4GHz and 5 GHz band, GNSS receiver-GLONASS, GPS.

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 undergoing test have been selected by: The client.

Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
2501B/06	Vehicular Radio	2GM.035.180.A	VWZ7Z2W0130037	10/31/2019
2501B/18	Harness	-	-	10/31/2019

Following Accessory item was used with Sample S/01 to perform testing

Control Nº	Description	Model	Serial Nº	Date of reception
2501B/37	GPS & Am/FM radio antenna	6C0.035.501.G5FQ	02S AZWPL	11/11/2019
2501B/32	Fakra USB Cable	-	-	10/31/2019

1. Sample S/01 has undergone following test(s):

   All radiated tests indicated in appendix A.

Test sample description

Ports..... :	Port name and description		Cable				
			Specified length [m]	Attached during test	Shielded		
	AM/FM Antenna Connection: Fakra			☒	☐		
	GPS Antenna Connector: Fakra			☒	☐		
	USB Video Port			☒	☐		
	USB 3.0			☒	☐		
	Main Connectors			☒	☐		
Supplementary information to the ports..... :	Dual USB HUB Type C						
Rated power supply .....:	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☐	DC:					
	☒	DC: 13.5 / Wireless 2.4 GHz and 5 GHz band					
Rated Power .....:	Sleep current: 300 µA						
Clock frequencies .....:	48 KHZ, 26 MHZ, 25 MHZ, 36.864 MHZ, 16 MHZ						
Other parameters.....:	Display Screensize: 10.1" (diagonal) FHD, 2.14:1, Landscape, Transmissive, Normally black, ADStype						
Software version .....:	0107						
Hardware version.....:	H04						
Dimensions in cm (L x W x D) ....:	260.31 X 130.72 X 153.15						
Mounting position.....:	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☒	Other: Vehicle / Automotive use					
Modules/parts .....:	Module/parts of test item		Type	Manufacturer			
	N/A						

Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	GPS Antenna	Antenna	-
	Harnesses to power up the Radio	Harnesses	-
	SMA Connectors	SMA	-
	USB Cables	USB	
Documents as provided by the applicant.....:	Description	File name	Issue date
	PoA		
	Declaration letters		
	Application Forms FDT 30_14		
	Application forms FRF88_01 FRF91_02		

Copy of marking plate:

Identification of the client

VISTEON CORPORATION
ONE VILLAGE CENTER DRIVE, VAN BUREN TOWNSHIP,
MI, 48111 U.S.A

Testing period and place

Test Location	DEKRA Certification, Inc
Date (start)	11-13-2019
Date (finish)	11-14-2019

Document history

Report number	Date	Description
2501BERM.006	11-26-2019	First release

Environmental conditions

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

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

In the semi-anechoic chamber, the following limits were not exceeded during the test.

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

Remarks and comments

The tests have been performed by the technical personnel: Koji Nishimoto and Poojita Bhattu

Testing verdicts

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

Summary

Emission Test			
Report Section	**Requirement – Test case**	**Verdict**	**Remark**
A.1.	Radiated emission electromagnetic field test (30 MHz – 1000 MHz)	P	N/A
A.1.	Radiated emission electromagnetic field test (1 GHz – 18 GHz)	P	N/A
A.1.	Radiated emission electromagnetic field test (18 GHz – 40 GHz)	P	N/A
A.2.	Conducted emission test (150 kHz to 30 MHz)	N/A	Refer 1
Supplementary information and remarks: 1) Device is DC powered from a battery			

List of equipment used during the test

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
0981	Preamplifier	BONN ELEKTRONIK	BLMA0118 -2A	2018/10	2020/10
0982	Preamplifier	BONN ELEKTRONIK	BLMA1840 -1M	2018/10	2020/10
1012	EMI Test Receiver	Rohde & Schwarz	ESR26	2018/09	2020/09
1014	Signal Analyzer	Rohde & Schwarz	FSV40	2019/04	2021/04
1056	Double-ridge Waveguide Horn antenna 10-40 GHz	ETS LINDGREN	3116C	2016/12	2019/12
1057	Double-ridge Waveguide Horn antenna 1-18 GHz	ETS LINDGREN	3115	2017/03	2020/03
1065	Biconilog Antenna	ETS LINDGREN	3142E	2017/03	2020/03

Appendix A: Test results

Appendix A Content

DESCRIPTION OF THE OPERATION MODES.....11
A.1.RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE 12

DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself. Every operation mode takes failure criteria for the immunity test that they were applying to it and a monitoring to guarantee performance of the same ones.

