



Test report No:  
 NIE: 59830REM.005A2

## Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B  
 (10-1-16 Edition) &  
 ICES-003 (January 2016, Updated April 2017)

(*) Identification of item tested	TCAM: Telematics and Connectivity Antenna Module
(*) Trademark	Continental
(*) Model and /or type reference tested	TCAM1NA0
Other identification of the product	HW version: E4.2 SW version: PI007.1 FCC ID: KR5TCAM1NA0 IC: 7812D-TCAM1NA0
(*) Features	2G, 3G, LTE, GNSS, WLAN, BLE, ISM Receiver
Manufacturer	Continental Automotive GmbH Siemensstrasse, 12, 93055 Regensburg, Germany.
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition) & ICES-003 (January 2016, updated April 2017)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Jose Manuel Gómez Industrial & Automotive EMC Lab Manager
Date of issue	2020-07-20
Report template No	FDT08_22 (*) "Data provided by the client"

## Index

Competences and guarantees .....	3
General conditions .....	3
Uncertainty .....	3
Data provided by the client.....	4
Usage of samples .....	5
Test sample description .....	6
Identification of the client.....	7
Testing period and place.....	7
Document history .....	7
Environmental conditions .....	8
Remarks and comments .....	9
Testing verdicts.....	9
List of equipment used during the test.....	9
Summary .....	10
Appendix A: Test results .....	11

## Competences and guarantees

---

DEKRA Testing and Certification 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 has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification 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 at the time of performance of the test.

DEKRA Testing and Certification 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 Testing and Certification.

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

## Uncertainty

---

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

The total uncertainty of the measurement system for the measured conducted disturbance characteristics of EUT from 150kHz to 30 MHz is  $I = \pm 3,9$  dB for quasi-peak measurements,  $I = \pm 3,2$  dB for average measurements ( $k = 2$ )

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 18 GHz is  $I = \pm 2,6$  dB for peaks 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:

### **TCAM1NA0:**

The TCAM is a vehicle antenna module for telematic and connectivity purposes.

It consists of a fin antenna with integrated telematics transceivers for different wireless services as well as several interfaces to the vehicle.

### **The TCAM1NA0 main parts are:**

Antennas for cellular, WLAN, BLE, ISM receiver (RKE), SDARS with LNA

GNSS with LNA for Navigation: Beidou, Galileo, GPS, Glonass

Antenna selection via RF switches

TCAM internal antennas (all are TCAM internal, no extern antenna connections):

Tel1 ant: 2G, 3G, 4G/LTE1 (vehicle outside)

Tel2 ant: LTE2 (Rx only) (vehicle outside)

MIMO with LTE1- and LTE2-antenna. LTE2 is Rx only

Backup telephone antenna: 2G, 3G, 4G/LTE (vehicle inside)

Wi-Fi internal antenna (vehicle inside)

Wi-Fi external antenna (vehicle outside)

BLE antenna (vehicle outside)

Stacked patch antenna featuring GNSS

ISM receiver antenna

SDARS antenna

CAT4 NAD with 2G/3G/4G/LTE and GNSS, FCC certified

VoLTE

ISM receiver module (434MHz) for: RKE (Remote Keyless Entry), PASE (Passive Start and Entry, TPMS (Tire Pressure Monitoring System), FCC tested

Wi-Fi chip

BLE chip

1st internal embedded Sim-IC

Service calls

### **External interfaces:**

Main power supply

External backup battery

External SIM card slot (2nd private customer SIM, optional)

External microphone in the OHC (Overhead Compartment)

A2B

External backup speaker

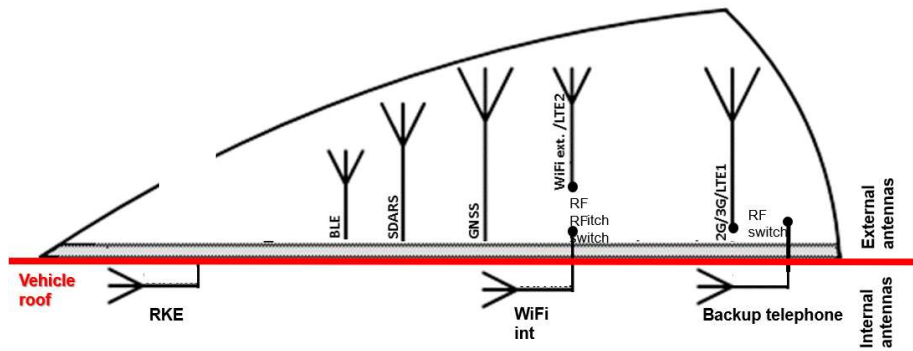
BroadR-Reach

CEM connection (K-Line)

Infotainment CAN

Airbag input

Debug interfaces (USB, UART)



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.

## Usage of samples

Samples under test have been selected by: The client.

