



LCIE

Bluetooth Low Energy Template: Release August 08th, 2017

# TEST REPORT

N°: 151790-712758

Version : 01

## Subject

Radio spectrum matters  
tests according to standards:  
47 CFR Part 15.247 & RSS-247 Issue 2 & RSS-Gen Issue 4

## Issued to

Bluebeep SAS  
ZA les boulaies, Male  
61260-val au perche  
France

## Apparatus under test

Product	Car Seat Guardian
Trade mark	bluebeep
Manufacturer	Bluebeep sas
Model under test	Car Seat Guardian
Serial number	CS00001
FCC ID	2AOV7-CS0001
IC ID	23639-CS0001

## Test date

: December 20, 2017 to December 22, 2017

## Test location

Fontenay Aux Roses

## Test Site

6230B-1

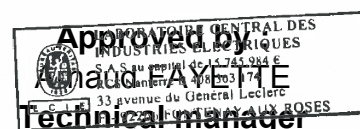
## Composition of document

38 pages

## Document issued on

September 11, 2018

Written by :  
Mathieu CERISIER  
Tests operator



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## PUBLICATION HISTORY

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Modification</b>
01	January 17, 2018	Mathieu CERISIER	Creation of the document



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## 1. TEST PROGRAM

### References

- 47 CFR Part 15.247
- RSS 247 Issue 2
- RSS Gen Issue 4
- KDB 558074 D01 DTS Meas Guidance v04
- ANSI C63.10-2013

### Radio requirement:

Clause (47CFR Part 15.247 & RSS-247 Issue 2 & RSS-Gen Issue 4) Test Description	Test result - Comments			
Occupied Bandwidth <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
6dB Bandwidth <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA()	<input type="checkbox"/> NP(1)
Duty Cycle <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Maximum Conducted Output Power <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Power Spectral Density <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Conducted Spurious Emission at the Band Edge <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA()	<input type="checkbox"/> NP(1)
Unwanted Emissions into Non-Restricted Frequency Bands <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA()	<input type="checkbox"/> NP(1)
AC Power Line Conducted Emission <a href="#">Pb</a>	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA(2)	<input type="checkbox"/> NP(1)
Unwanted Emissions into Restricted Frequency Bands <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Receiver Radiated emissions <a href="#">Pb</a>	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
This table is a summary of test report, see conclusion of each clause of this test report for detail.				

(1): Limited program

(2): EUT not directly or indirectly connected to the AC Power Public Network

PASS: EUT complies with standard's requirement

FAIL: EUT does not comply with standard's requirement

NA: Not Applicable

NP: Test Not Performed

## 2. EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER)

### 2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):  
bluebeep Car Seat Guardian

Serial Number: CS00001



Equipment Under Test



**Equipment information:**

Bluetooth LE Type:	<input checked="" type="checkbox"/> BLE	<input type="checkbox"/> v4.0	<input type="checkbox"/> v4.1	<input type="checkbox"/> v4.2
Frequency band:	[2400 – 2483.5] MHz			
Number of Channel:	40			
Spacing channel:	2MHz			
Channel bandwidth:	1MHz			
Antenna Type:	<input checked="" type="checkbox"/> Integral	<input type="checkbox"/> External	<input type="checkbox"/> Dedicated	
Antenna connector:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Temporary for test	
Transmit chains:	1			
Receiver chains	1			
Type of equipment:	<input checked="" type="checkbox"/> Stand-alone	<input type="checkbox"/> Plug-in	<input type="checkbox"/> Combined	
Ad-Hoc mode:	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No	
Duty cycle:	<input checked="" type="checkbox"/> Continuous duty	<input type="checkbox"/> Intermittent duty	<input type="checkbox"/> 100% duty	
Equipment type:	<input checked="" type="checkbox"/> Production model		<input type="checkbox"/> Pre-production model	
Operating temperature range:	Tmin:	<input type="checkbox"/> -20°C	<input checked="" type="checkbox"/> 0°C	<input type="checkbox"/> X°C
	Tnom:	20°C		
	Tmax:	<input type="checkbox"/> 35°C	<input type="checkbox"/> 55°C	<input checked="" type="checkbox"/> 60°C
Type of power source:	<input type="checkbox"/> AC power supply	<input type="checkbox"/> DC power supply	<input checked="" type="checkbox"/> Battery	
Operating voltage range:	Vnom:	<input type="checkbox"/> 120V/60Hz	<input checked="" type="checkbox"/> 3 Vdc	

**Antenna Characteristic**

Antenna assembly	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
1	1,6	2400-2483.5	50



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**CHANNEL PLAN**

Channel	Frequency (MHz)	Channel	Frequency (MHz)
<b>Cmin: 0</b>	2402	<b>Cmid: 20</b>	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	<b>Cmax: 39</b>	2480

**DATA RATE**

Data Rate (Mbps)	Modulation Type	Worst Case Modulation
1	GFSK	<input checked="" type="checkbox"/>

**2.2. RUNNING MODE**

The EUT is set in the following modes during tests:

- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- Permanent reception

**2.3. EQUIPMENT LABELLING**

No Label

**2.4. EQUIPMENT MODIFICATION**

- None       Modification:

### 3. OCCUPIED BANDWIDTH

#### 3.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

#### 3.2. TEST SETUP

- The Equipment Under Test is installed:

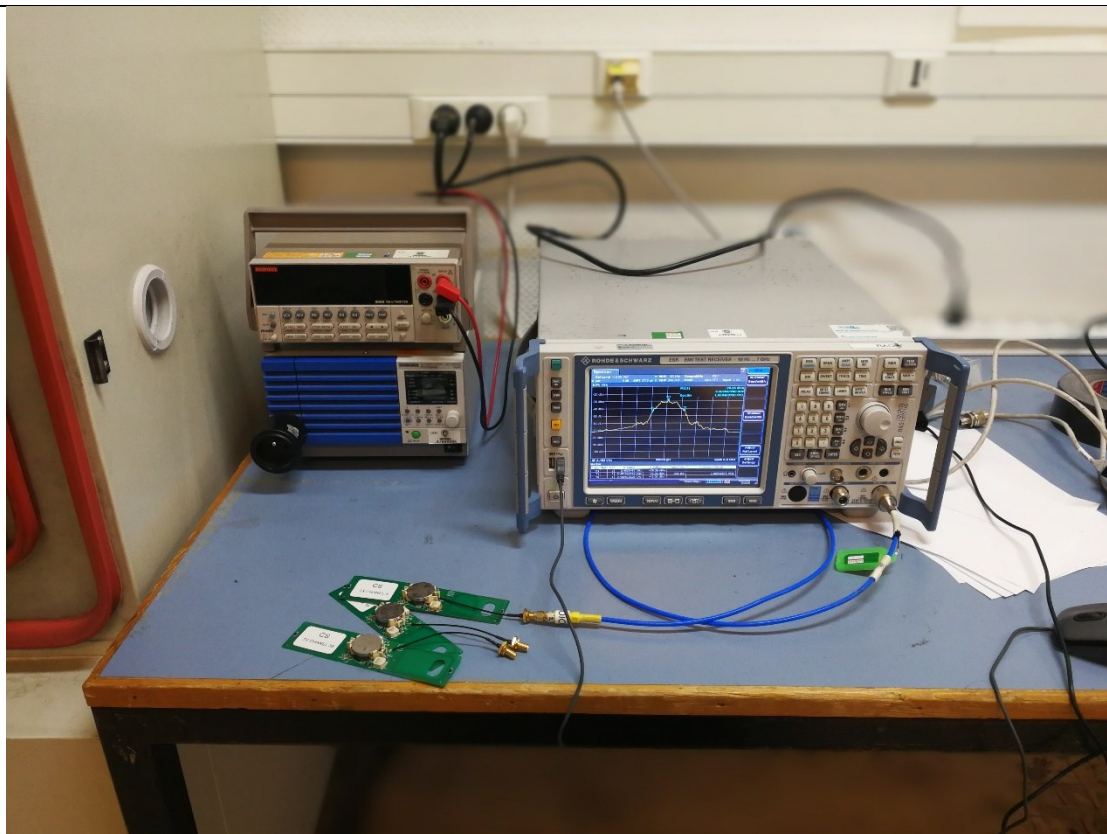
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- RSS-Gen Issue 4 § 6.6
- ANSI C63.10 § 6.9.2



Photograph for Occupied bandwidth





### 3.1. LIMIT

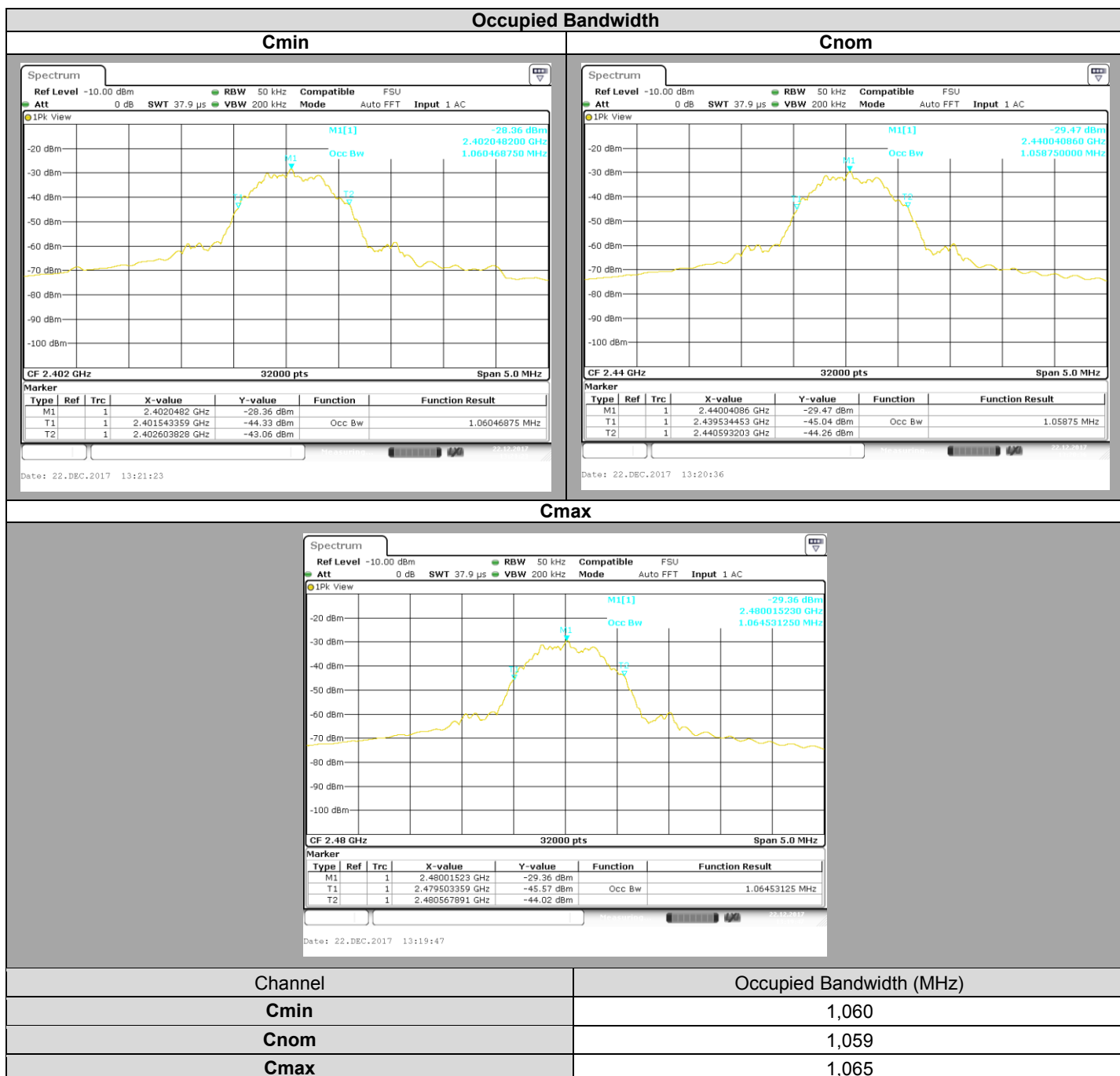
None

### 3.2. TEST EQUIPMENT LIST

Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Cable	-	-	A5329676	2017/10	2018/10