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. Powered by 13.5 Vdc • Wi-Fi 2.4/5 GHz and BLE in Idle Mode • AM/FM radio and GPS in RX Mode

*Worst configurations detected

A.1.RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Reference standard:	FCC CFR 47, Part 15, Subpart B (10-1-18 Edition), Secs. 15.109 & ICES-003 Issue 6 – Update April (2017)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-18 Edition), Secs. 15.109 & ICES-003 Issue 6 – Update April (2017); ANSI C63.4 (2014)

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 (10-01-18 Edition), Secs. 15.109 & ICES-003 Issue 6 – Update April (2017) in the frequency range 30 MHz to 40 GHz for class B equipment.

Frequency range (MHz)	QP Limit for 3 m	
	(μV/m)	(dBμV/m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46
Above 960	500	54

Frequency range (MHz)	AVG Limit for 3 m		PK Limit for 3 m (1)
	(μV/m)	(dBμV/m)	(dBμV/m)
Above 1000	500	54	74

(1) Frequencies above 1 GHz, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test, as per §15.35(b)

TEST SETUP

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at a distance of 3 m for the frequency ranges of 30-1000 MHz (Bilog antenna) and 1-18 GHz (Double ridge horn antenna) and at a distance of 1 m for the frequency ranges of 18-40 GHz (Double ridge horn antenna).

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

TEST SETUP (Cont.)	

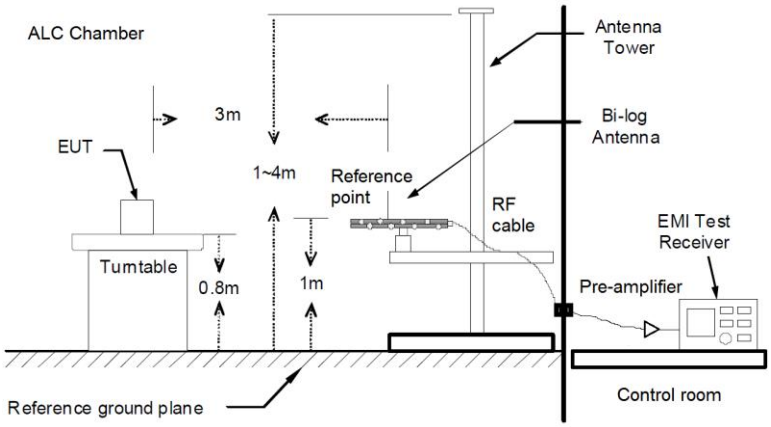


Fig A1: Generic setup for measurements from 30 to 1000MHz

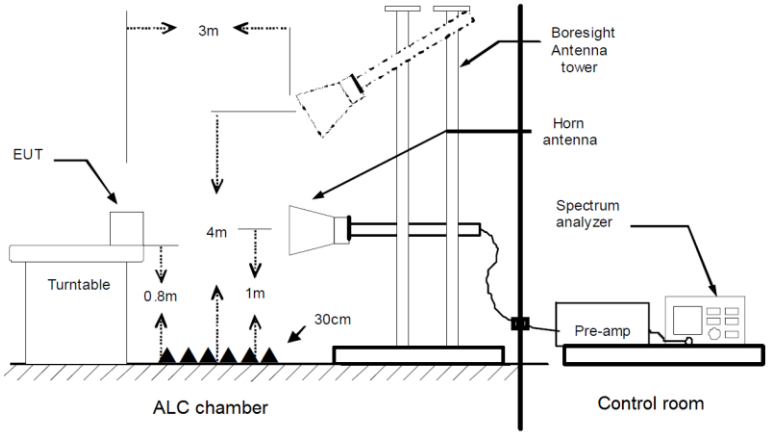


Fig A2: Generic setup for measurements from 1 to 18GHz (Analyzer outside the chamber)