Sample S/01 (Configuration 1, Main Antenna) is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
59830/006	TCAM: Telematics and Connectivity Antenna Module	TCAM1NA0	SNRD004293	2019-10-22

Auxiliary elements used with the samples S/01:

Control N°	Description	Model	Serial N°	Date of reception
59830/034	Harness	---	---	2019-11-11

Sample S/02 (Configuration 2, Backup Antenna) is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
59830/006	TCAM: Telematics and Connectivity Antenna Module	TCAM1NA0	SNRD004293	2019-10-22

Auxiliary elements used with the samples S/01:

Control N°	Description	Model	Serial N°	Date of reception
59830/034	Harness	---	---	2019-11-11

## Test sample description

Ports..... :	Port name and description	Cable				
		Specified length [m]	Attached during test	Shielded		
	USB diagnostic	~3m	<input type="checkbox"/>	<input type="checkbox"/>		
	UART diagnostic	~3m	<input type="checkbox"/>	<input type="checkbox"/>		
	BRR diagnostic	~3m	<input type="checkbox"/>	<input type="checkbox"/>		
Supplementary information to the ports..... :	N/A					
Rated power supply .....	Voltage and Frequency	Reference poles				
		L1	L2	L3	N	PE
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 12Vdc				
<input type="checkbox"/>	DC:					
Rated Power .....	4.2 W dc (cellular, Wi-Fi, BLE, GNSS active)					
Internal operating frequencies .....	32.768kHz, 16MHz, 19.2MHz, 24MHz, 25MHz, 27.6MHz, 48MHz					
Other parameters..... :	Operating temperature Range: -40°C to 85°C Supply Voltage Range: 8 V to 16 V DC					
Software version .....	PI007.1					
Hardware version..... :	E4.2					
Dimensions in cm (L x W x D) .....	10.5cm x 15.5cm x 9cm					
Mounting position..... :	<input type="checkbox"/>	Table top equipment				
	<input type="checkbox"/>	Wall mounted equipment				
	<input type="checkbox"/>	Floor standing equipment				
	<input type="checkbox"/>	Hand-held equipment				
	<input checked="" type="checkbox"/>	Other: Vehicular environment equipment				

Modules/parts .....	Module/parts of test item	Type	Manufacturer
	Network Access Device (NAD), (cellular, GNSS)	Model: BL28NA-001	Continental Automotive Systems
	ISM/RKE 434 MHz RF receiver module	Model: A2C38291300	Continental Automotive GmbH
Accessories (not part of the test item) .....	Description	Type	Manufacturer
	bracket		
	1x harness w/o USB		
	3x harness w USB		
	Inlay disc		
	Design cap		
Documents as provided by the applicant.....	Description	File name	Issue date
	TCAM_Testhouse_Manual_29Oct2019_V1		

## Identification of the client

Continental Automotive GmbH  
 Siemensstrasse, 12. 93055. Regensburg, Germany.

## Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-02-03
Date (finish)	2020-02-04

## Document history

Report number	Date	Description
59830REM.005	2020-04-07	First release
59830REM.005A1	2020-06-18	First modification due to typos. This modification test report cancels and replaces the test report 59830REM.005
59830REM.005A2	2020-07-20	Second modification due to typos. This modification test report cancels and replaces the test report 59830REM.005A1

## Environmental conditions

---

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

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 30 % Max. = 75 %
<b>Air pressure</b>	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 30 % Max. = 75 %
<b>Air pressure</b>	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 30 % Max. = 60 %
<b>Air pressure</b>	Min. = 860 mbar Max. = 1060 mbar



## Remarks and comments

The test have been performed by the technical personnel: Lorena Oviedo & Daniel Mejías.

## Testing verdicts

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

## List of equipment used during the test

Nº de Control / Control Number	Descripción / Description	Modelo / Model	Fabricante / Manufacturer	Próxima Calibración / Next Calibration
4523	EMI TEST RECEIVER 20Hz-26.5GHz	ESU26	ROHDE AND SCHWARZ	2020-02-21
4578	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2020-04-03
4612	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2021-06-14
5641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2021-07-31
6064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	Frankonia	---
6126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2020-04-03
6129	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2020-04-03
6132	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2020-04-05
6165	EMI TEST RECEIVER 9kHz-7GHz	ESR7	ROHDE AND SCHWARZ	2021-10-16
6195	PRE-AMPLIFIER G>55dB 1-18GHz	AMF-7D-01001800-22-10P	NARDA	2020-02-21
6329	SHIELDED ROOM	---	FRANKONIA	---

## Summary

Emission Test		
Requirement – Test case	Verdict	Remark
Radiated emission test (30 MHz – 1000 MHz)	Pass	N/A
Radiated emission test (1 GHz – 18 GHz)	Pass	N/A
Radiated emission test (18 GHz – 26 GHz)	Pass	N/A
Conducted emission test (150 kHz to 30 MHz)	N/A	See 1
Supplementary information and remarks: 1) The test is not applicable, not required by the standard (equipment not designed to be connected to the public utility (AC) power line).		

## Appendix A: Test results

## Appendix A Content

DESCRIPTION OF THE OPERATION MODES .....	13
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE .....	14