Note: In our quality system, the test equipment calibration due is more & less 2 months

### 3.3. RESULTS



### 3.1. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS-GEN ISSUE 4** limits.

## 4. 6dB EMISSION BANDWIDTH

### 4.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 4.2. TEST SETUP

- The Equipment Under Test is installed:

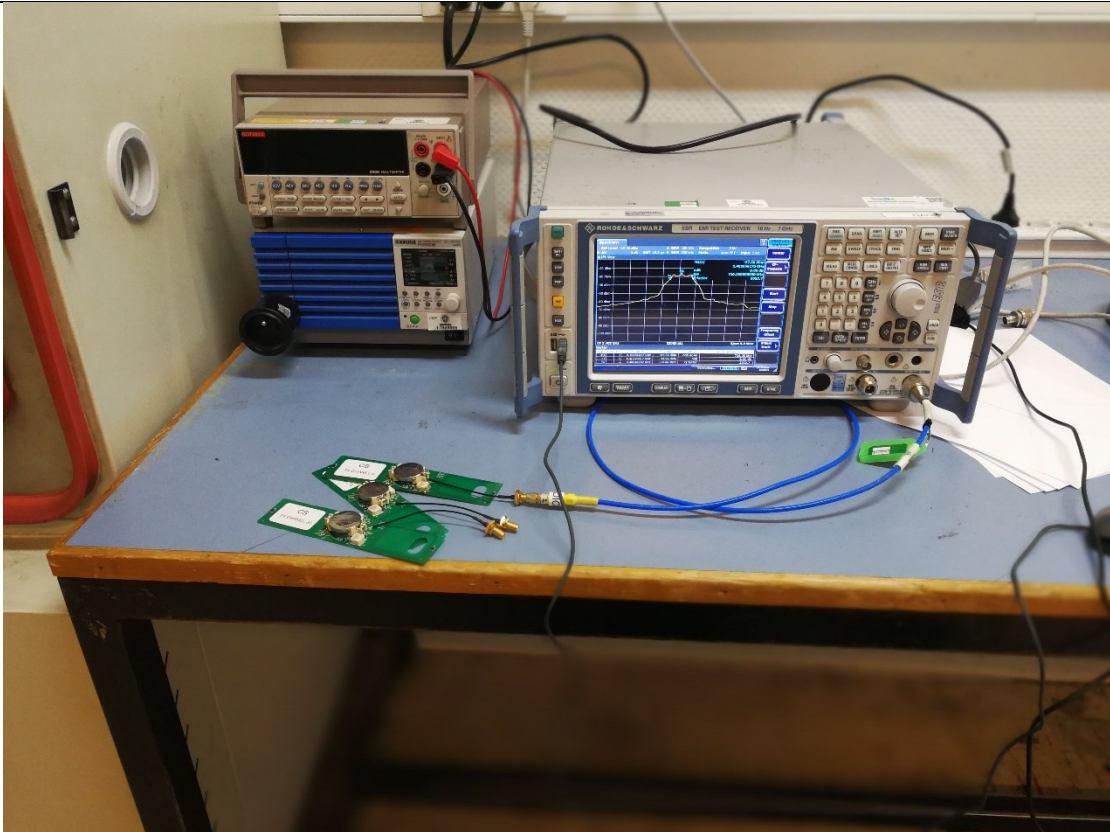
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v04 § 8.1
- KDB 558074 D01 DTS Meas Guidance v04 § 8.2



Photograph for 6dB emission bandwidth



#### 4.3. LIMIT

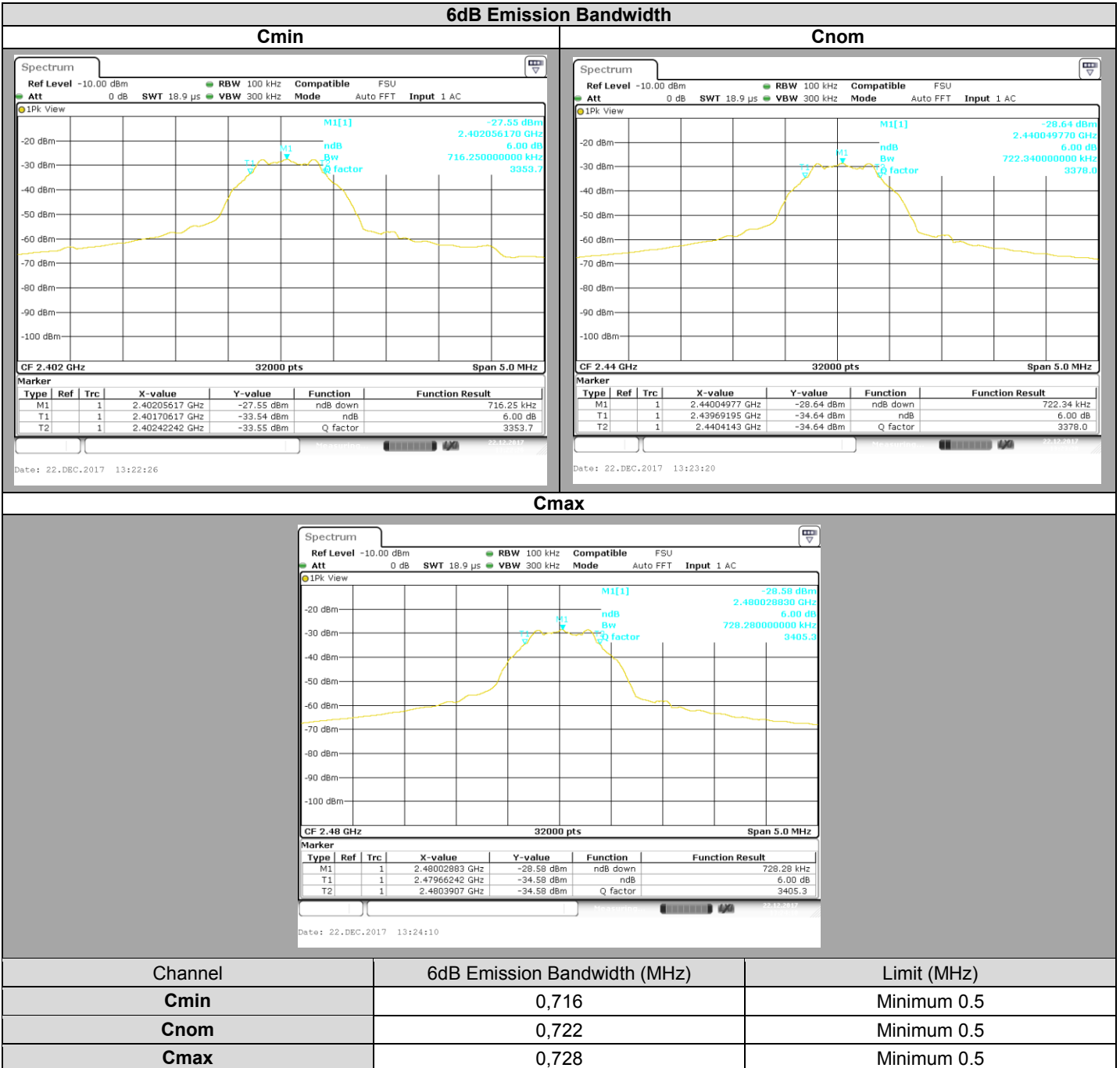
The 6dB bandwidth shall be at least 500kHz

#### 4.4. TEST EQUIPMENT LIST

Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Cable	-	-	A5329676	2017/10	2018/10

Note: In our quality system, the test equipment calibration due is more & less 2 months

#### 4.5. RESULTS



#### 4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant to the 47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

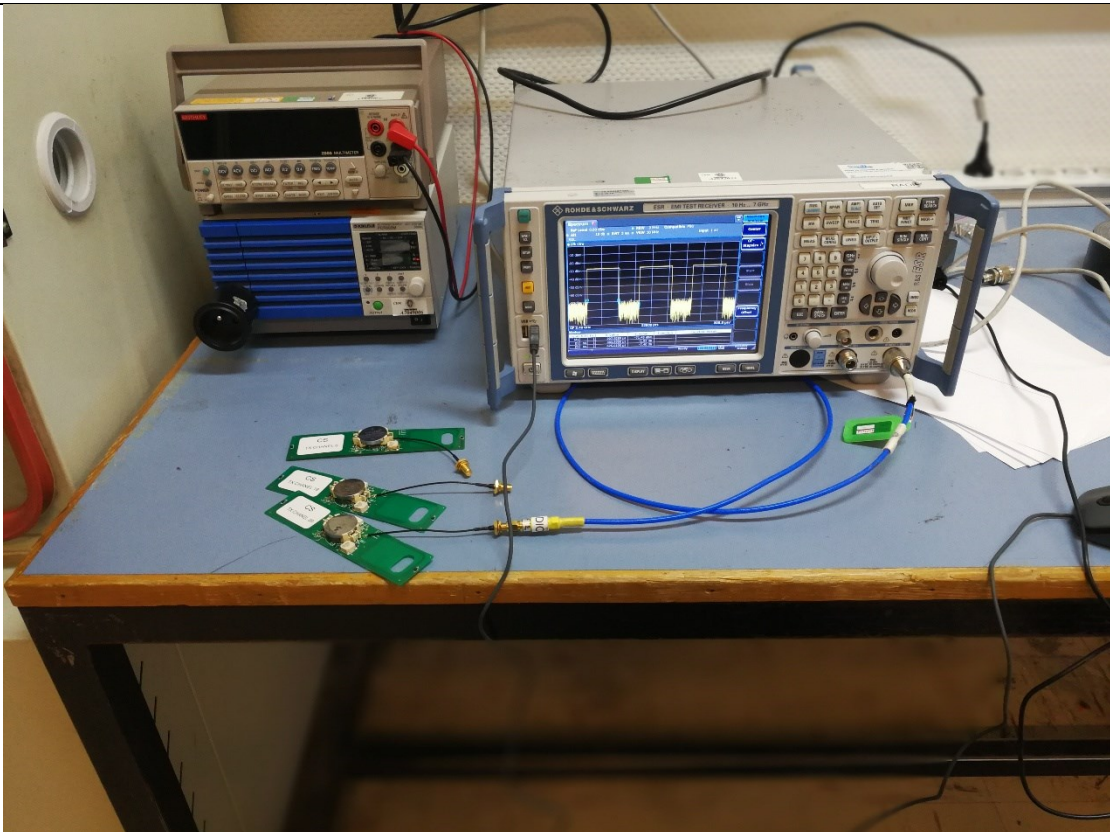
## 5. DUTY CYCLE

### 5.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 5.2. TEST SETUP

- The Equipment Under Test is installed:
  - On a table
  - In an anechoic chamber
- Measurement is performed with a spectrum analyzer in:
  - Conducted Method
  - Radiated Method
- Test Procedure:
  - KDB 558074 D01 DTS Meas Guidance v04 § 6.0 b)