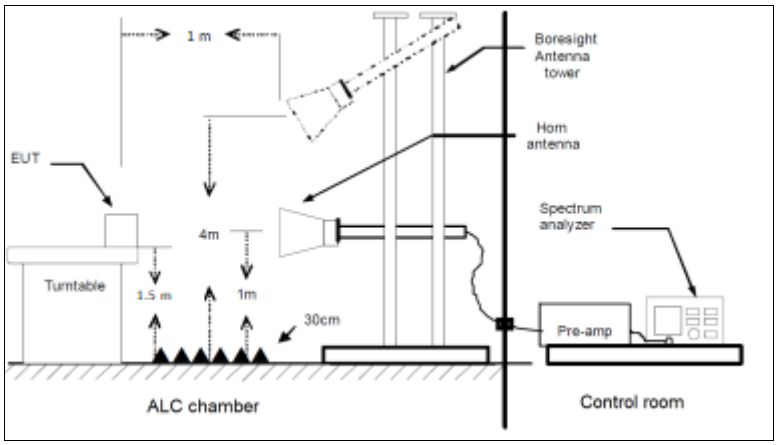


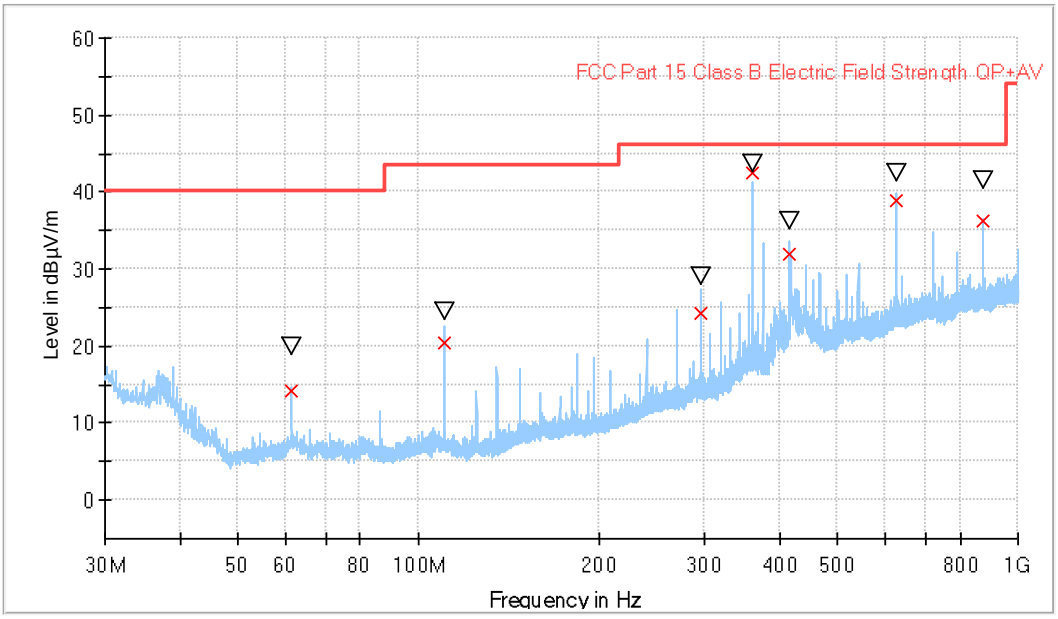
Fig A3: Generic setup for measurements from 18 to 40GHz (Analyzer outside the chamber)

TESTED SAMPLES:	S/01
TESTED OPERATION MODES:	OM#01
TEST RESULTS:	**CR**mmnnXX: CR, Radiation Condition; mm: Sample number; nn: Operation mode.,XX: Frequency Range,

CRmmnnXX	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz Horizontal Polarization	P
CR0101LR	Range: 30 MHz - 1000 MHz Vertical Polarization	P
CR0101HR1	Range: 1-18 GHz Horizontal Polarization	P
CR0101HR1	Range: 1-18 GHz Vertical Polarization	P
CR0101HR2	Range: 18-40 GHz Horizontal Polarization	P
CR0101HR2	Range: 18-40 GHz Vertical Polarization	P

Radiated Emission. CR0101LR

Project:	02501BERM006
Company:	Visteon Brazil
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. (Wi-Fi 2.4 GHz, 5 Ghz and BLE in IDLE mode, GPS in RX mode). Power Supply: 13.5 Vdc.

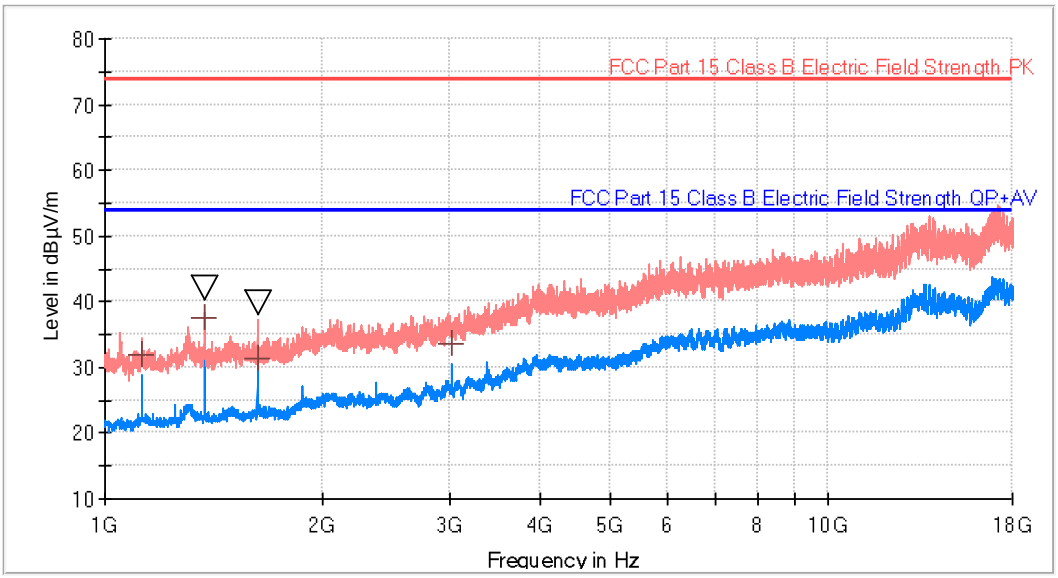


Preview Result 1-PK+
FCC Part 15 Class B Electric Field Strength QP+AV
Final_Result QPK
Final_Result PK+