## 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:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc.

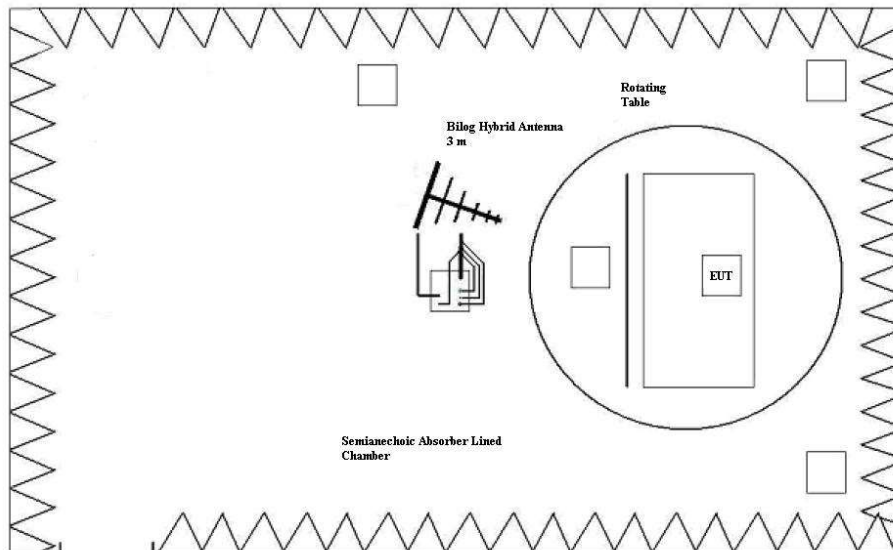
## RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

<b>LIMITS:</b>	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 (January 2016, updated April 2017)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 (January 2016, updated April 2017)

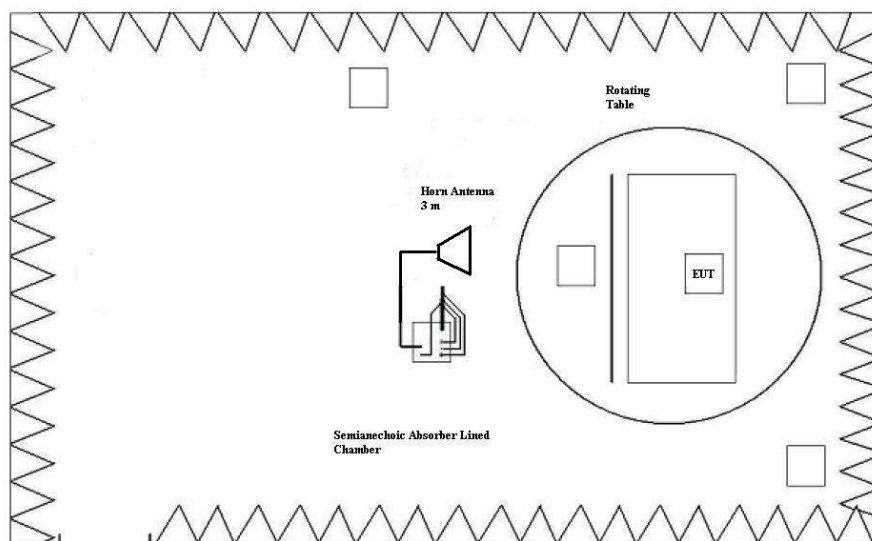
### Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 (January 2016, updated April 2017) in the frequency range 30 MHz to 26 GHz for class B equipments.

Frequency range (MHz)	QP Limit for 3 m		PK Limit for 3 m
	( $\mu\text{V/m}$ )	( $\text{dB}\mu\text{V/m}$ )	( $\text{dB}\mu\text{V/m}$ )
30 to 88	100	40	---
88 to 216	150	43.5	---
216 to 960	200	46	---
Above 960	500	54	74



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

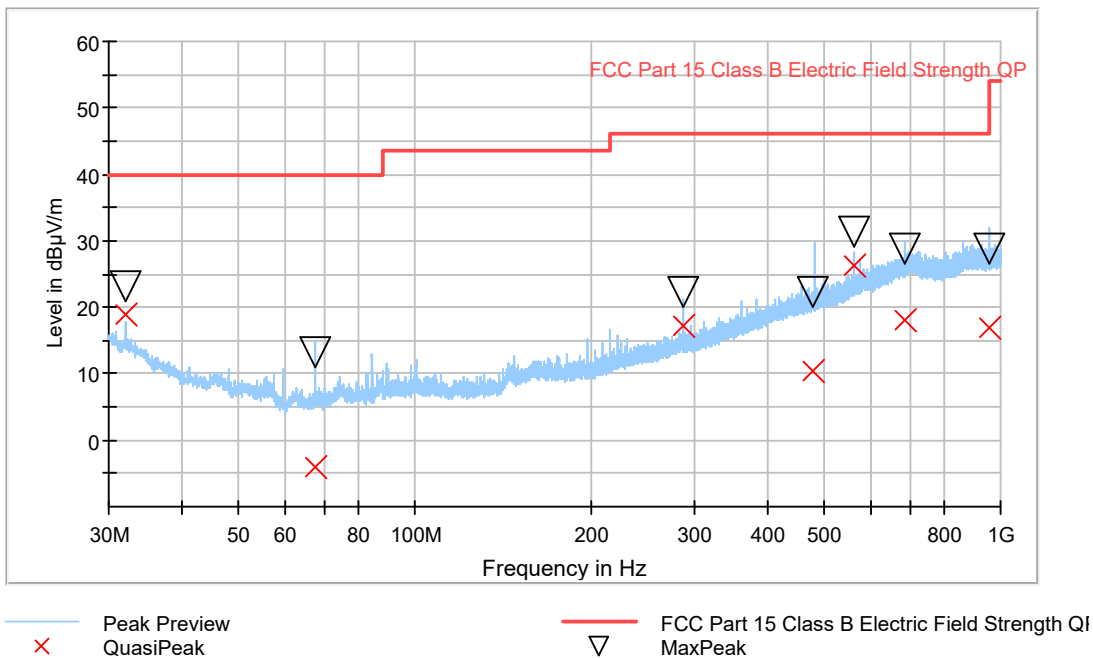
<b>TESTED SAMPLE:</b>	S/01
<b>TESTED OPERATION MODES:</b>	OM#01
<b>TEST RESULTS:</b>	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz. Main antenna.	P
CR0101HR1_HP	Range: 1-18 GHz. Main antenna.	P
CR0101HR1_VP	Range: 1-18 GHz. Main antenna.	P
CR0101HR2_HP	Range: 18-26 GHz. Main antenna.	P
CR0101HR2_VP	Range: 18-26 GHz. Main antenna.	P
CR0201LR	Range: 30 MHz - 1000 MHz. Backup antenna.	P
CR0201HR1_HP	Range: 1-18 GHz. Backup antenna.	P
CR0201HR1_VP	Range: 1-18 GHz. Backup antenna.	P
CR0201HR2_HP	Range: 18-26 GHz. Backup antenna.	P
CR0201HR2_VP	Range: 18-26 GHz. Backup antenna.	P

**Radiated Emission. CR0101LR Main Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/01  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc.

**Full Spectrum**



**Maximizations**

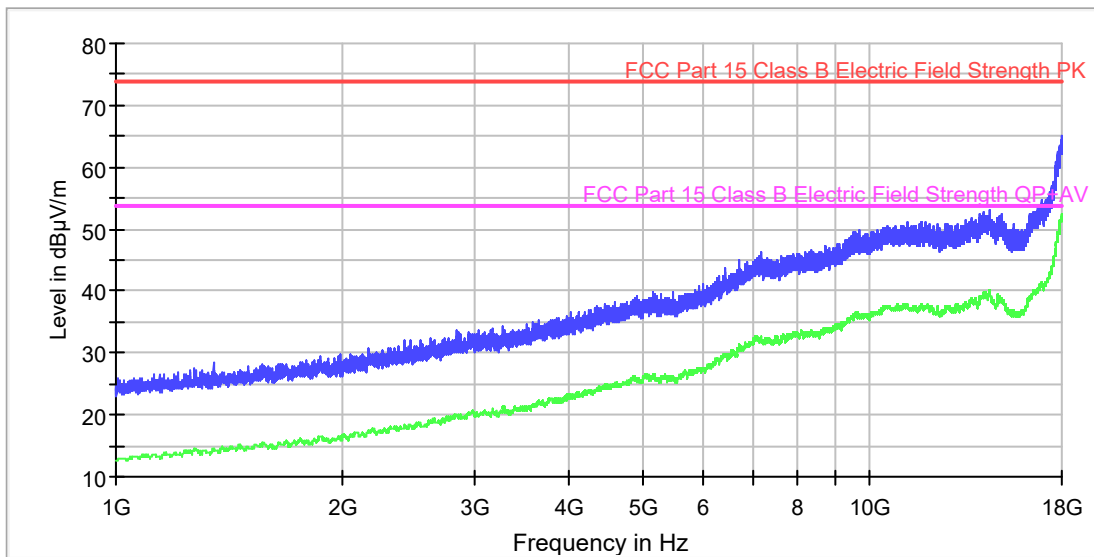
Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
31.983000	18.81	23.24	40.00	21.19	223.0	H	36.0
67.697000	-3.98	13.13	40.00	43.98	153.0	H	232.0
287.985000	17.09	22.30	46.00	28.91	127.0	H	197.0
479.590000	10.46	22.35	46.00	35.54	277.0	V	156.0
562.518000	26.21	31.24	46.00	19.79	166.0	V	124.0
687.465000	18.08	28.82	46.00	27.92	244.0	H	155.0
959.649000	16.97	28.77	46.00	29.03	210.0	H	1.0



**Radiated Emission. CR0101HR1\_HP Main Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/01  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Horizontal Polarization.

**RE FCC Part 15 ClassB 1-18 GHz**



- Average Scan
- Peak Scan
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

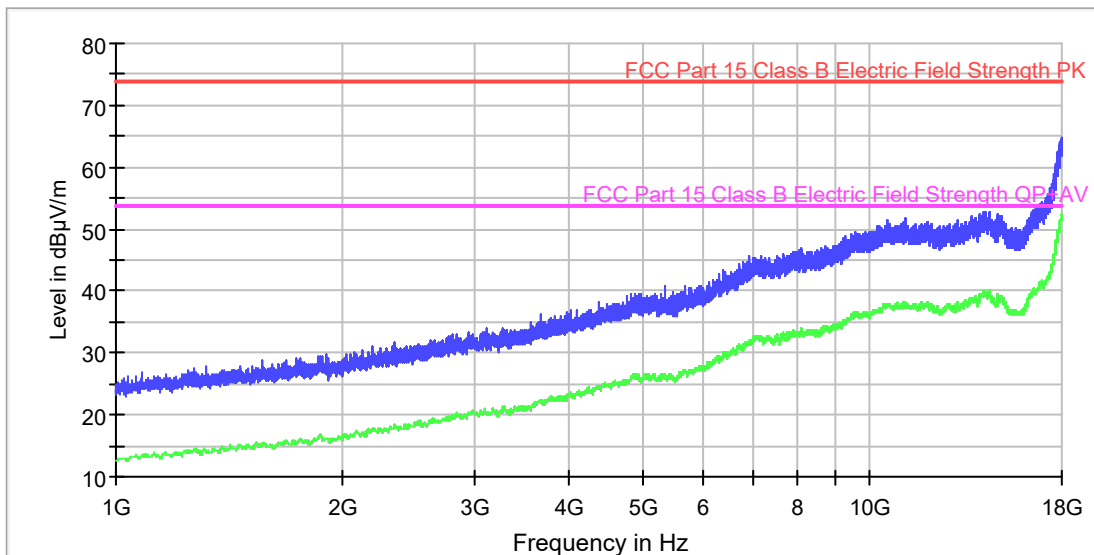
**Subrange Maxima**

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1269.600000	27.4	14.5
1770.000000	28.5	15.4
2369.600000	31.1	17.6
3152.800000	33.8	20.4
4198.400000	36.5	23.9
5148.000000	39.9	26.3
7190.000000	46.3	32.4
9668.400000	49.8	35.9
13438.000000	51.4	37.8
17950.000000	65.1	51.5

**Radiated Emission. CR0101HR1\_VP Main Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/01  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Vertical Polarization.

**RE FCC Part 15 ClassB 1-18 GHz**



- Average Scan
- Peak Scan
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

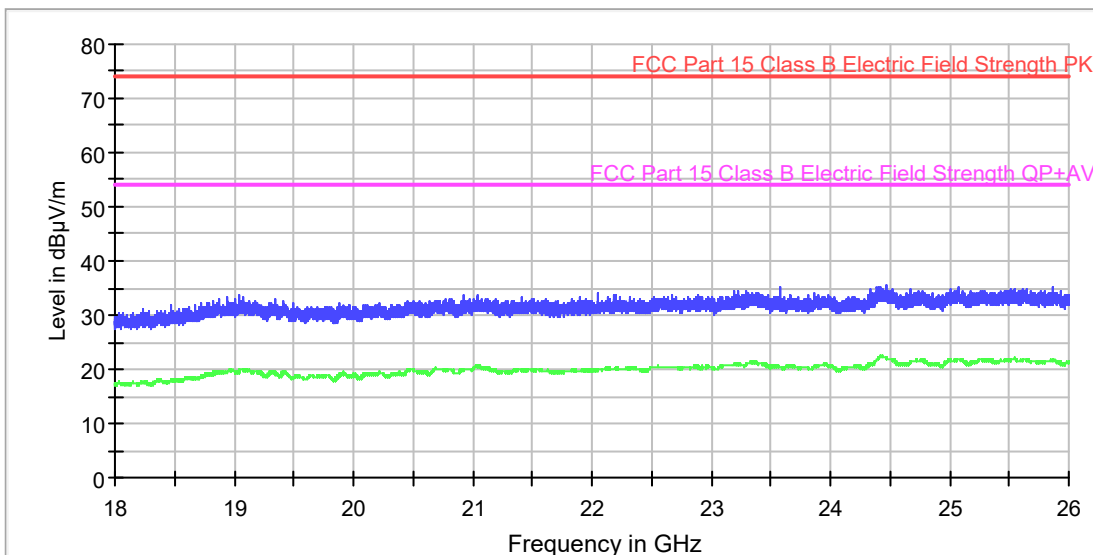
**Subrange Maxima**

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
1316.800000	27.7	14.0
1734.400000	29.2	15.5
2344.800000	31.8	18.3
3113.200000	33.8	20.2
4092.000000	36.9	23.5
5342.800000	40.6	26.6
7550.400000	45.6	32.1
10019.200000	49.6	36.3
11148.000000	51.8	37.9
17996.800000	64.7	52.5

**Radiated Emission. CR0101HR2\_HP Main Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/01  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Horizontal Polarization.

**RE FCC Part 15 ClassB 18-26 GHz**



- Average Scan
- Peak Scan
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

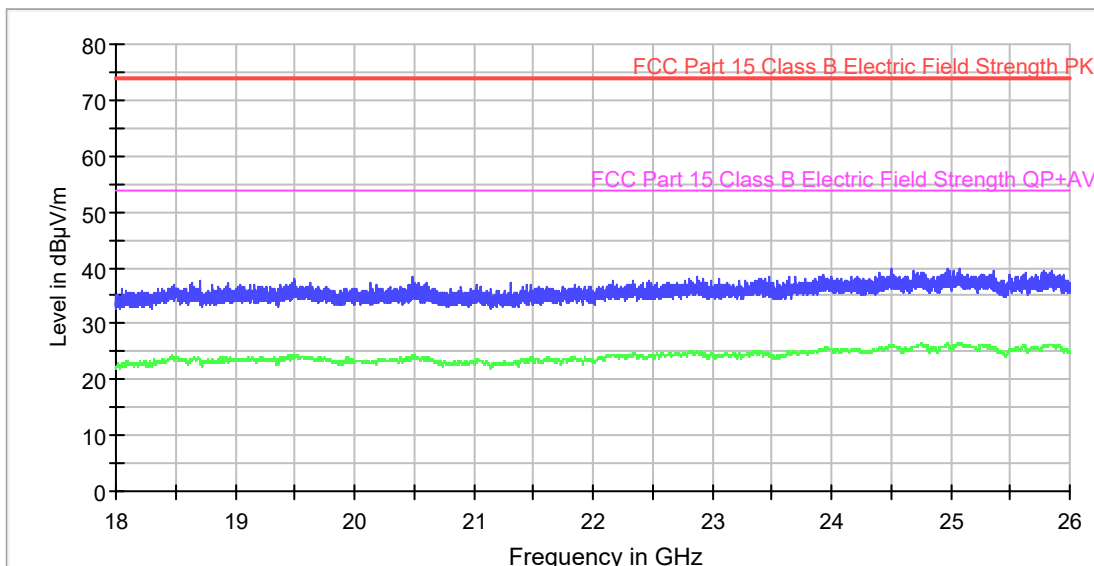
**Subrange Maxima**

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
18722.400000	32.2	18.6
19040.000000	33.7	19.4
20221.200000	32.2	19.3
21042.800000	33.8	20.5
21903.200000	33.2	19.6
22046.800000	34.2	19.9
23572.800000	35.0	20.4
24394.800000	35.1	21.8
24472.000000	35.4	22.1
25857.600000	35.3	21.7

**Radiated Emission. CR0101HR2\_VP Main Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/01  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Vertical Polarization.

**RE FCC Part 15 ClassB 18-26 GHz**



- AVG\_CLRWR
- PK+\_CLRWR
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

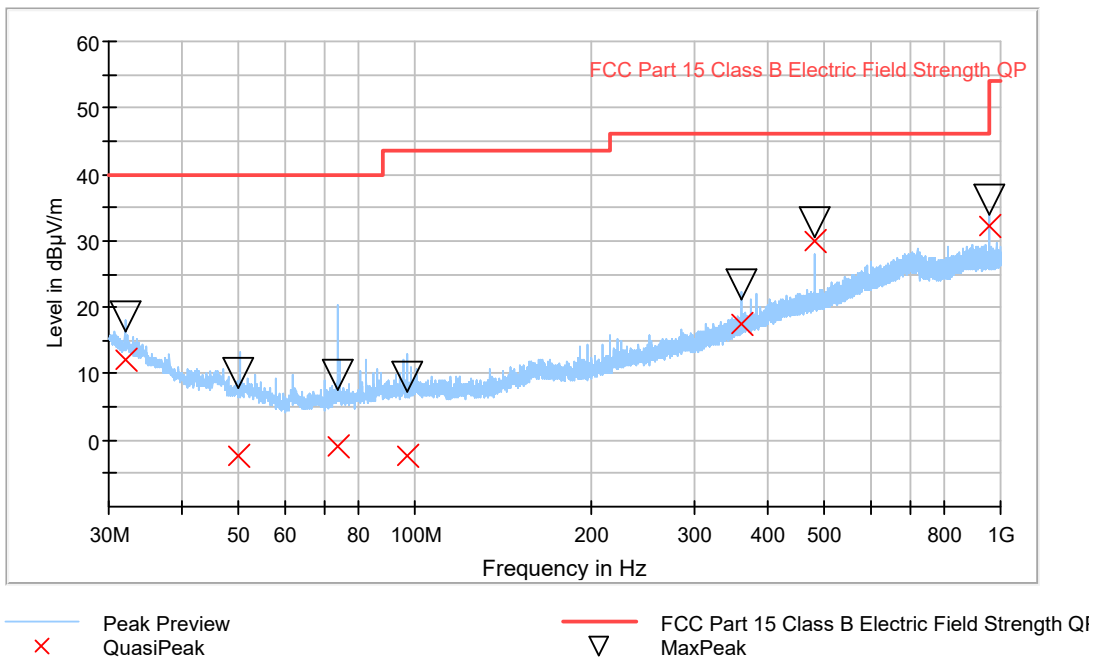
**Subrange Maxima**

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18634.400000	37.4	23.5
18705.200000	37.8	23.1
19494.000000	37.9	24.2
20491.200000	38.4	24.2
21314.400000	37.2	22.7
22340.000000	37.6	24.7
22877.200000	38.3	25.0
23934.000000	38.6	25.4
24500.800000	39.7	26.2
25075.600000	39.9	26.5

**Radiated Emission. CR0201LR Backup Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/02  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc.

**Full Spectrum**



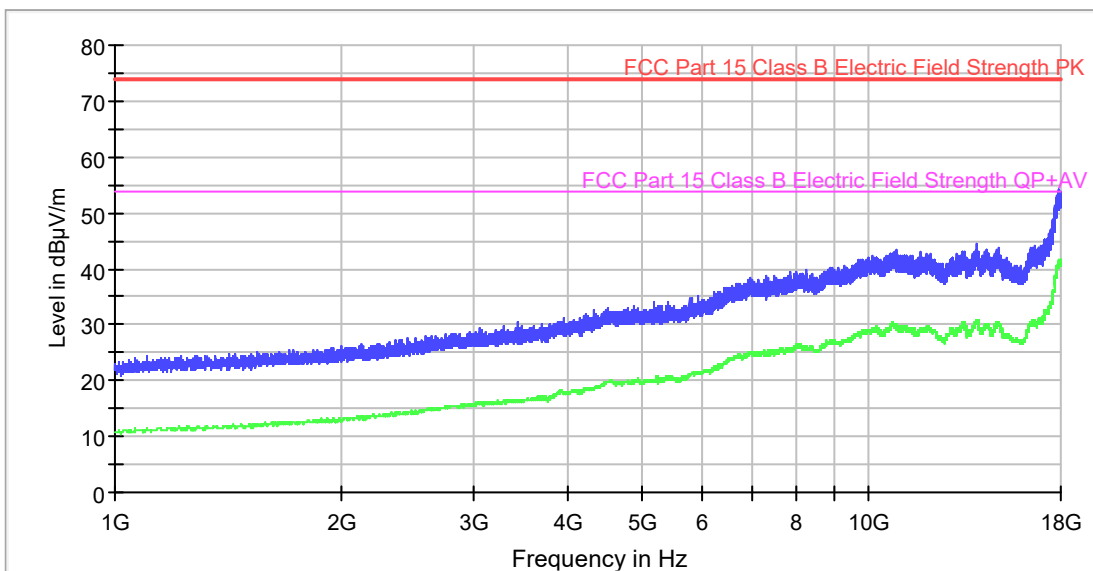
**Maximizations**

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
31.996000	12.03	18.73	40.00	27.97	242.0	H	40.0
49.861000	-2.49	10.18	40.00	42.49	223.0	H	98.0
73.687000	-0.89	9.89	40.00	40.89	164.0	H	147.0
97.324000	-2.26	9.53	43.52	45.78	366.0	H	92.0
359.987000	17.49	23.53	46.00	28.51	139.0	V	0.0
479.998000	29.82	32.68	46.00	16.18	100.0	V	24.0
960.013000	32.13	36.30	53.97	21.84	153.0	H	29.0

**Radiated Emission. CR0201HR1\_HP Backup Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/02  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Horizontal Polarization.

**ER EMI FCC 15 Class B (1-18GHz)**



- AVG\_CLRWR
- PK+\_CLRWR
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

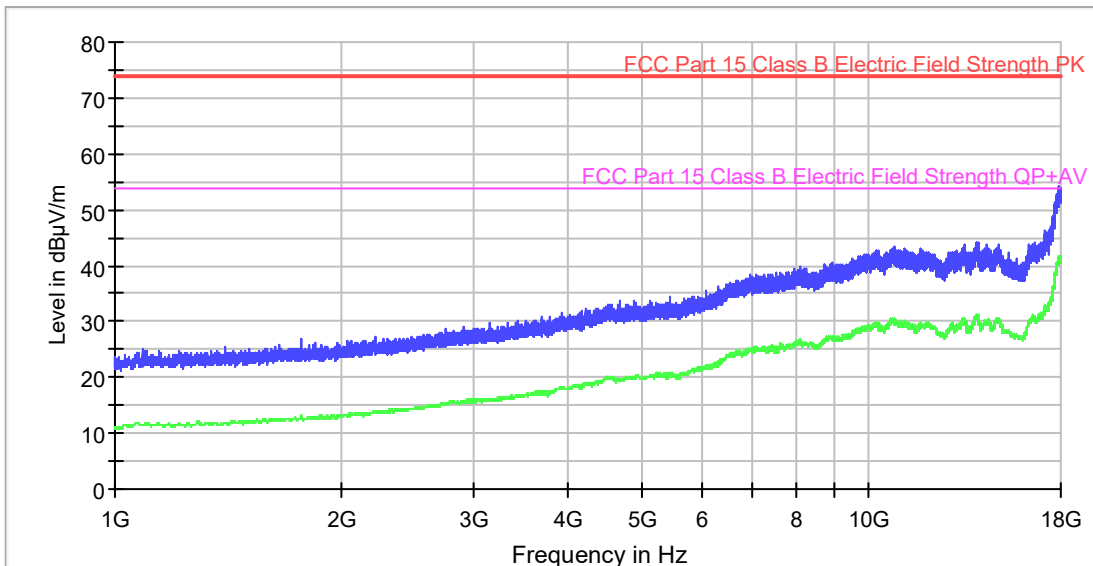
**Subrange Maxima**

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1220.800000	24.5	11.5
1702.800000	25.5	12.4
2353.600000	27.1	14.3
3047.600000	29.4	15.9
4204.400000	32.1	18.5
5193.600000	34.2	20.0
7334.000000	38.9	25.0
9988.400000	42.0	29.1
10870.000000	43.3	29.8
17924.400000	54.0	41.2

**Radiated Emission. CR0201HR\_VP Backup.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/02  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Vertical Polarization.

**ER EMI FCC 15 Class B (1-18GHz)**



- AVG\_CLRWR
- PK+\_CLRWR
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

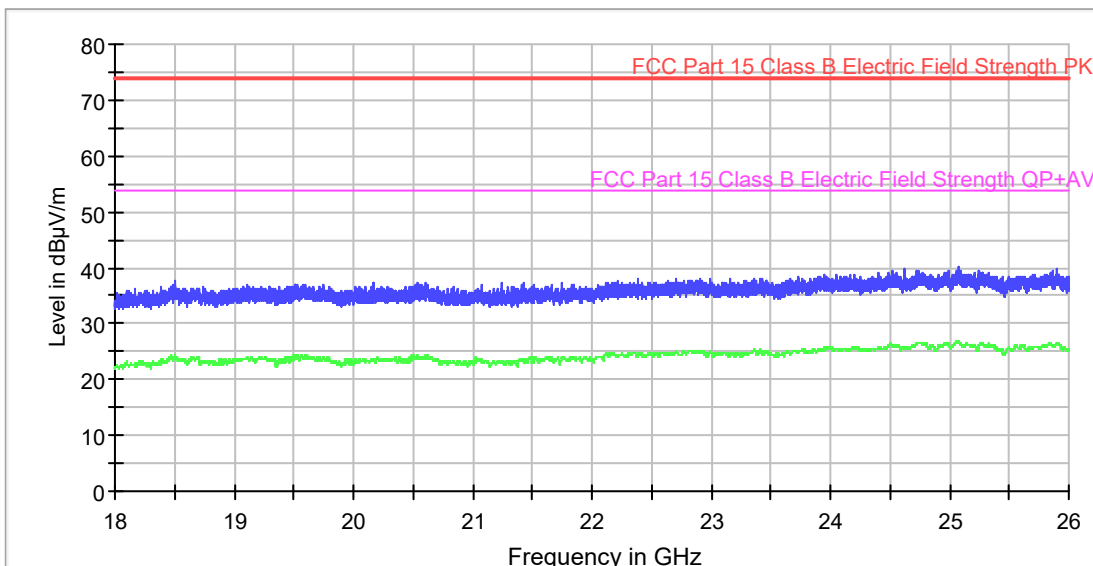
**Subrange Maxima**

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
1086.400000	25.0	11.5
1766.000000	26.9	13.4
2213.200000	27.3	13.6
3147.200000	29.6	15.9
4221.600000	32.5	18.9
5455.200000	34.3	20.6
7534.400000	38.7	25.2
9985.600000	42.0	29.2
13402.800000	43.9	30.3
17931.600000	54.3	41.5

**Radiated Emission. CR0201HR2\_HP Main Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/02  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Horizontal Polarization.

**ER EMI FCC 15 Class B(18-26GHz)**



- AVG\_CLRWR
- PK+\_CLRWR
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

**Subrange Maxima**

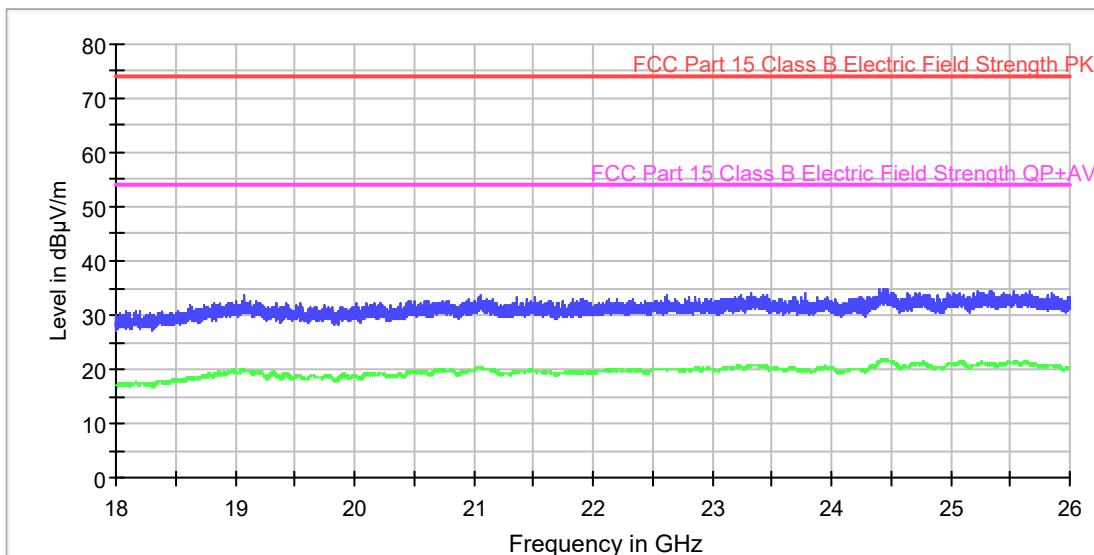
Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18499.600000	37.6	24.0
19112.400000	36.8	24.0
19514.000000	37.1	23.9
20532.800000	37.5	24.2
21430.800000	37.2	23.3
22382.800000	38.0	24.2
22709.200000	38.2	24.8
24052.000000	38.9	25.5
24624.000000	39.7	25.9
25068.000000	40.1	26.7



**Radiated Emission. CR0201HR2\_VP Backup Antenna.**

Project: 59830REM.005  
 Company: CONTINENTAL AUTOMOTIVE GMBH  
 Sample: S/02  
 Operation mode: OM#01  
 Description: EUT ON. Bluetooth without communication established. GPS active and receiving positioning signal. SRD 433MHz active and receiving signal. WiFi 2.4 GHz not communication established. WiFi 5 GHz not communication established MS in IDLE mode. LTE Band 2. Power supply: 12Vdc. Vertical Polarization.

**ER EMI FCC 15 Class B (18-26GHz)**



- Average Scan
- Peak Scan
- FCC Part 15 Class B Electric Field Strength PK
- FCC Part 15 Class B Electric Field Strength QP+AV

**Subrange Maxima**

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
18733.600000	31.9	18.6
19070.800000	33.5	19.9
20213.200000	32.3	19.2
21054.400000	33.7	20.4
21364.400000	33.4	19.5
22625.600000	33.6	19.9
23321.200000	34.1	20.7
24397.600000	34.7	21.4
24472.000000	34.9	21.6
25663.600000	34.4	21.0