Photograph for Duty Cycle

**5.3. LIMIT**

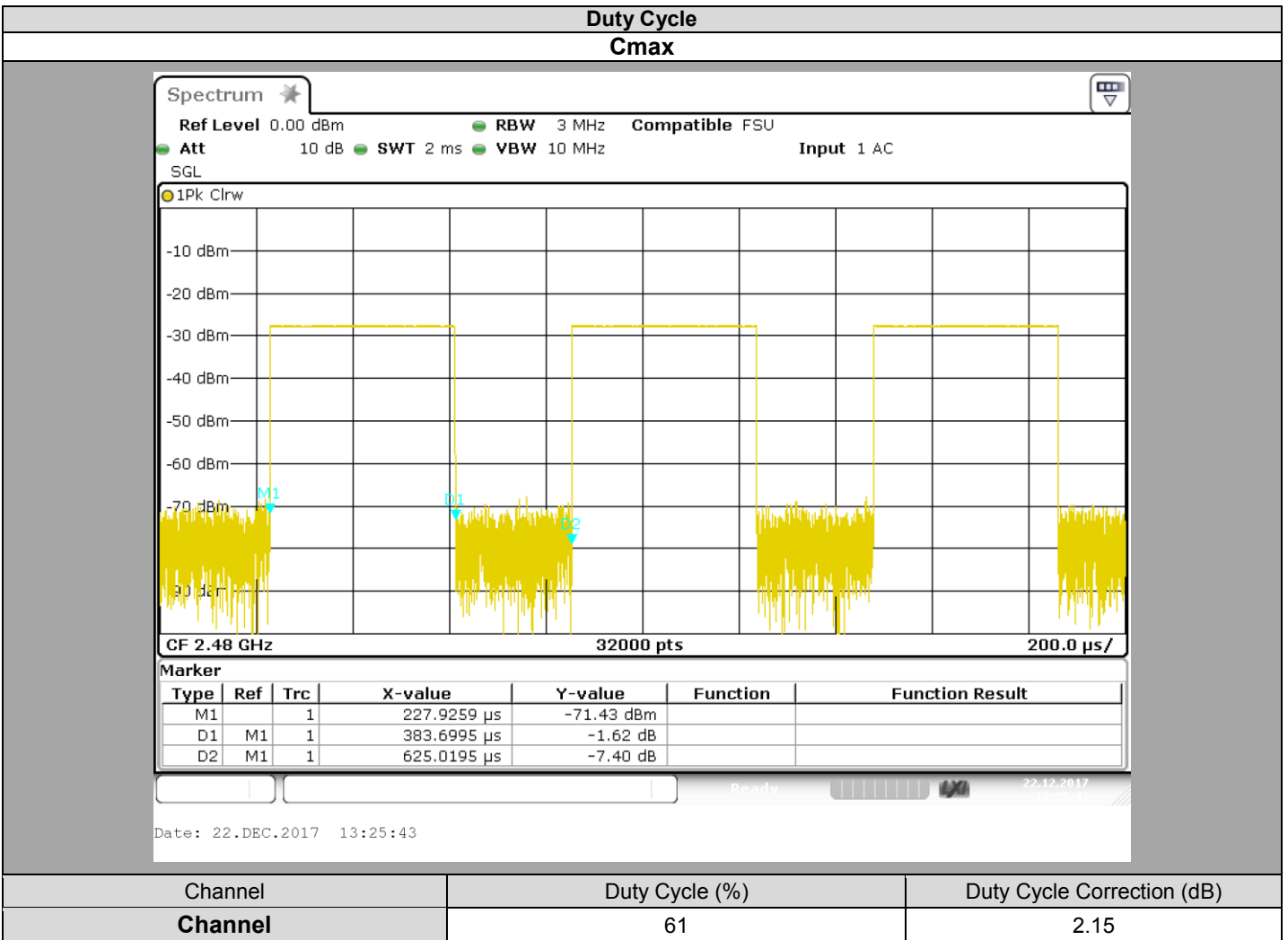
None

**5.4. TEST EQUIPMENT LIST**

Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Cable	-	-	A5329676	2017/10	2018/10

Note: In our quality system, the test equipment calibration due is more & less 2 months

**5.5. RESULTS**





## 5.6. CONCLUSION

Duty Cycle measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.



## 6. MAXIMUM CONDUCTED OUTPUT POWER

### 6.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 6.2. TEST SETUP

- The Equipment Under Test is installed:

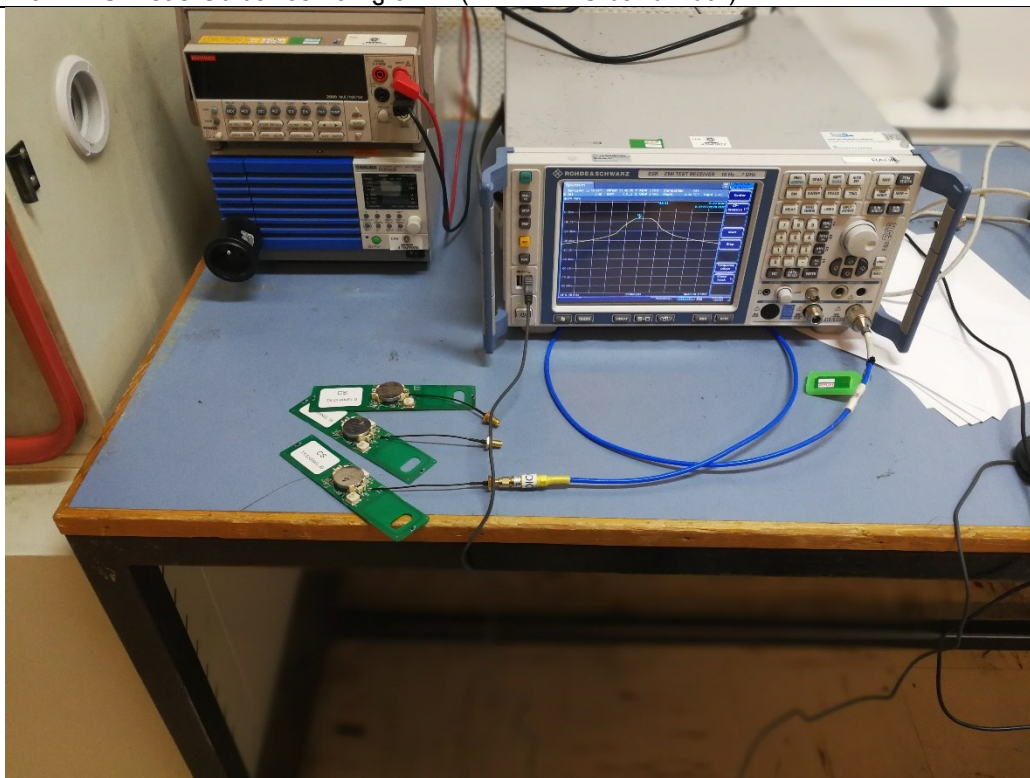
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v04 § 9.1.1 (RBW≥DTS bandwidth)



Photograph for Maximum Conducted Output Power



### 6.3. LIMIT

Maximum Conducted Output power:  
2400MHz-2483.5MHz: Shall not exceed 30dBm  
Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

### 6.4. TEST EQUIPMENT LIST

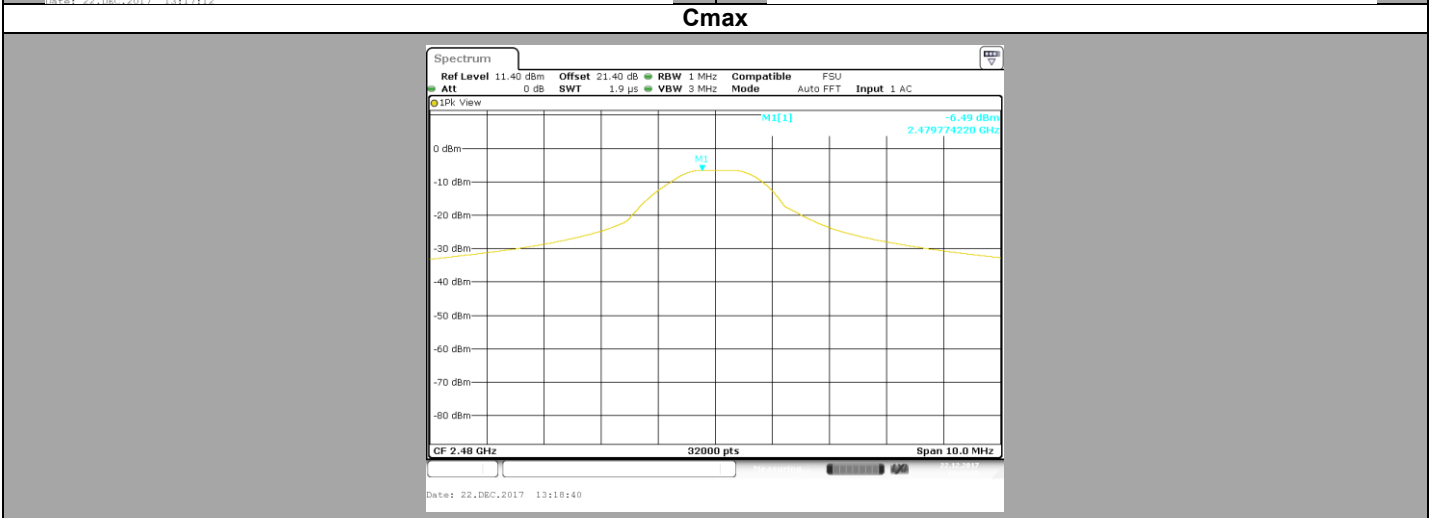
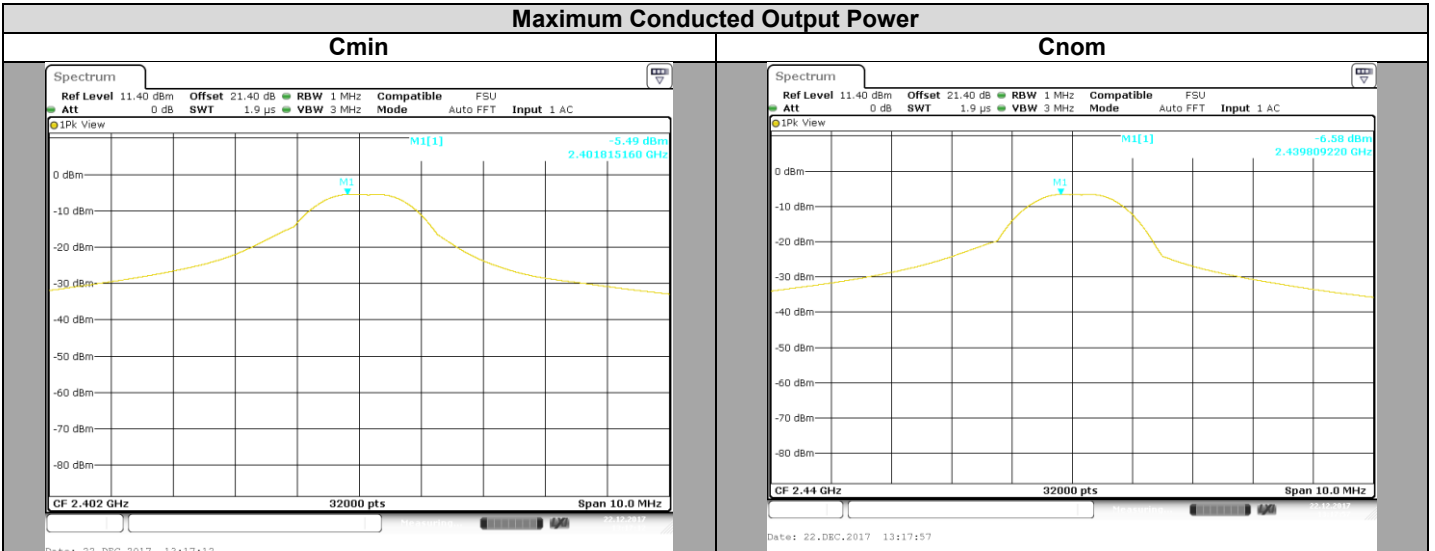
Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Cable	-	-	A5329676	2017/10	2018/10

Note: In our quality system, the test equipment calibration due is more & less 2 months



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## 6.5. RESULTS



Channel	Offset Cable + Att (dB)	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Limit (dBm)
<b>Cmin</b>	<b>21,4</b>	1,6	-5,49	30
<b>Cnom</b>	<b>21,4</b>	1,6	-6,58	30
<b>Cmax</b>	<b>21,4</b>	1,6	-6,49	30

## 6.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

## 7. POWER SPECTRAL DENSITY

### 7.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 7.2. TEST SETUP

- The Equipment Under Test is installed:

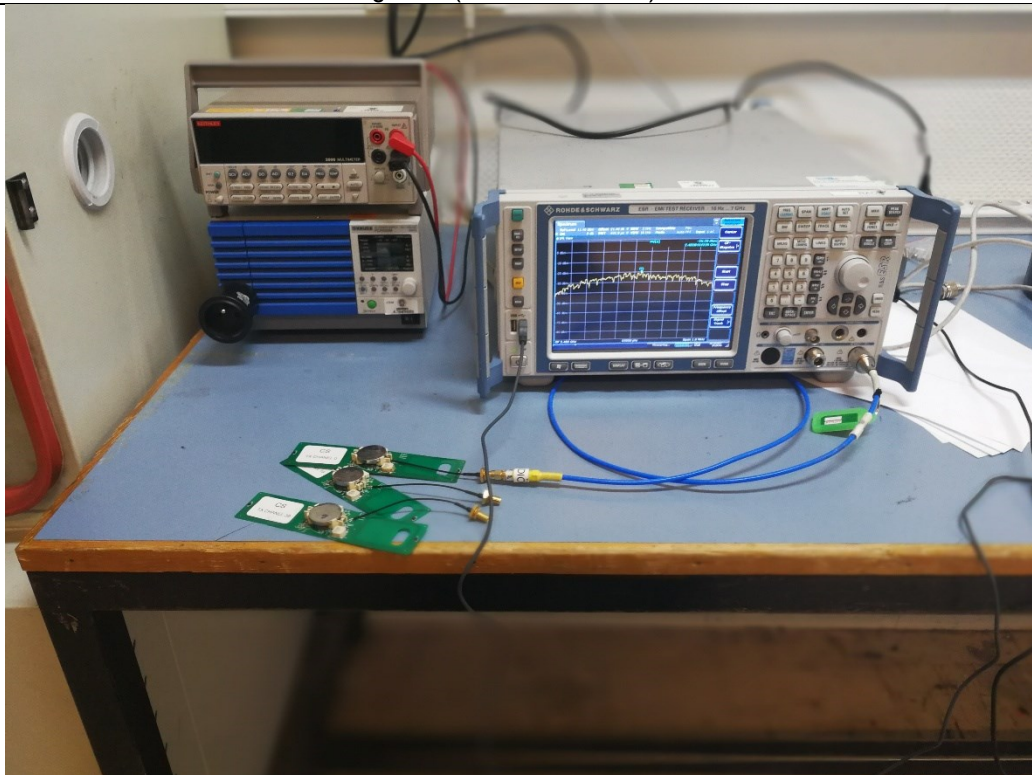
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v04 § 10.2 (Method PKPSD)



Photograph for Power Spectral Density



### 7.3. LIMIT

Power Spectral Density:

2400MHz-2483.5MHz: Shall not exceed 8dBm/3kHz

Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

### 7.4. TEST EQUIPMENT LIST

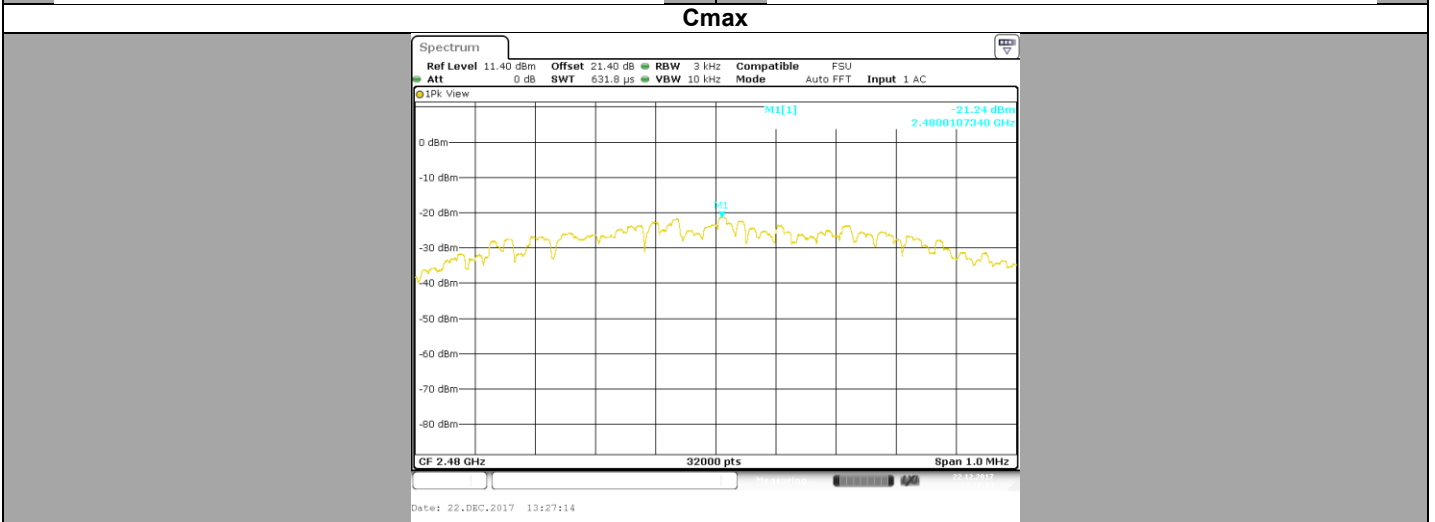
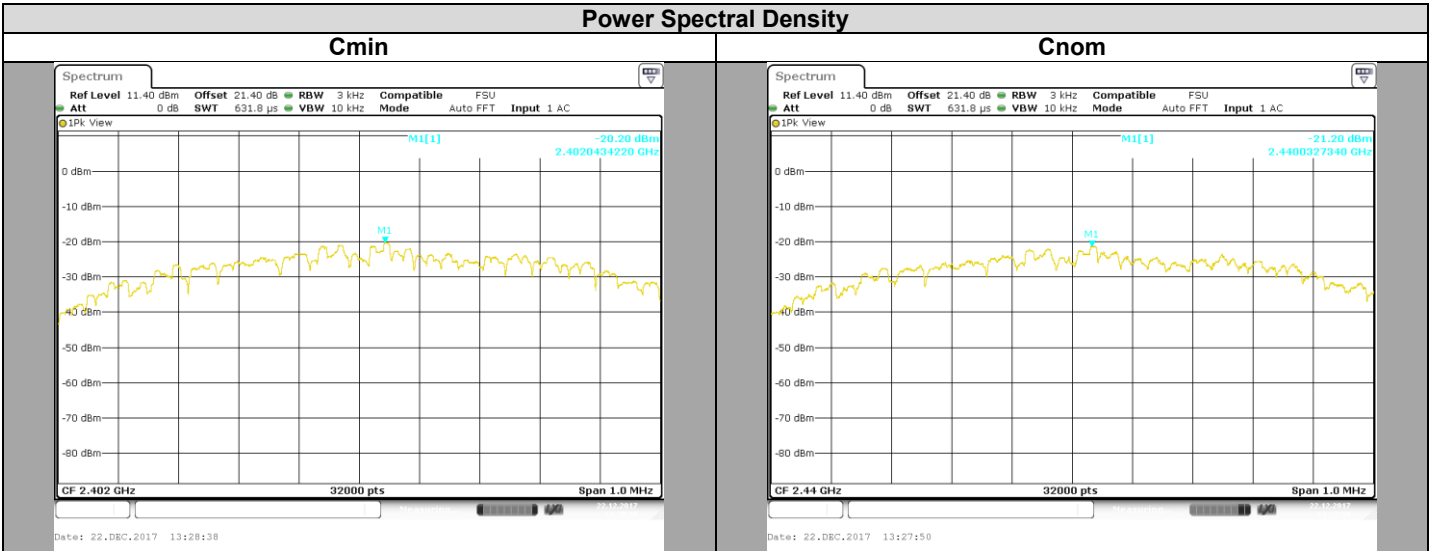
Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Cable	-	-	A5329676	2017/10	2018/10

Note: In our quality system, the test equipment calibration due is more & less 2 months



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## 7.5. RESULTS



Channel	Offset Cable + Att (dB)	Antenna Gain (dBi)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
<b>Cmin</b>	<b>21,4</b>	1,6	-20,2	8
<b>Cnom</b>	<b>21,4</b>	1,6	-21,2	8
<b>Cmax</b>	<b>21,4</b>	1,6	-21,24	8

## 7.6. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.



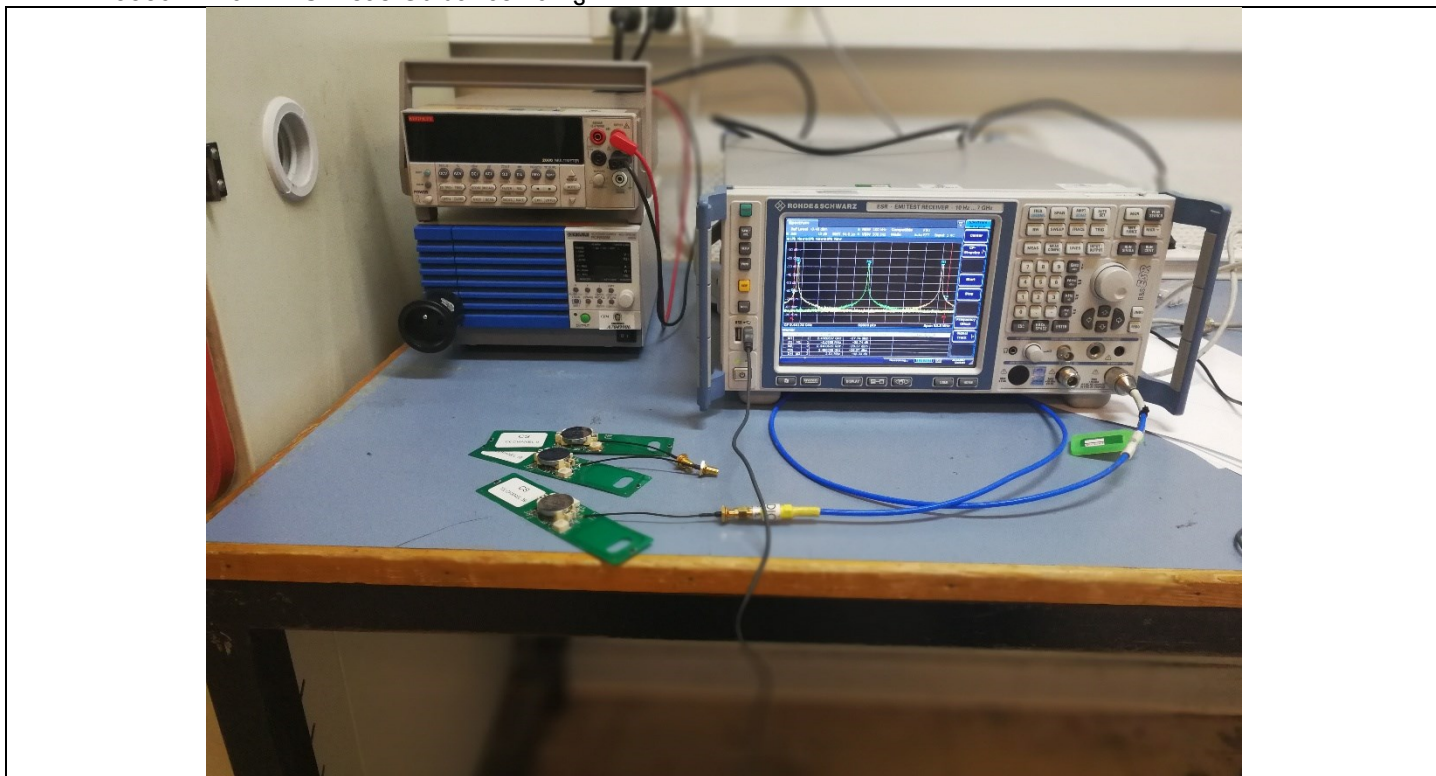
## 8. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS AT THE BAND EDGE

### 8.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 8.2. TEST SETUP

- The Equipment Under Test is installed:
  - On a table
  - In an anechoic chamber
  
- Measurement is performed with a spectrum analyzer in:
  - Conducted Method
  - Radiated Method
  
- Test Procedure:
  - KDB 558074 D01 DTS Meas Guidance v04 § 11



Photograph for Unwanted Emission into non-restricted frequency bands at the band edge



### 8.3. LIMIT

All Spurious Emissions must be at least 20dB below the Fundamental Radiator Level at the Band Edge Edge “2400MHz & 2483,5MHz”

### 8.4. TEST EQUIPMENT LIST

Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2016/09	2018/09
Cable	-	-	A5329676	2017/10	2018/10

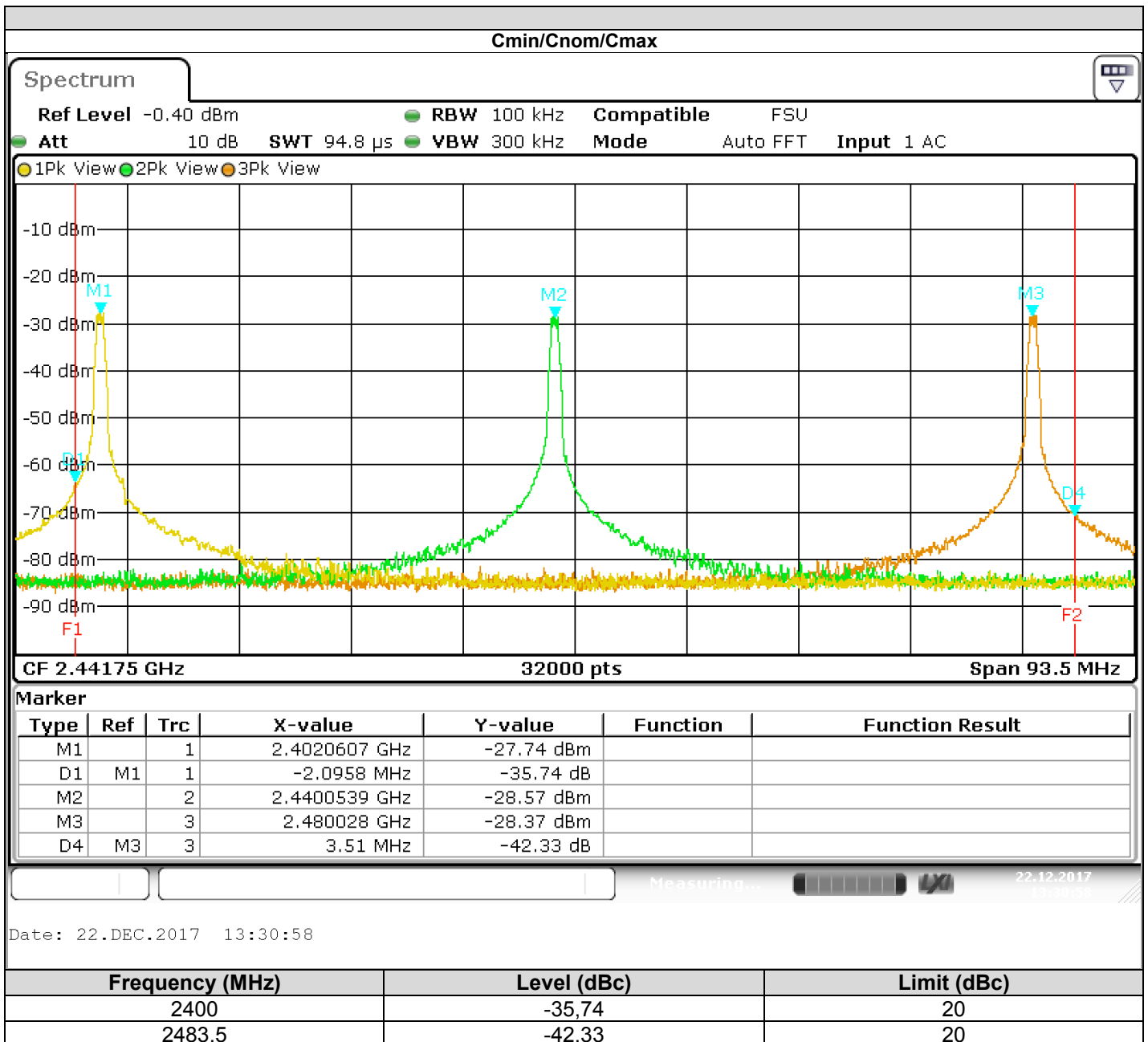
Note: In our quality system, the test equipment calibration due is more & less 2 months





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### 8.5. RESULTS



### 8.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands at the band edge measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

## 9. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS

### 9.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 20, 2017 to December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 9.2. TEST SETUP

- The Equipment Under Test is installed:

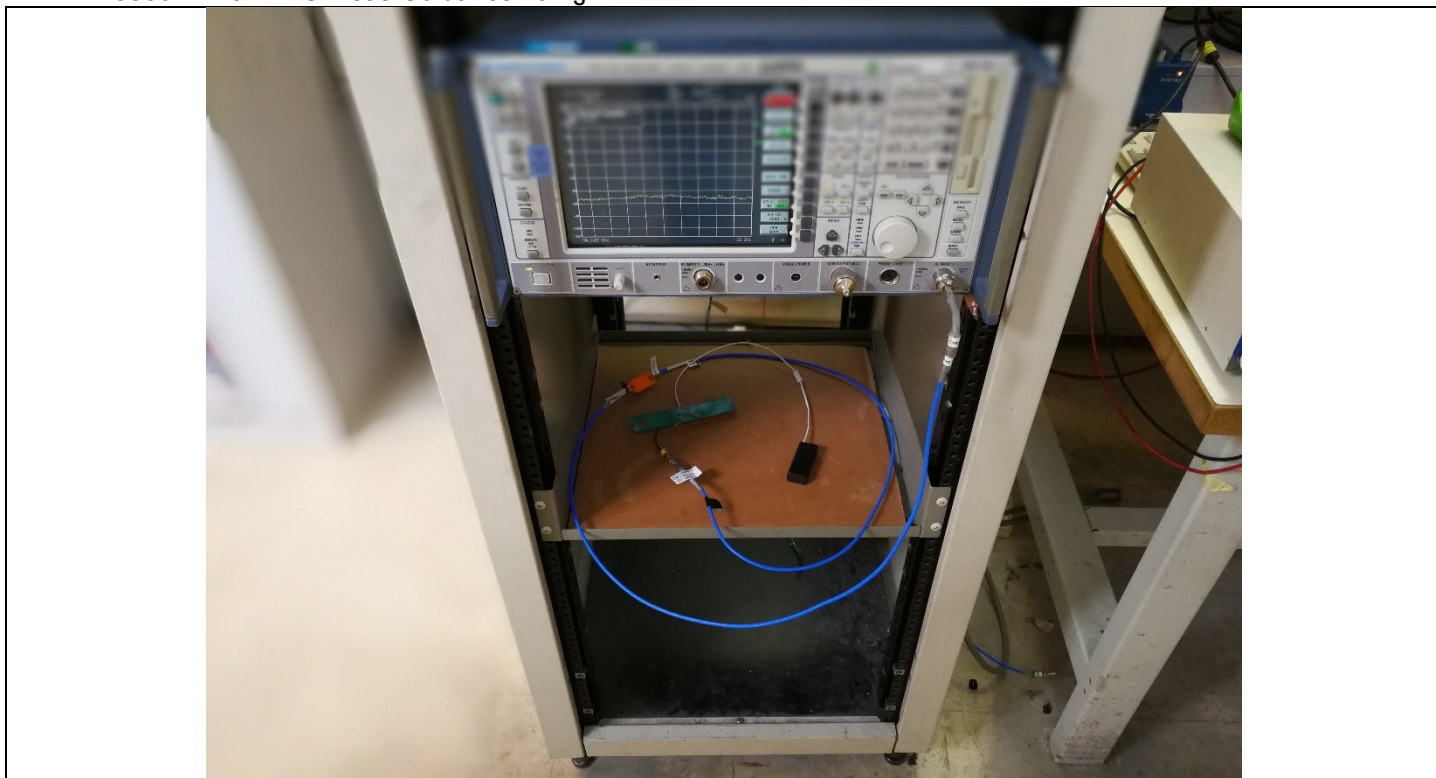
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- KDB 558074 D01 DTS Meas Guidance v04 § 11



Photograph for Unwanted Emission into non-restricted frequency bands

### 9.3. LIMIT

All Spurious Emissions must be at least 20 below the Fundamental Radiator Level



#### 9.4. TEST EQUIPMENT LIST

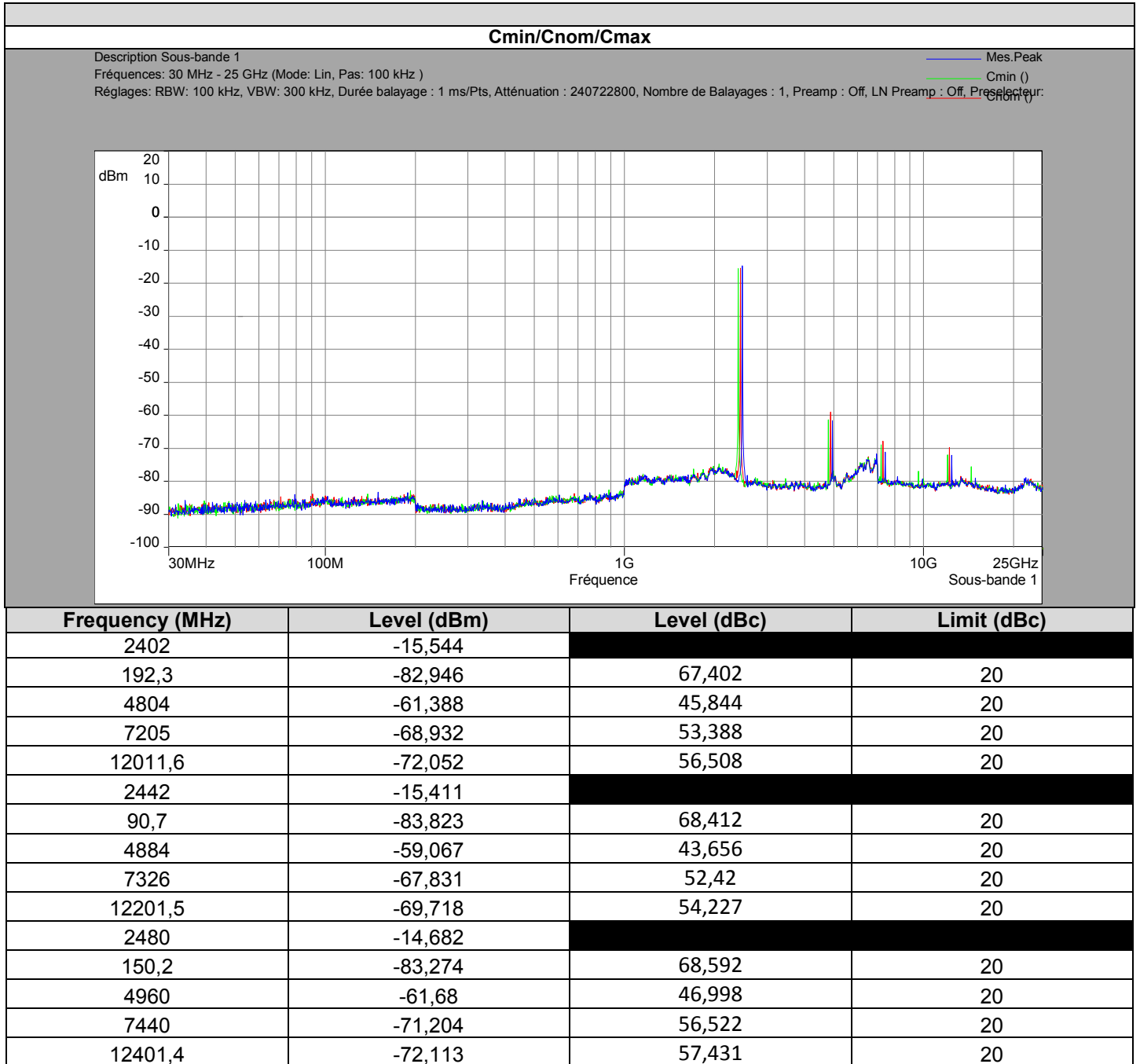
Description	Constructor	Model	N°	Cal. Date	Cal. Due
EMI receiver	ROHDE & SCHWARZ	ESI40 1088 740K40	A2642010	2016/07	2018/07
Cable	-	-	A5329758	2017/11	2018/11
Filtre	-	-	A7484068	2017/03	2018/03

Note: In our quality system, the test equipment calibration due is more & less 2 months



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## 9.5. RESULTS



## 9.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 2** limits.

## 10. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

### 10.1. TEST CONDITIONS

Test performed by : Mathieu CERISIER  
Date of test : December 20, 2017 to December 22, 2017  
Ambient temperature : 23 °C  
Relative humidity : 41 %

### 10.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013). The EUT is placed **ina semi-anechoic chamber**. Distance between measuring antenna and the EUT is **3m**. Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz. Measurement bandwidth was 200Hz below 150kHz and 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height was 1m.

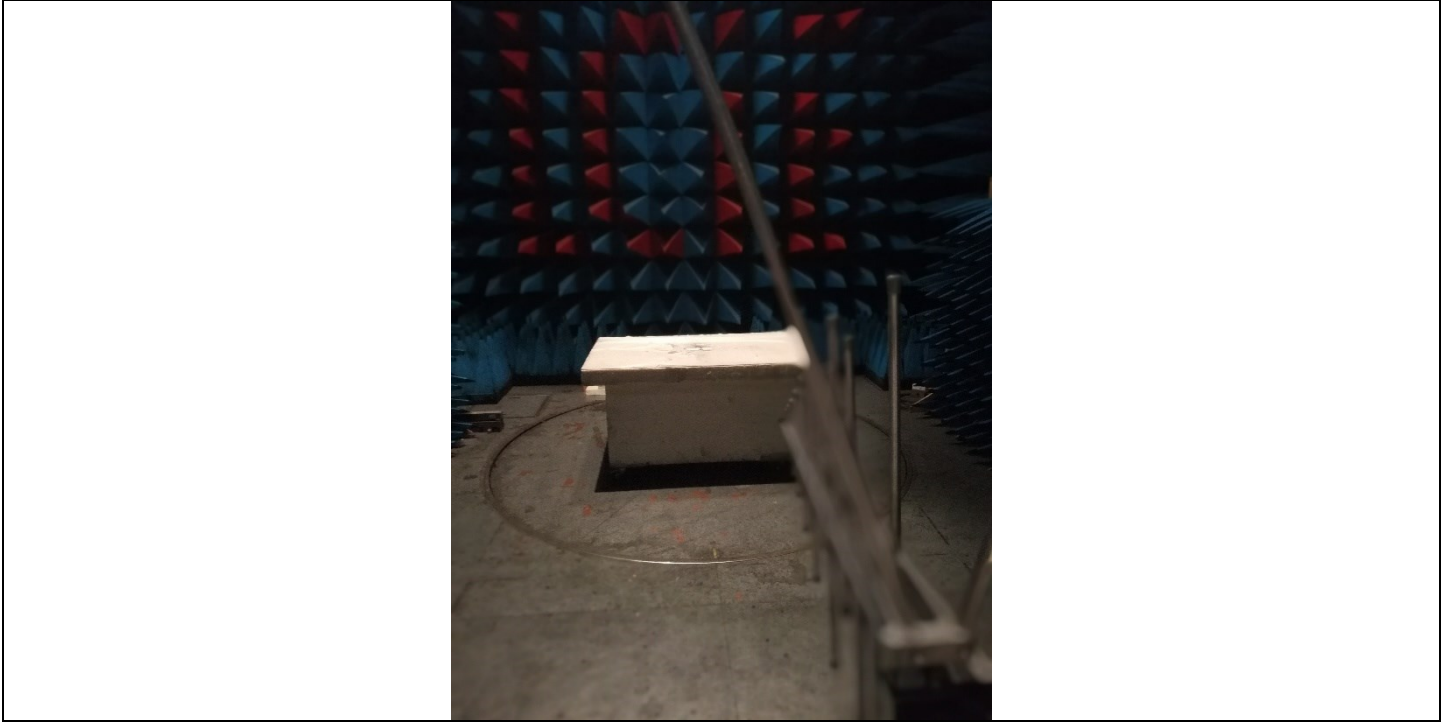
Test is performed in horizontal (H) and vertical (V) polarization with **bilog** antenna below 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height search was performed from 1 to 4m. The EUT is place at 1.5m high above 1GHz and at 0.8m high under 1GHz.



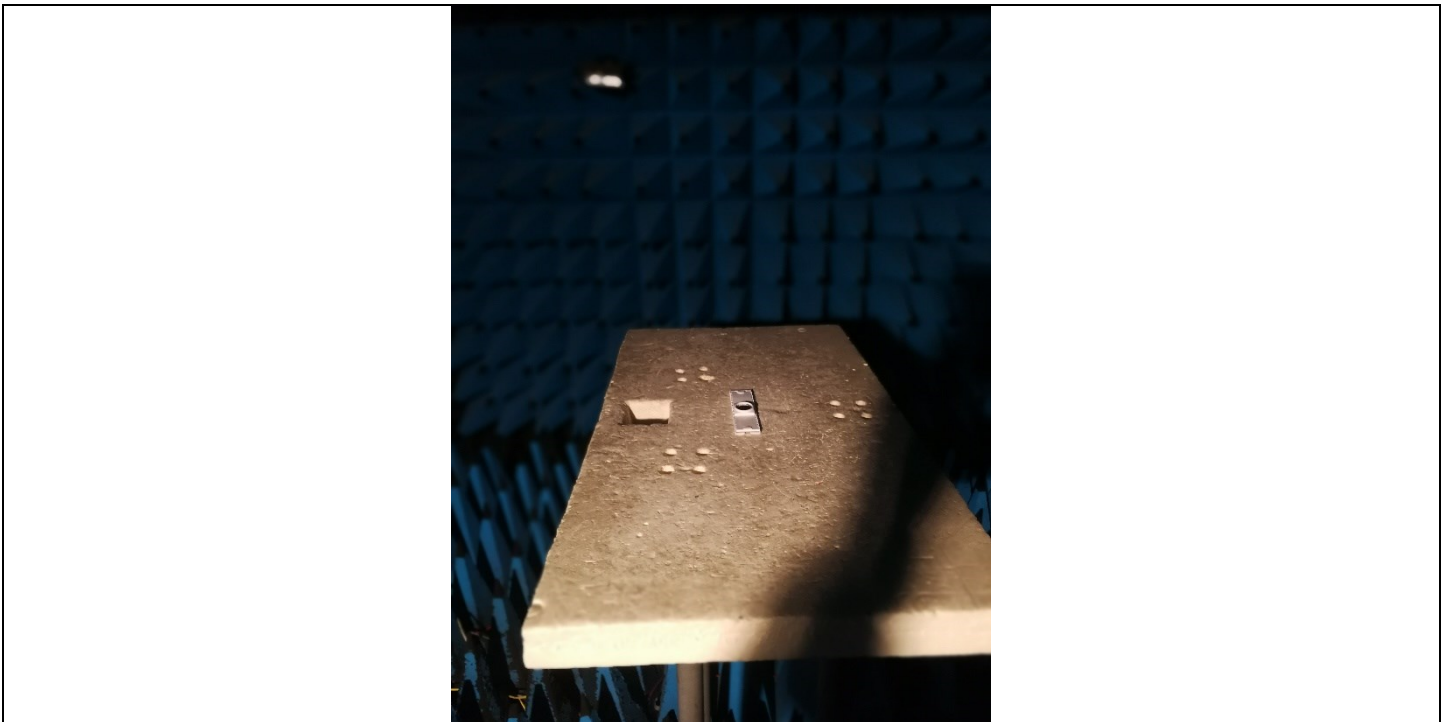
Photograph for Unwanted Emission in restricted frequency bands



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Photograph for Unwanted Emission in restricted frequency bands

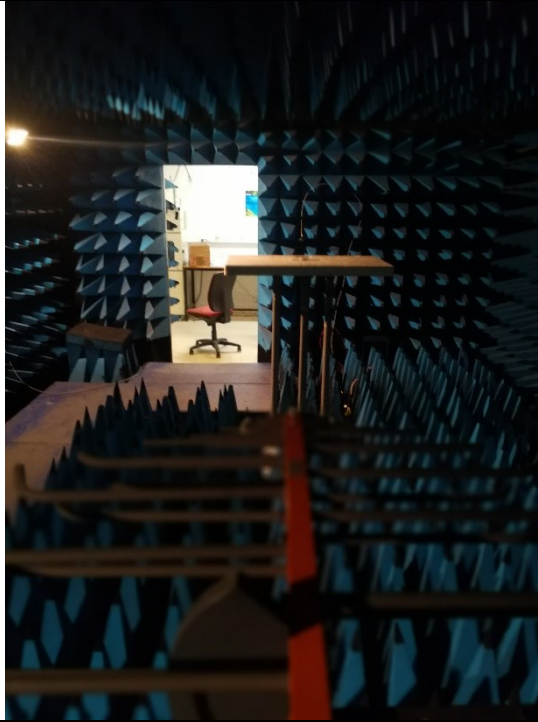


Photograph for Unwanted Emission in restricted frequency bands

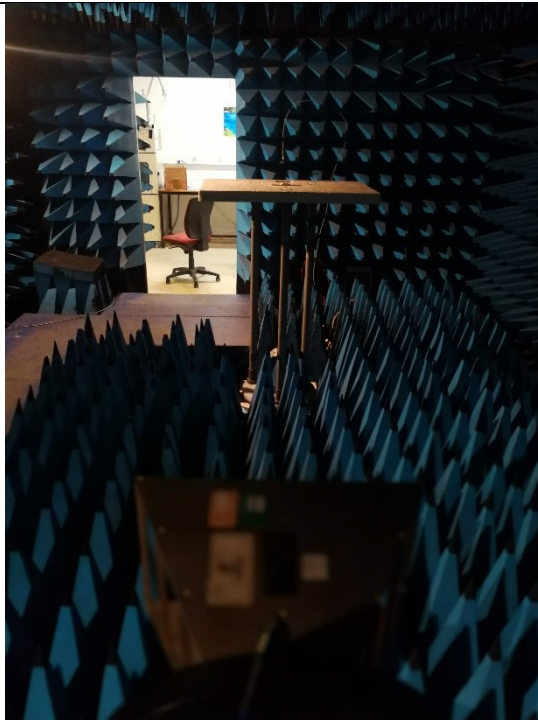




L C I E



Photograph for Unwanted Emission in restricted frequency bands



Photograph for Unwanted Emission in restricted frequency bands

### 10.3. LIMIT

#### Limit at 3m:

9kHz to 0,490MHz:	2400/F(kHz) $\mu$ V/m (300m) or 20log(2400/F(kHz))dB $\mu$ V/m (3m) QPeak
0,490MHz to 1.705MHz:	240000/F(kHz) $\mu$ V/m (30m) or 20log(240000/F(kHz))dB $\mu$ V/m (3m) QPeak
1.705MHz to 30MHz:	30 $\mu$ V/m (30m) or dB $\mu$ V/m (3m) QPeak
30MHz to 88MHz:	40dB $\mu$ V/m QPeak
88MHz to 216MHz:	43,5dB $\mu$ V/m QPeak
216MHz to 960MHz:	46dB $\mu$ V/m QPeak
960MHz to 1000MHz:	54dB $\mu$ V/m QPeak
Above 1000MHz:	74dB $\mu$ V/m Peak 54dB $\mu$ V/m Average

#### Limit at 10m:

30MHz to 88MHz:	29.5dB $\mu$ V/m QPeak
88MHz to 216MHz:	33dB $\mu$ V/m QPeak
216MHz to 960MHz:	35.5dB $\mu$ V/m QPeak
960MHz to 1000MHz:	43.5dB $\mu$ V/m QPeak
Above 1000MHz:	63.5B $\mu$ V/m Peak 43.5B $\mu$ V/m Average

### 10.4. TEST EQUIPMENT LIST

Description	Constructor	Model	N°	Cal. Date	Cal. Due
Semi anechoic chamber	SIEPEL	-	D3044008	2017/06	2018/06
EMI receiver	ROHDE & SCHWARZ	ESU26	A2642018	2016/10	2018/10
Bilog antenna	SCHWARZBECK	VULB 9160	C2040150	2017/03	2018/03
RF cable	RADIALL; CDI	30990-7M	A5329711	2017/03	2018/03
Cable	CABLES & CONNECTIQUES	3.5MD/CSU528AA/3.5MC/4000	A5329436	2017/03	2018/03
Full anechoic chamber	SIEPEL	-	D3044019	2014/10	2018/10
Preamplifier	LCIE; LCIE	LCIE-ALB-001	A7080073	2016/08	2018/08
Horn antenna	AH SYSTEMS	SAS 571	C2042041	2017/04	2018/04
Substitution horn antenna 18-26,5GHz	PASTERNAK	PE9852/2F-20	C2042049	2017/05	2019/05
Logperiodic antenna	AMPLIFIER RESEARCH	ATR80M6G	C2040149	2017/06	2018/06
EMI receiver	ROHDE & SCHWARZ	ESI40 1088 740K40	A2642010	2017/07	2018/07
cable	Télédyne	084-0505-1MTR	A5329757	2017/03	2018/03
cable	Télédyne	084-0555-3MTR	A5329760	2017/03	2018/03
cable	Télédyne	084-555-1.5MTR	A5329759	2017/03	2018/03
loop antenna	RHODE & SCHWARZ	HFH2-Z2	C2040007	2017-12	2020-12

Note: In our quality system, the test equipment calibration due is more & less 2 months

### 10.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None       Divergence:

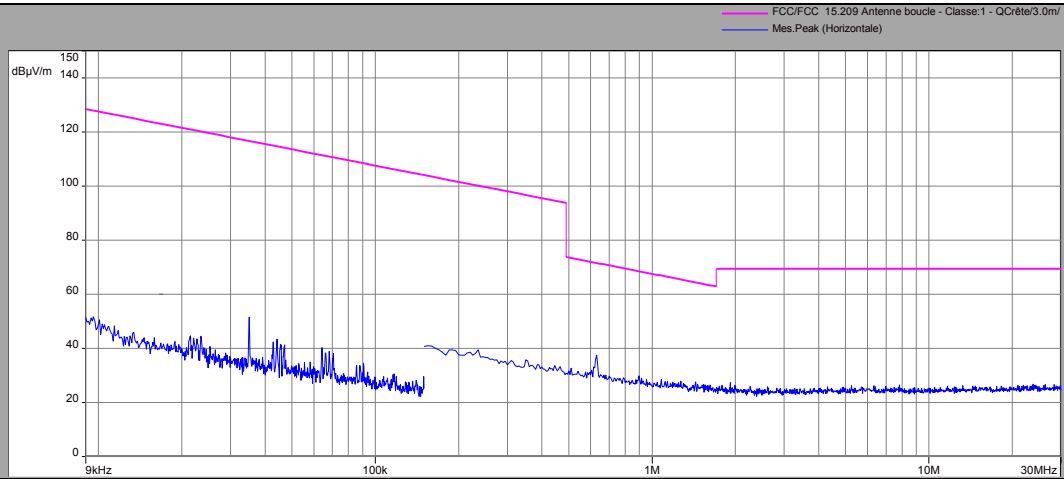


**10.6. RESULTS**

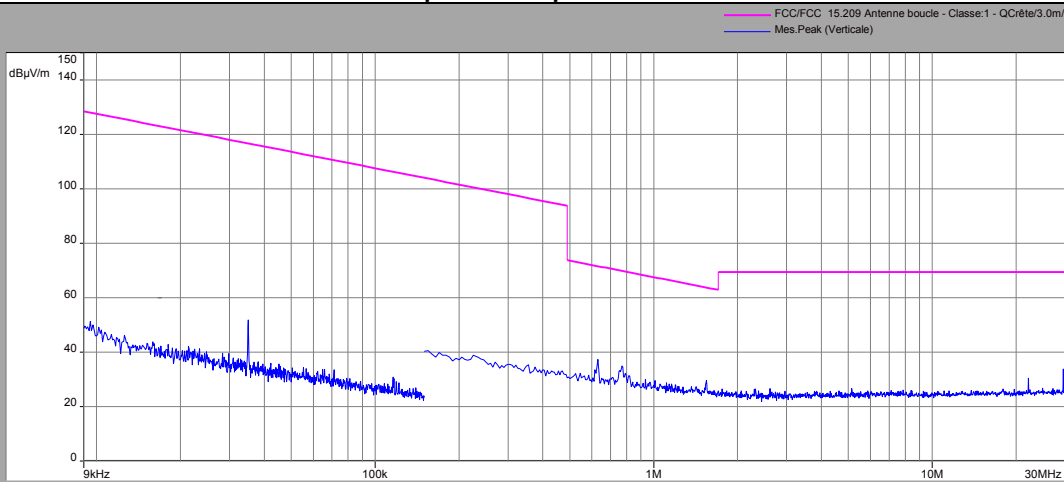
**9kHz – 30 MHz**

**Cmin**

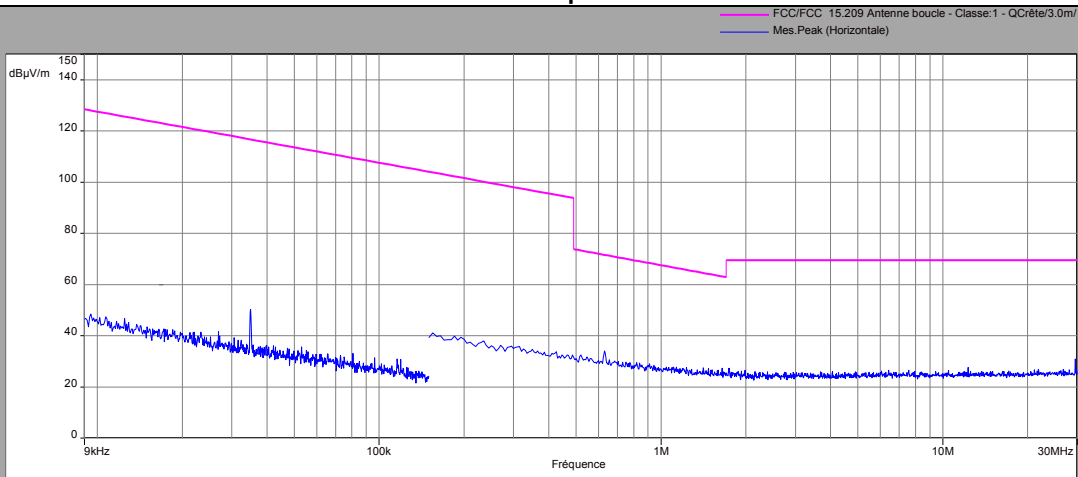
**Parallel Polarization**



**Perpendicular polarization**



**Ground Parallel polarization**





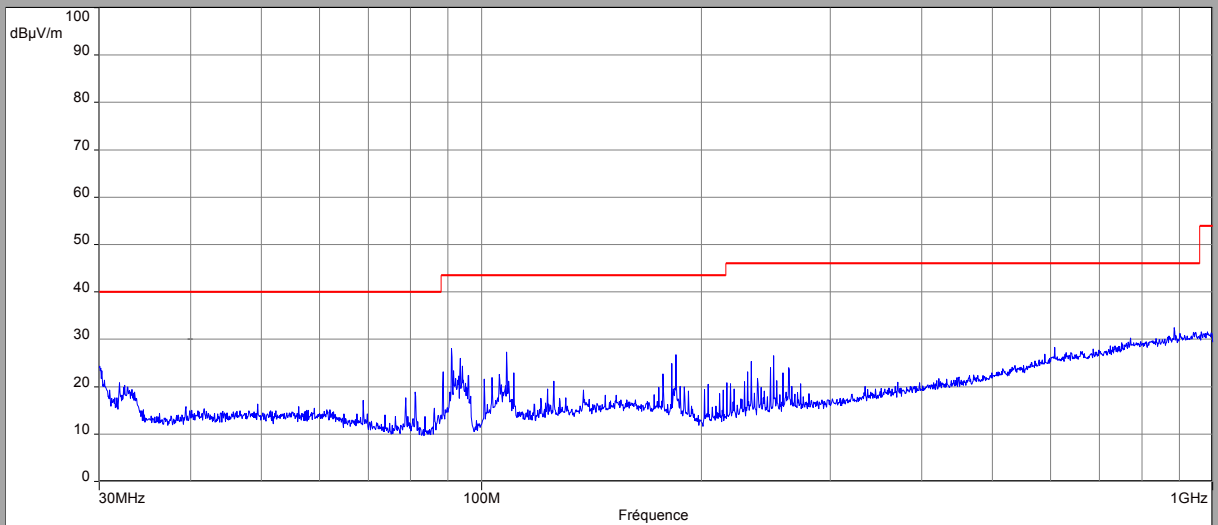
L C I E

### 30MHz – 1GHz

Cmin

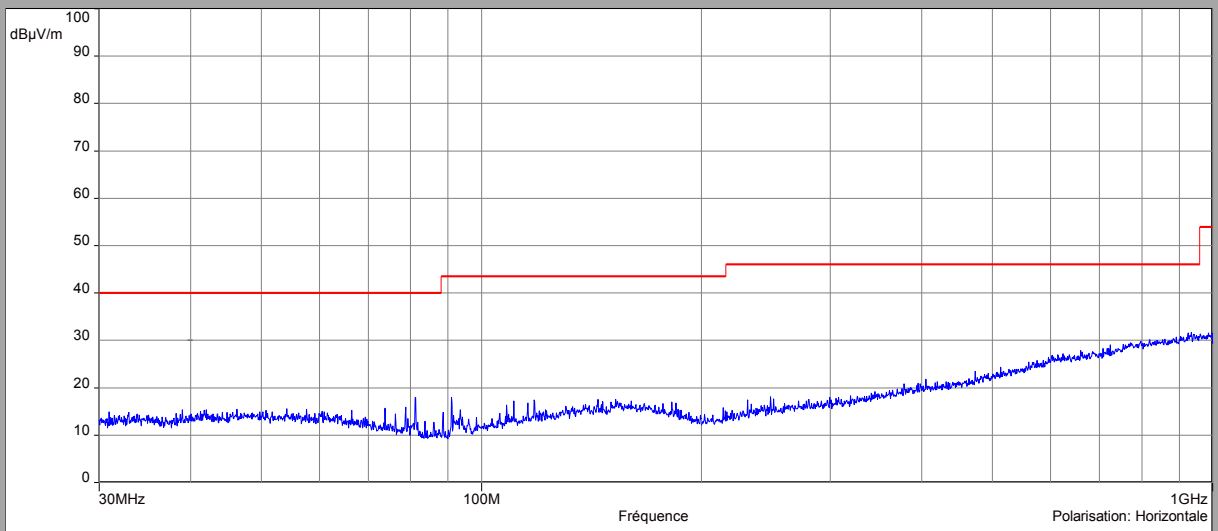
### Vertical Polarization

- FCC/FCC 15.209 >30M - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 >30M - Classe:1 - QCrête/3.0m/
- FCC/FCC 15.209 >30M - Classe:1 - Crête/3.0m/
- Mes.Peak (Verticale)



### Horizontal polarization

- FCC/FCC 15.209 >30M - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 >30M - Classe:1 - QCrête/3.0m/
- FCC/FCC 15.209 >30M - Classe:1 - Crête/3.0m/
- Mes.Peak (Horizontale)





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### Above 1GHz

### Cmin/Cnom/Cmax

### Vertical Polarization

Description Sous-bande 3

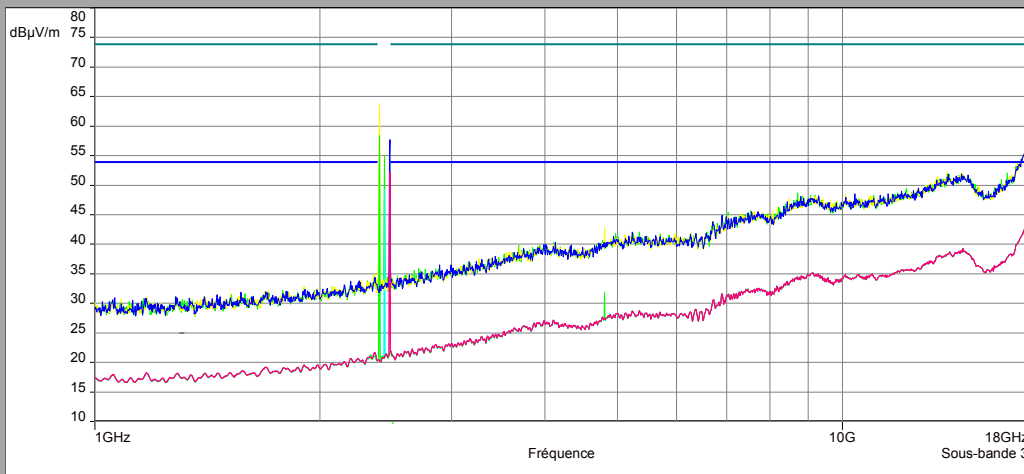
Fréquences: 1 GHz - 18 GHz (Mode: Lin, Pas: 500 kHz)

Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 10 ms/Pts, Atténuation : 194408840, Nombre de Balayages: 1, Résolution: 80 dB, CNR: 30 dB, QF: 5 select

Polarisation: Verticale

Distance: 3 m

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - QCrête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- Cmin Avg (Verticale)
- Cmin Peak (Verticale)
- Cnom Avg (Verticale)
- Cnom Peak (Verticale)



No interference has been observed between 18GHz and 26GHz

### Horizontal polarization

Description Sous-bande 1

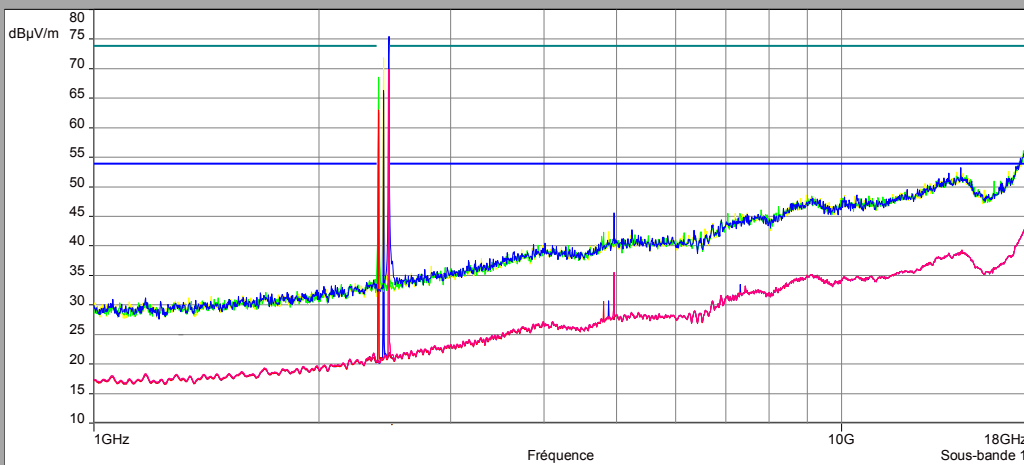
Fréquences: 1 GHz - 18 GHz (Mode: Lin, Pas: 500 kHz)

Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 10 ms/Pts, Atténuation : 194408520, Nombre de Balayages: 1, Résolution: 80 dB, CNR: 30 dB, QF: 5 select

Polarisation: Horizontale

Distance: 3 m

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - QCrête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- Cmin Avg (Horizontale)
- Cmin Peak (Horizontale)
- Cnom Avg (Horizontale)
- Cnom Peak (Horizontale)



No interference has been observed between 18GHz and 26GHz



L C I E

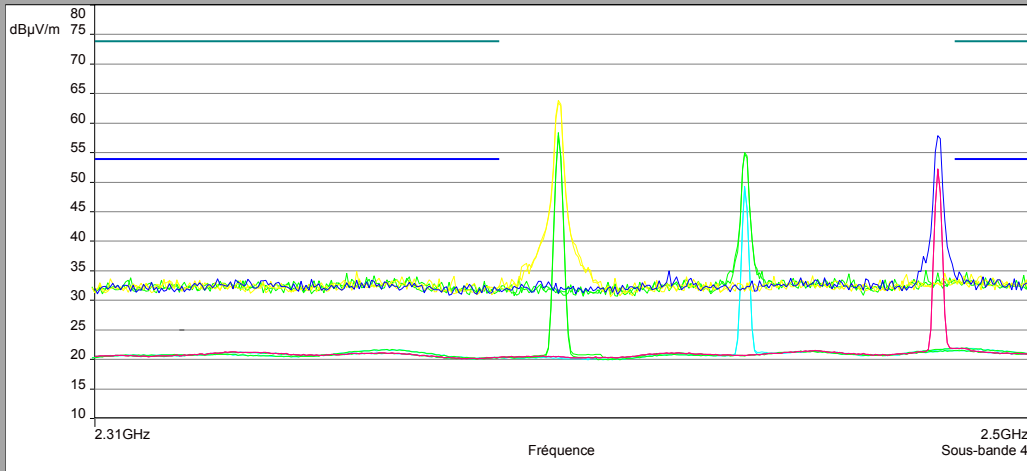
### Above 1GHz Zoom 2310MHz-2500MHz

#### Cmin/Cnom/Cmax

#### Vertical Polarization

Description Sous-bande 4  
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)  
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 10 ms/Pts, Atténuation : 201273800, Nombre de Points: 2000, Résolution: 200 Hz, Classe: 1, QCRéte: 3.0m/  
Polarisation: Verticale  
Distance: 3 m

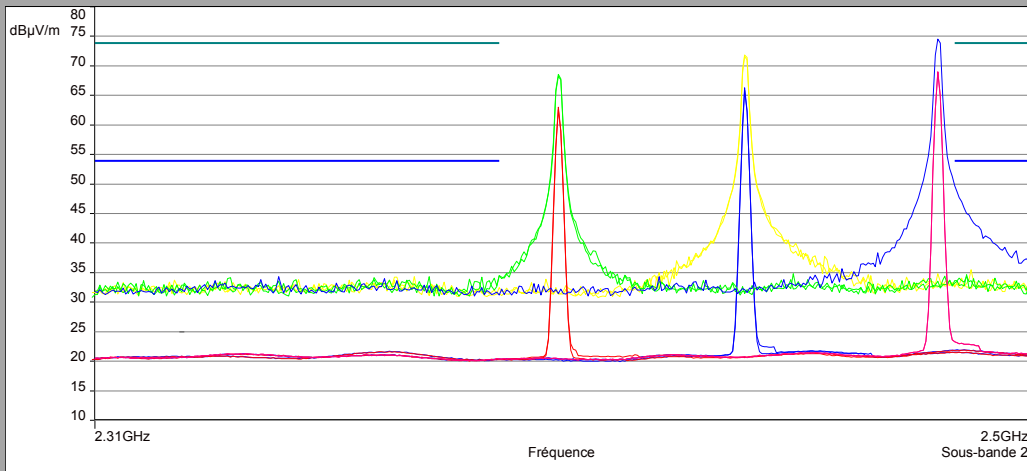
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - QCRéte/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- Cmin Avg (Verticale)
- Cmin Peak (Verticale)
- Cnom Avg (Verticale)
- Cnom Peak (Verticale)



#### Horizontal polarization

Description Sous-bande 2  
Fréquences: 2.31 GHz - 2.5 GHz (Mode: Lin, Pas: 500 kHz)  
Réglages: RBW: 1 MHz, VBW: Auto, Durée balayage : 10 ms/Pts, Atténuation : 201273800, Nombre de Points: 2000, Résolution: 200 Hz, Classe: 1, QCRéte: 3.0m/  
Polarisation: Horizontale  
Distance: 3 m

- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - Moyenne/3.0m/
- FCC/FCC 15.209 2400MHz-2483MHz Band - Classe:1 - QCRéte/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- Cmin Avg (Horizontale)
- Cmin Peak (Horizontale)
- Cnom Avg (Horizontale)
- Cnom Peak (Horizontale)





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9kHz – 30 MHz					
Polarization	Frequency (MHz)	Peak Level (dBµV/m)	QPeak Level (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)
all emissions were greater than 20 dB below the limit					

30MHz - 1GHz					
Polarization	Frequency (MHz)	Peak Level (dBµV/m)	QPeak Level (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)
Verticale	91,05	28,036	-	43,5	15,464
Verticale	108,3	27,352	-	43,5	16,148
Verticale	886,4	32,455	-	46	13,545
Horizontale	81,25	17,944	-	40	22,056
Horizontale	91,05	17,961	-	43,5	25,539
Horizontale	724,88	29,053	-	46	16,947

Above 1GHz								
Cmin/Cnom/Cmax								
Polarization	Frequency (MHz)	Duty cycle correction (dB)	Average Level (dBµV/m)	Average Limit (dBµV/m)	Average Margin (dBµV/m)	Peak Level (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dBµV/m)
Verticale	1292	2,15	20,145	54	33,855	32,983	74	41,017
Verticale	1905	2,15	21,626	54	32,374	35,033	74	38,967
Horizontale	1174	2,15	20,493	54	33,507	31,983	74	42,017
Verticale	2390	2,15	22,515	54	31,485	34,628	74	39,372
Horizontale	2390	2,15	22,424	54	31,576	36,634	74	37,366
Verticale	2483.5	2,15	24,034	54	29,966	36,451	74	37,549
Horizontale	2483.5	2,15	25,436	54	28,564	51,894	74	22,106
Horizontale	4960	2,15	37,683	54	16,317	47,741	74	26,259
Horizontale	14431	2,15	40,967	54	13,033	55,376	74	18,624
Verticale	4804	2,15	34,048	54	19,952	44,06	74	29,94
Verticale	3263,5	2,15	25,967	54	28,033	39,755	74	34,245
Verticale	6902	2,15	33,713	54	20,287	46,493	74	27,507

## 10.7. CONCLUSION

Unwanted Emission in restricted frequency bands measurement performed on the sample of the product **bluebeep Car Seat Guardian**, SN: **CS00001**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 & RSS 247 ISSUE 2 limits.

## 11. UNCERTAINTIES CHART

47 CFR Part 15.209 & 15.207 Kind of test	Wide uncertainty laboratory (k=2) ±x(dB) / (Hz)/ ms	Uncertainty limit
Measurement of conducted disturbances in voltage on the AC power port (9 kHz – 150 kHz)	2,67	3.8
Measurement of conducted disturbances in voltage on the AC power port (150 kHz – 30 MHz)	2,67	3.4
Measurement of conducted disturbances in voltage on the telecommunication port. (AAN)	3,67	5.0
Measurement of conducted disturbances in current (current clamp)	2,73	2.9
Measurement of disturbance power	2,67	4.5
Measurement of radiated magnetic field from 10kHz to 30MHz in SAC V01	4,48	/
Measurement of radiated magnetic field from 10kHz to 30MHz in SAC C01	4,48	/
Measurement of radiated electric field from 30 to 1000MHz in horizontal position on the OATS (Ecuellas)	4,88	6.3
Measurement of radiated electric field from 1 to 18GHz on the Ecuellas site	5.16	/
Measurement of radiated electric field from 30 to 1000MHz in vertical position on the OATS (Ecuellas)	4,99	6.3
Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC C01	5,08	6.3
Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC C01	5,16	6.3
Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC V01	5,08	6.3
Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC V01	5,15	6.3
Measurement of radiated electric field from 1 to 6 GHz C01	5,1	5.2
Measurement of radiated electric field from 1 to 6 GHz V01	4,85	5.2
Measurement of radiated magnetic field from 10kHz to 30MHz on the OATS (Ecuellas)	4,48	/

The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the CISPR. The conformity of the sample is directly established by the applicable limits values. This table includes all uncertainties maximum feasible for testing in the laboratory, whether or not made in this report