Frequency (MHz)	QuasiPeak (dBuV/m)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
61.439340	---	19.91	---	---	193.0	V	27.0
61.439340	14.11	---	40.00	25.89	193.0	V	27.0
110.599996	---	24.46	---	---	115.0	V	-156.0
110.599996	20.51	---	40.00	19.49	115.0	V	-156.0
294.919156	24.22	---	47.00	22.78	122.0	H	92.0
294.919156	---	29.06	---	---	122.0	H	92.0
361.280877	42.46	---	47.00	4.54	254.0	H	-41.0
361.280877	---	43.69	---	---	254.0	H	-41.0
415.999967	32.03	---	47.00	14.97	100.0	H	102.0
415.999967	---	36.25	---	---	100.0	H	102.0
624.999962	---	42.51	---	---	118.0	H	-171.0
624.999962	38.94	---	47.00	8.06	118.0	H	-171.0
874.999746	36.22	---	47.00	10.78	122.0	V	-27.0
874.999746	---	41.44	---	---	122.0	V	-27.0

Radiated Emission. CR0101HR1

Project:	02501BERM009
Company:	Visteon Brazil
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. (Wi-Fi 2.4 GHz, 5 GHz and BLE in IDLE mode, GPS in RX mode). Power Supply: 13.5 Vdc.

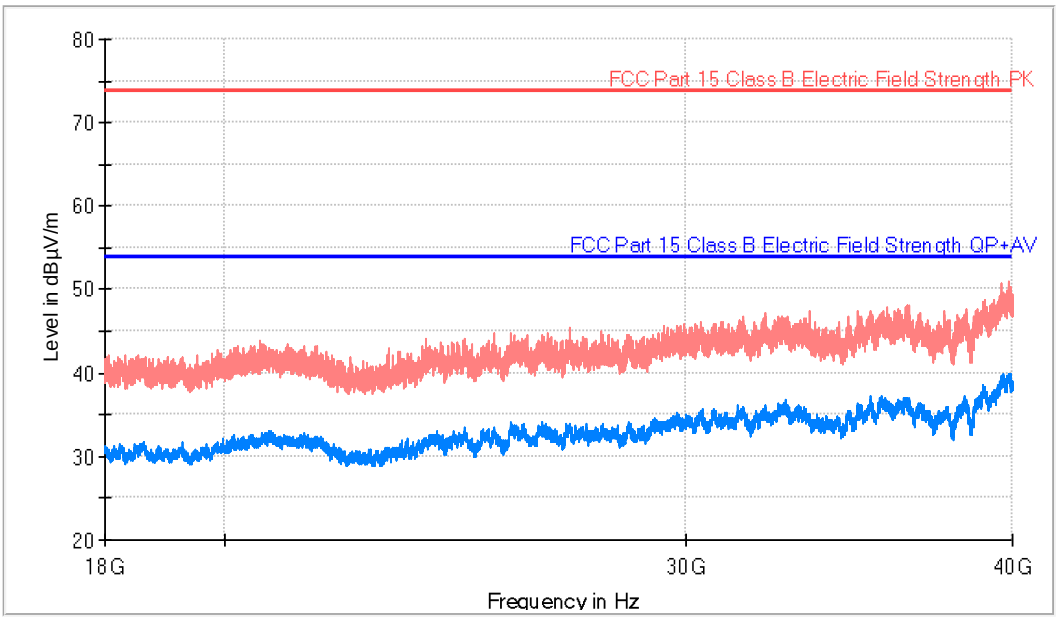


Preview Result 2-AVG
Preview Result 1-PK+
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV
Final_Result PK+
Final_Result AVG

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
1125.000000	---	32.03	53.90	21.87	100.0	H	-118.0
1375.050000	42.12	---	73.90	31.78	118.0	V	9.0
1375.050000	---	37.61	53.90	16.29	118.0	V	10.0
1624.850000	39.85	---	73.90	34.05	115.0	H	43.0
1625.050000	---	31.34	53.90	22.56	114.0	H	80.0
3011.600000	---	33.70	53.90	20.20	117.0	H	55.0

Radiated Emission. CR0101HR2

Project:	02501BERM009
Company:	Visteon Brazil
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. (Wi-Fi 2.4 GHz, 5 GHz and BLE in IDLE mode, GPS in RX mode). Power Supply: 13.5 Vdc.



AVG_MAXH
PK+_MAXH
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV