Matériel testé : *Equipment under test*:	**iSetWatch**

Constructeur:
Manufacturer:
TX-CUBE
75 Avenue de la Chataigneraie
92500 Rueil-Malmaison - France

Rapport délivré à :
Issued to:
TX-CUBE (M. Vincent Baumier)
75 Avenue de la Chataigneraie
92500 Rueil-Malmaison - France

Marque commerciale :
Trade Mark :
iSet

Référence de la proposition :
Proposal number:
122014-21245

Date de l'essai :
Date of test:
February 23rd to 27th, 2015.

Objectif des essais :
Test purpose:
EMC qualification accordingly to following standards:
- CFR 47, FCC Part 15, Subpart C *(Chapter 15.247 - Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz)*
- Industry Canada RSS-210, Issue 8 *(Annex 8 - Frequency Hopping and Digital Modulation Systems Operating in the Bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz)*

FCC ID:
IC:
2AD98ISETW
12756A-ISETW

Lieu du test:
Test location:
SMEE CE-Mesures
38 VOIRON - France

Test réalisé par :
Test realized by:
Jérémy BLANCHER

Conclusion :
Conclusion:
L'équipement satisfait aux prescriptions des normes citées en référence.
The appliance complies with requirements of above mentioned standards.

Ed.	Date	Modifications / Pages	Written by:	Approved by: Visa
1	March 2sd, 2015	Initial Edition	Jeremy Blancher	Laurent Chapus

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1. Références Normatives / Normative references

Standard : FCC CFR 47, PART 15, Subpart C
ANSI C63.4 (2009): American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

Industry Canada RSS-GEN (Issue 4/2014) - General Requirements and Information for the Certification of Radio Apparatus
Industry Canada RSS-210 (Issue 8/2010) - Low-power Licence-exempt Radiocommunication Devices

Guidance for performing compliance measurements on Digital Transmission Systems (DTS) operating under 15.247. (55074 D01 DTS Meas Guidance v01)

2. Synthèse des essais / *Test synthesis*

TEST	Paragraph number (FCC Part 15.247) / IC RSS-210	Spec. (FCC Part 15.247) / IC RSS-210	RESULTS (comments)
Conducted emissions test	15.107 / 15.207 (a) RSS-Gen: 2010 § 7.2.2.	Table 15.207 (a)	N/A (1)
6dB Bandwidth	15.247 (a) (2) RSS-210: 2010 § A8.2	At least 500kHz	**PASS**
Maximum Peak Output Power	15.247 (b) (3) RSS-210: 2010 § A8.4	1W max / 30dBm (Conducted) 4W max / 36dBm (EIRP)	**PASS**
Maximum Power Spectral Density	15.247 (e) RSS-210: 2010 § A8.2	8dBm in a 3kHz band segment	**PASS**
Unwanted emissions into Non Restricted Frequency Bands	15.247 (d) / RSS-210: 2010 § A8.5	-20dBc in any 100kHz outside frequency band.	**PASS**
Unwanted emissions into Restricted Frequency Bands	15.209 / 15.247 (d) / 15.205 RSS-Gen 4.10 / RSS-210: 2010 § A8.5	Measure at 300m 9-490kHz: 2400µV/m/F(kHz) Measure at 30m 0.490-1.705: 24000µV/m/F(kHz) 1.705-30MHz: 30µV/m Measure at 3m 30MHz-88MHz : 40 dBµV/m 88MHz-216MHz : 43.5 dBµV/m 216MHz-960MHz : 46.0 dBµV/m Above 960MHz : 54.0 dBµV/m	**PASS**
Occupied Bandwidwth	RSS-Gen: 2010 § 4.6	BW at 99%	**PASS**

N/A: Not Applicable
(1): Equipment fitted with a Lithium battery

- **General conclusion:**

Measures and tests performed on the sample of the product iSetWatch, in configuration and description presented in this test report, show compliance with standards FCC CFR 47, PART 15, Subpart C and Industry Canada RSS-Gen & RSS-210.

3. Equipement Sous Test (EST) / *Equipment Under Test* (EUT)

Nom / *Identification*	**iSetWatch**	Sn: N.C
Alimentation / *Power supply*	3V dc from a Lithium battery (model CR2032)	
Auxiliaires / *Auxiliaries*	None	

Entrées-Sorties / *Input / Output*

	Câbles pour essai / *Cables for test*	Blindé / *Shielded*	Prévu pour >3m / *Intended for >3m*
No cable			

Version programme / *Firmware version*	N.C
Mode de fonctionnement / *Running mode*	The tested sample is able to: - Transmit a carrier frequency on low, middle and high channels (Bluetooth Low Energy) - Be in Receiver mode (no transmission) - Be in standby mode (no transmission)
Programme de test / *Test program /*	None

- **<u>Equipment information:</u>**

- ISM Frequency band: 2400 to 2483.5 MHz (Transmit and receive, Wideband Data Transmission systems)
- Chip module: CC2540, Texas Instrument product (Bluetooth Low Energy System-on-chip)
- Antenna type: PCB antenna (Peak antenna gain = -4.4dBi)
- DTS equipment
- GFSK modulation
- Equipment intended for use as a mobile station
- Equipment designed for continuous operation
- Normal power source: 3V DC from Lithium battery

4. Conditions pendant les essais / *Test conditions*

Humidité relative / *Relative Humidity* : 55%
Température / *Temperature* : 20°C

<u>Tension d'alimentation / *Power supply voltage*</u>:
Equipment sous test / *Equipment under test* : 3V DC from Lithium battery
Tension secteur / AC mains : 110V/60Hz

5. Modifications de l'EST / *Modifications of the EUT*

None

6. 6dB Bandwidth

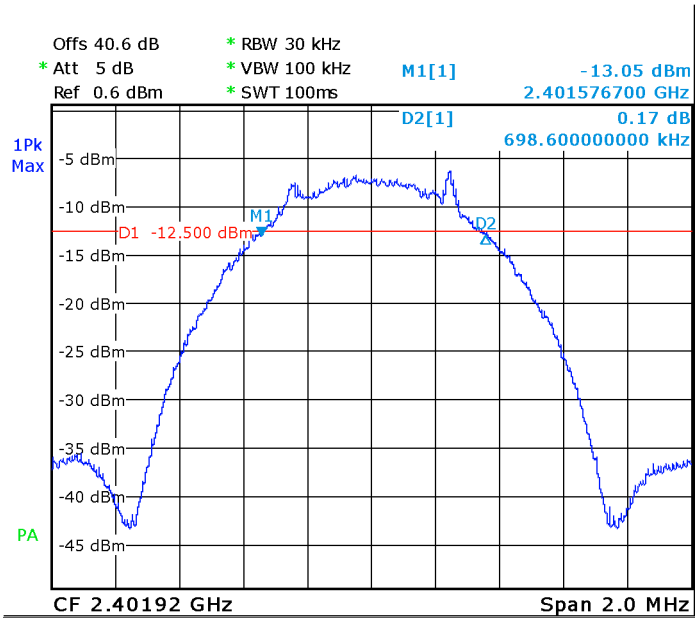
TEST: 6dB Bandwidth / FCC part 15.247 – RSS-210		**Verdict**
Method: The setup is in an anechoic chamber. The spectrum analyzer is connected to the measuring antenna. Peak value is adjusted to Radiated Maximum Peak Output Power (See §7.). RBW on spectrum analyser shall be 1-5% of the Equipment Bandwidth (EBW); RBW is adjust for RBW/EBW ration is 1-5% The tested equipment is set to transmit operation with modulations on lowest, middle and highest channel.		**Pass**
Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	20°C
Relative Humidity	10 to 90 %	55%
Limits – FCC Part 15.247 (a) / RSS-210: 2010 (A8.2)		
Frequency (MHz)	**Level for Bandwidth**	**Limit**
2402.0	6dB below the maximum output power	At least 500kHz
2440.0		
2480.0		
Supplementary information: Test location: SMEE – CE Mesures / Test date: February 24th, 2015 Power supply voltage: 3V from battery (fully charged)		

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Measuring Rec.	Rohde&Schwarz	ESL3	REC-101-001	2012/6	2015/6
Horn antenna	ETS-LINDGREN	3115	ANT-141-013	2014/3	2017/3
Anechoic chamber	COMTEST	214263	CAG-141-001	-	-
Turntable	Innco- Systems	CT0800	PLA-141-001	-	-

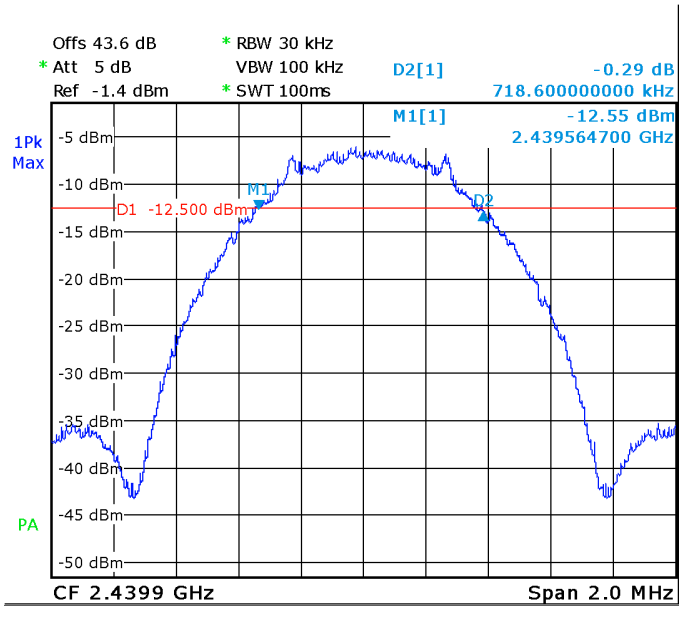
Tabulated Results for Occupied Bandwidth		
Frequency (MHz)	**6dB Bandwidth** (kHz)	**Result**
2402.0	698.6 kHz	**Pass**
2440.0	718.6 kHz	**Pass**
2480.0	715.4 kHz	**Pass**

Note: EBW is 698.6 kHz and RBW is 30 kHz (RBW/EBW ration is 4.3% in worst case)

Graphical representation of 6dB Bandwidth

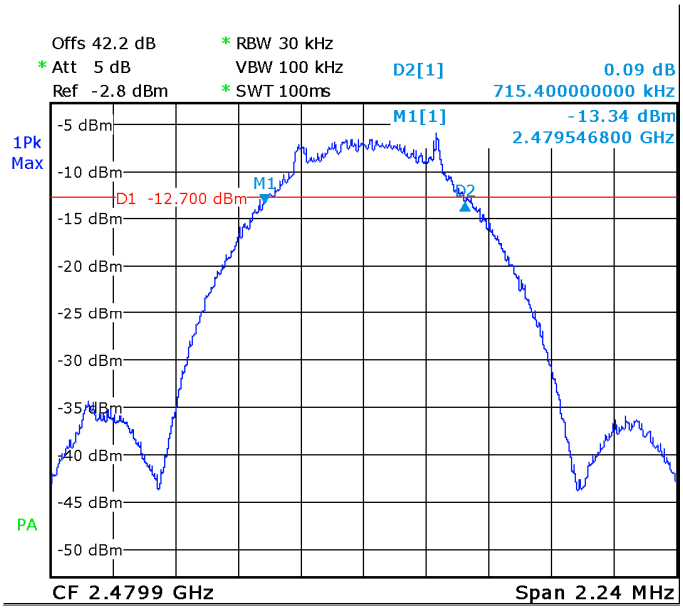


Low channel



Mid channel

Graphical representation of 6dB Bandwidth



High channel

7. Maximum Peak Output power

TEST: Maximum peak conducted output power / FCC part 15.247 – RSS-210	**Verdict**
Method: Measurements were performed with peak detector using a 1MHz RBW. The VBW is set to 3MHz. The spectrum analyzer is connected via suitable means to the RF output of the tested equipment. (Conducted measurement). For field strength, the measure is performed on a 3m Open Area Test Site. The tested equipment is set to transmit operation with modulations on lowest, middle and highest channel.	**Pass**

Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	20°C
Relative Humidity	10 to 90 %	55%

Limits – FCC Part 15.247 (b) / RSS-210: 2010 (A8.2)

Frequency (MHz)	Limits	
	Level / Detector	Results
2400 to 2483.5	30 dBm / Pk (Conducted)	**Pass**
2400 to 2483.5	36 dBm / Pk (Radiated/EIRP)	**Pass**

Supplementary information:
Test location: SMEE – CE Mesures / Test date: February 27th, 2015
Power supply voltage: 3V from battery (fully charged)

Test Equipment Used

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Measuring Rec.	Rohde&Schwarz	ESL3	REC-101-001	2012/6	2015/6
Horn antenna	ETS-LINDGREN	3115	ANT-141-013	2014/3	2017/3
RF cable	Div	OATS/25m	CAB-101-017	2014/3	2015/3
OATS	Div	3 / 10m	SIT-101-001	2014/5	2015/5
Antenna mast	Innco- Systems	MA4000EP	MAT-101-001	-	-
Turntable	Innco- Systems	DS1200S	PLA-101-001	-	-

Tabulated Results for Maximum peak output power (Conducted measurement)

FREQ	**Peak Power conducted**	**Limit**	**Result**
(MHz)	(dBm)	(dBm)	
2402	**1.0**	30.0	**Pass**
2441	**1.1**	30.0	**Pass**
2480	**0.6**	30.0	**Pass**

RBW:	1MHz
Measurement distance:	Conducted measurement
Limit:	FCC Part 15.247 (b) / RSS-210: 2010 (A8.2)
Final measurement detector:	Peak
RESULT:	PASS

Tabulated Results for Maximum peak output power (Radiated measurement)				
FREQ	**Field Strength 3m**	**Calculated EIRP**	**Limit**	**Result**
(MHz)	(dBµV/m)	(dBm)	(dBm)	
2402	91.4	**-3.9**	36.0	**Pass**
2441	91.8	**-3.5**	36.0	**Pass**
2480	91.5	**-3.8**	36.0	**Pass**

RBW:	1MHz
Measurement distance:	3m
Limit:	FCC Part 15.247 (b) / RSS-210: 2010 (A.8.2)
Final measurement detector:	Peak
Wide Measurement Uncertainty:	± 5.2dB (k=2)
RESULT:	PASS
Note:	(1): Field strength is measured on the Open Area Test Site at a distance of 3m. Three orthogonal axis measurements are performed for both horizontal and vertical antenna (measure) polarization in order to obtain the maximum peak field strength. The power (EIRP) was calculated using the following equation: **EIRP = (E x d)²/30** Where D is the distance in meters from which the field strength was measured E is the maximum field strength in V/m (2): Maximum antenna gain is -4.4dBi.

8. Maximum Power Spectral Density

TEST: Power Spectral Density / FCC part 15.247 – RSS-210	**Verdict**
Method: Measurements were performed with peak detector using a 100kHz RBW. The VBW is set to 300kHz The spectrum analyzer is connected to the measuring antenna. The spectrum analyzer is connected via suitable means to the RF output of the tested equipment. (Conducted measurement. The observed power is scaled to an equivalent value in 3kHz. The tested equipment is set to transmit operation with modulations on lowest, middle and highest channel.	**Pass**

Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	20°C
Relative Humidity	10 to 90 %	55%

Limits – FCC Part 15.247 (e) / RSS-210: 2010 (A8.4)		
Frequency (MHz)	Limits	
	PSD	Results
2402	8 dBm (in any 3kHz)	**Pass**
2440	8 dBm (in any 3kHz)	**Pass**
2480	8 dBm (in any 3kHz)	**Pass**

Supplementary information:
Test location: SMEE – CE Mesures / Test date: February 24th, 2015
Power supply voltage: 3V from battery (fully charged)

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Measuring Rec.	Rohde&Schwarz	ESL3	REC-101-001	2012/6	2015/6

Tabulated Results for Maximum Power Spectral Density				
FREQ	**Peak Power (100kHz RBW)**	**Calculated PSD**	**Limit**	**Result**
(MHz)	(dBm)	(dBm/3kHz)	(dBm)	
2402	0.2	**-15.0**	8.0	**Pass**
2441	0.8	**-14.4**	8.0	**Pass**
2480	0.5	**-14.7**	8.0	**Pass**

RBW:	100kHz
Limit:	FCC Part 15.247 (e) / RSS-210: 2010 (A8.4)
Final measurement detector:	Peak
RESULT:	PASS
Note:	The Power Spectral Density (PSD) was calculated using the following equation: **$PSD_{3kHz} = P_{100kHz} + BWCF$** Where PSD_{3kHz} is the Power Spectral Density in a 3kHz band segment P_{100kHz} is the maximum power level with a 100kHz RBW, in dBm BWCF is the bandwidth correction factor, with: BWCF = 10log(3 kHz/100 kHz) = -15.2dB

9. Unwanted emissions in Non-Restricted Frequency bands

TEST: Unwanted emissions in Non-Restricted Frequency Bands / FCC part 15.247 – RSS-210	**Verdict**
Method: Measurements were made in a 3-meter Open Area Test Site (OATS) that complies to CISPR 16. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements (Peak, Quasi-peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. A pre-scan frequency identification of the EUT has been performed in full anechoic chamber. The measured radiated field of the EUT is realised at 3-meters of distance. Antenna is 1.25-meters high. The pre-characterization graphs are obtained in PEAK detection.	**Pass**

Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	20°C
Relative Humidity	10 to 90 %	55%
Fully configured sample scanned over the following frequency range	Frequency range on each side of line	Measurement Point
	30MHz – 25GHz	3 m measurement distance

Limits – FCC Part 15.247 (d) / RSS-210: 2010 (A8.5)

Frequency (MHz)	Limits (dBµV/m)		
	Detector / Analyser RBW	Limit	Results
30 to 25000	Pk / 100kHz	20dB below the maximum Peak level	**Pass**

Supplementary information:
Test location: SMEE – CE Mesures / Test date: February 25th, 2015
Power supply voltage: 3V from battery (fully charged)

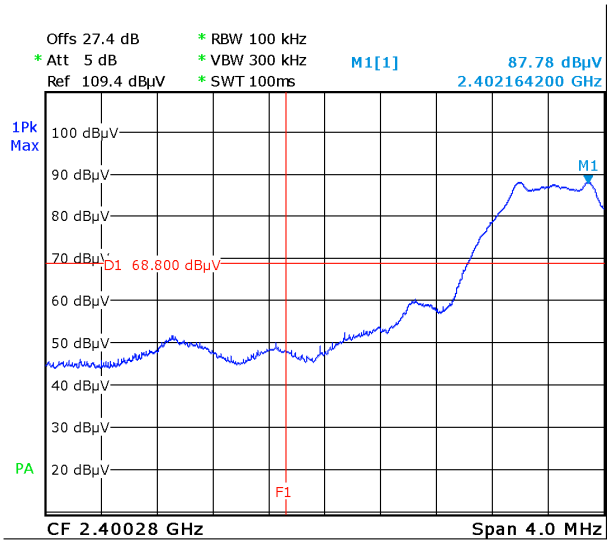
Test Equipment Used

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Log-periodic antenna	TDK	PLP3003	ANT-101-001	2014/5	2015/5
Biconnic antenna	COM-POWER	AB- 900	ANT-101-003	2014/5	2015/5
BiConiLog antenna	EMCO	3142B	ANT-101-010	2014/11	2015/11
Horn antenna	ETS-LINDGREN	3115	ANT-141-013	2014/3	2017/3
RF cable	Div	2m	CAB-101-011	2014/3	2015/3
RF cable	Div	OATS/25m	CAB-101-019	2014/3	2015/3
RF cable	Div	OATS/10m	CAB-101-020	2014/3	2015/3
Anechoic chamber	COMTEST	214263	CAG-141-001	-	-
OATS	Div	10m	SIT-101-001	2014/5	2015/5
Antenna mast	Innco- Systems	MA4000EP	MAT-101-001	-	-
Turntable	Innco- Systems	DS1200S	PLA-101-001	-	-
Turntable	Innco- Systems	CT0800	PLA-141-001	-	-
Measuring Rec	Rohde&Schwarz	ESL3	REC-101-001	2012/6	2015/6

Tabulated Results for Peak Output Power Reference level	
FREQ	**Field Strength 3m**
(MHz)	(dBµV/m)
2402.0	87,8
2440.0	88,2
2480.0	87,6
RBW:	100kHz
Measurement distance:	3m
Limit:	Ref. level only – For 15.247 (d) / RSS-210: 2010 (A8.5)
Final measurement detector:	Peak
Wide Measurement Uncertainty:	± 5.2dB (k=2)
Note:	Only for identification of limit in non-restricted band Limit is **68.2 dBµV/m** Peak for out-of-band frequencies in Non-Restricted bands (with a 100kHz RBW on the spectrum analyser)

Tabulated Results for Unwanted emissions in Non-Restricted bands			
FREQ	**Field Strength 3m**	**Limit**	**Result**
(MHz)	(dBµV/m)	(dBµV/m)	(dBµV/m)
2400.0	**61.3**	68.2	**Pass**
All others frequencies are at least 20dB below applicable limit			
RBW:	100kHz		
Measurement distance:	3m		
Limit:	15.247 (d) / RSS-210: 2010 (A8.5)		
Final measurement detector:	Peak		
Wide Measurement Uncertainty:	± 5.2dB (k=2)		
RESULT:	PASS		

Graphical representation of Band-edge compliance



Low bandedge compliance

F1 = 2400MHz
Peak level at 2400MHz is 61.3dBµV/m (limit is 68.2dBµV/m)
RESULT: PASS
Note: Radiated measurement

10. Unwanted emissions in Restricted Frequency bands

TEST: Unwanted emissions into Restricted Frequency Bands / FCC part 15.205, 15.209, 15.247 – RSS-GEN, RSS-210	**Verdict**
Method: Measurements were made in a 3-meter Open Area Test Site (OATS) that complies to CISPR 16. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10 or 3 meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements (Peak, Quasi-peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. A pre-scan frequency identification of the EUT has been performed in full anechoic chamber. The measured radiated field of the EUT is realised at 3-meters of distance. Antenna is 1.25-meters high. The pre-characterization graphs are obtained in PEAK detection.	**Pass**

Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	20°C
Relative Humidity	10 to 90 %	55%
Fully configured sample scanned over the following frequency range	Frequency range on each side of line	Measurement Point
	9kHz – 30MHz	10 m measurement distance
	30MHz – 25GHz	3 m measurement distance

Limits – FCC Part 15.205, 15.209, 15.247 / RSS-GEN, RSS-210

Frequency (MHz)	Limits (dBµV/m)	
	Level / Detector / Distance	Results
0.009 to 0.490	107.6 to 72.9 / QP / 10m	**Pass**
0.490 to 1.705	52.9 to 42.1 / QP / 10m	**Pass**
1.705 to 30	48.6 / QP / 10m	**Pass**
30 to 88	40.0 / QP / 3m	**Pass**
88 to 216	43.5 / QP / 3m	**Pass**
216 to 960	46.0 / QP / 3m	**Pass**
Above 960	54.0 / QP / 3m	**Pass**

Supplementary information:
Test location: SMEE – CE Mesures / Test date: February 25th, 2015
Power supply voltage: 3V from battery (fully charged)

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Log-periodic antenna	TDK	PLP3003	ANT-101-001	2014/5	2015/5
Biconnic antenna	COM-POWER	AB- 900	ANT-101-003	2014/5	2015/5
BiConiLog antenna	EMCO	3142B	ANT-101-010	2014/11	2015/11
Horn antenna	ETS-LINDGREN	3115	ANT-141-013	2014/3	2017/3
RF cable	Div	2m	CAB-101-011	2014/3	2015/3
RF cable	Div	OATS/25m	CAB-101-019	2014/3	2015/3
RF cable	Div	OATS/10m	CAB-101-020	2014/3	2015/3
Anechoic chamber	COMTEST	214263	CAG-141-001	-	-
OATS	Div	10m	SIT-101-001	2014/5	2015/5
Antenna mast	Innco- Systems	MA4000EP	MAT-101-001	-	-
Turntable	Innco- Systems	DS1200S	PLA-101-001	-	-
Turntable	Innco- Systems	CT0800	PLA-141-001	-	-
Measuring Rec	Rohde&Schwarz	ESL3	REC-101-001	2012/6	2015/6
Spectrum analyzer	AGILENT HP	8563E	ASP-111-003	2013/9	2016/9

Tabulated Results for Unwanted emissions (9kHz-30MHz)						
FREQ	**RF field @ 30m**	**Limit @ 30m**	**Margin**	**Antenna angle**	**Table angle**	**Correc. Fact. (CF)**
MHz	(QP) dBµV/m	(QP) dBµV/m	dB	Degree	Degree	dB
No frequency observed						

Supplementary information:
Frequency list measured on the Open Area Test Site has been created with pre-scan results.

Frequency band investigated:	9kHz-30MHz
RBW:	200Hz (9kHz-150kHz)
	9kHz (150kHz-30MHz)
Measurement distance:	10m
Limit:	FCC Part 15.205 - 15.209 / RSS-GEN: 2010
Final measurement detector:	Quasi-Peak
Wide Measurement Uncertainty:	± 5 dB (k=2)
Note:	CF: Correction factor = Antenna factor + Cable loss *[1]: Measure have been done at 10m distance and corrected according to requirements of 15.209.e) (M@30m = M@10m-19.1dB)

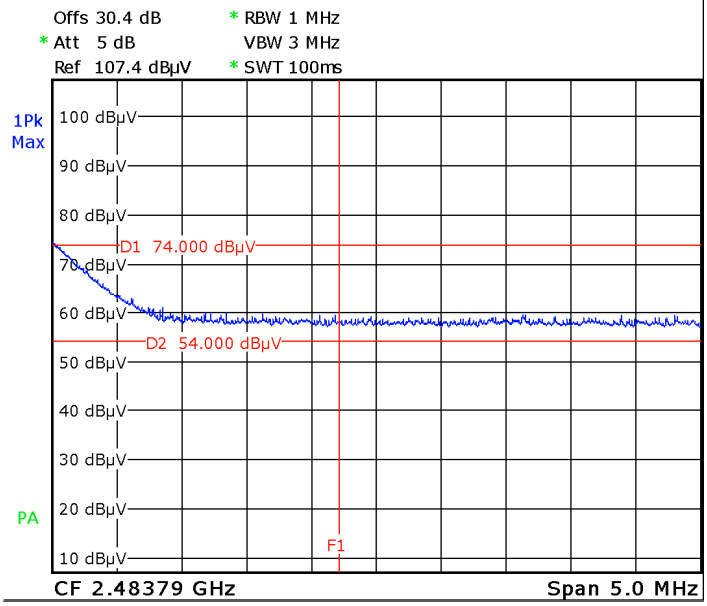
Tabulated Results for Unwanted emissions (30MHz-1GHz)										
FREQ	**Meter reading**	**Meter reading**	**CF total**	**Field level**	**Field level**	**Pol**	**Antenna height**	**Table angle**	**Limit**	**Margin**
MHz	(QP) dBµV	(Pk) dBµV	dB	(QP) dBµV/m	(Pk) dBµV/m		cm	Degree	(QP) dBµV/m	dB
No frequency observed										

Supplementary information:
Frequency list measured on the Open Area Test Site has been created with pre-scan results.

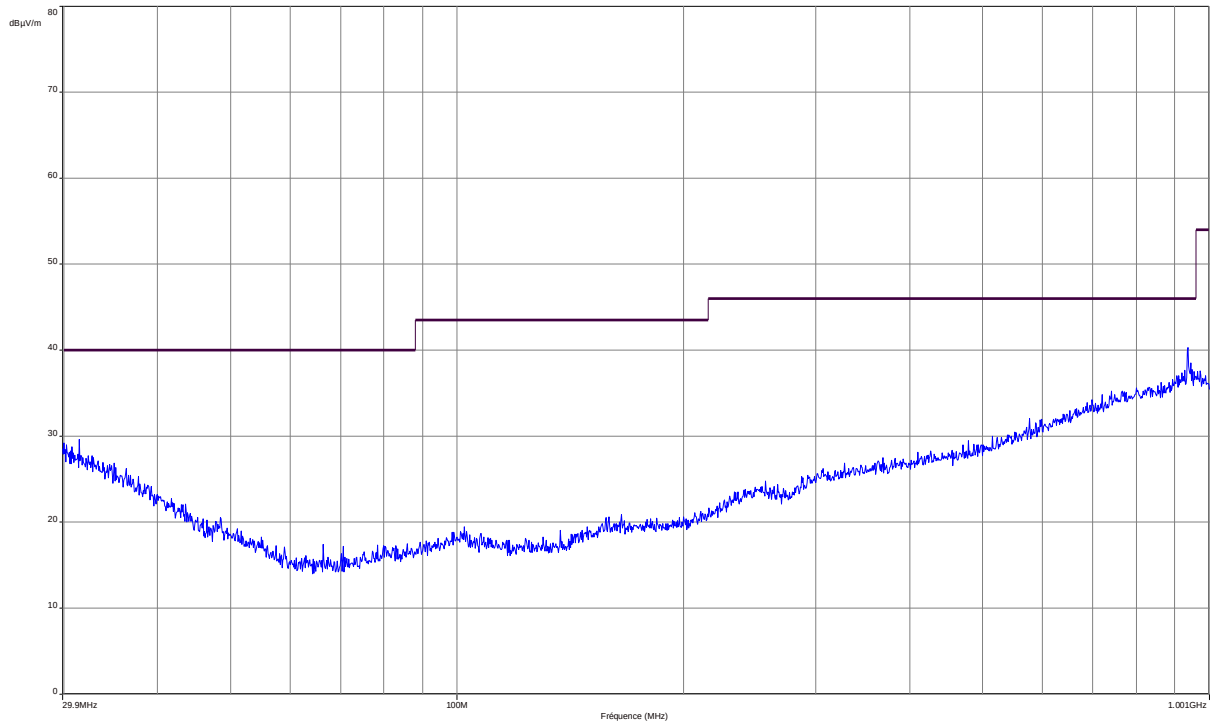
Frequency band investigated:	30MHz-1GHz
RBW:	120kHz
Measurement distance:	3m
Limit:	FCC Part 15.205 - 15.209 / RSS-GEN: 2010
Final measurement detector:	Quasi-Peak
Wide Measurement Uncertainty:	± 5.2dB (k=2)
RESULT:	PASS

Tabulated Results for Unwanted emissions (1GHz-25GHz)				
FREQ	**Field level**	**Detector**	**Limit**	**Result**
(MHz)	dBµV/m		(dBm)	
2483.5	**61.9**	**Pk**	74	**Pass**
2483.5	**49.1**	**Av**	54	**Pass**
4804,0	**42,2**	**Pk**	74 Pk / 54 Av	**Pass**
4880,0	**40,8**	**Pk**	74 Pk / 54 Av	**Pass**
4960,0	**43,4**	**Pk**	74 Pk / 54 Av	**Pass**
All others frequencies are at least 20dB below applicable limit				

RBW:	1MHz
Measurement distance:	3m
Limit:	FCC Part 15.205 - 15.209 / RSS-GEN: 2010
Final measurement detector:	Peak / Average
Wide Measurement Uncertainty:	± 5.2dB (k=2)
RESULT:	PASS
Note:	Average measurement is performed with 1MHz RBW and 10Hz VBW. When Peak field measurement is below Average limit, the field is deemed to comply with both Peak and Average limits. In this case, only Peak radiated fields are measured. Worst case measurement for three orthogonal axis of EUT. The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow: FS = RA + AF + CF – AG Where FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Factor AG = Amplifier Gain Total factor (dB) is AF + CF – AG Margin value = Emission level – Limit value

Graphical representation of Band-edge compliance

High bandedge compliance Radiated Peak level is 61.9dBµV/m (limit 74dBµV/m) Radiated Average level is 49.1dBµV/m (limit 54dBµV/m) RESULT: PASS Note: radiated measurement

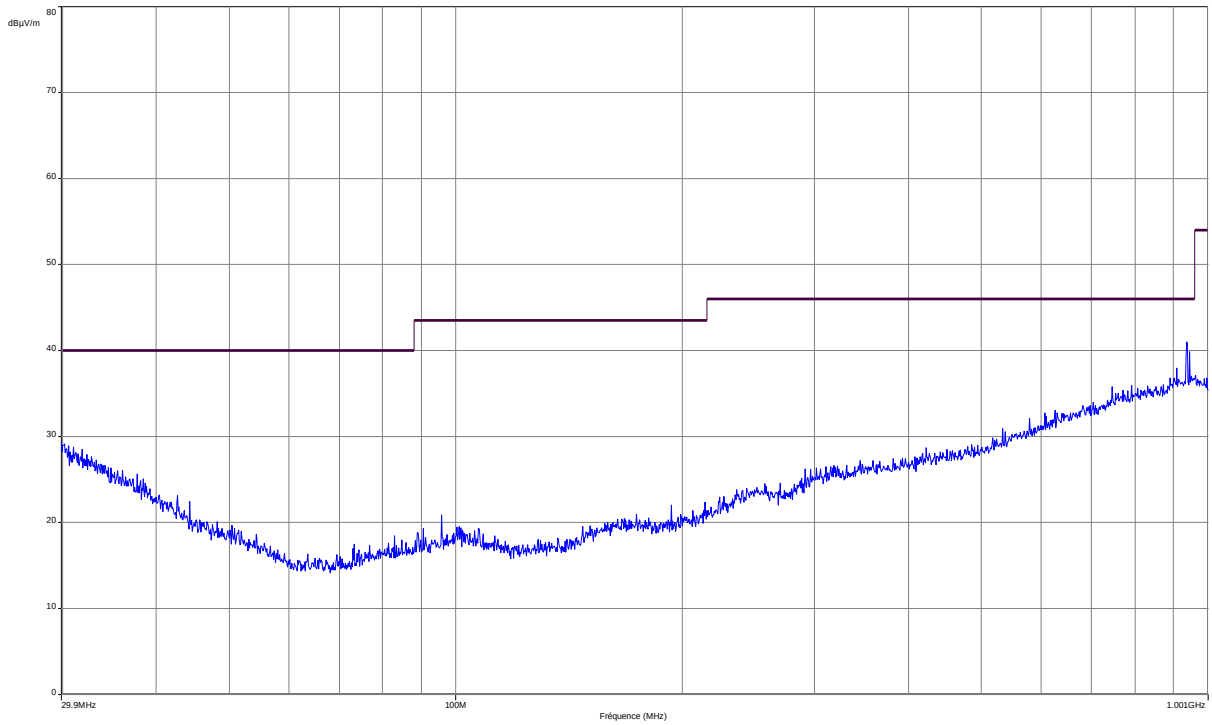
Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 30MHz-1GHz / 3m / Horizontal / Transmit mode)



Note: Pre-scan graph only for identification purpose.

Frequency band investigated:	30MHz-1GHz
Unit :	dBµV/m
RBW :	100kHz
Antenna polarization :	Horizontal
Voltage:	3V DC
Limit:	15.205 - 15.209 / RSS-GEN
Measurement detector:	Peak
Wide Measurement Uncertainty:	± 5dB (k=2)

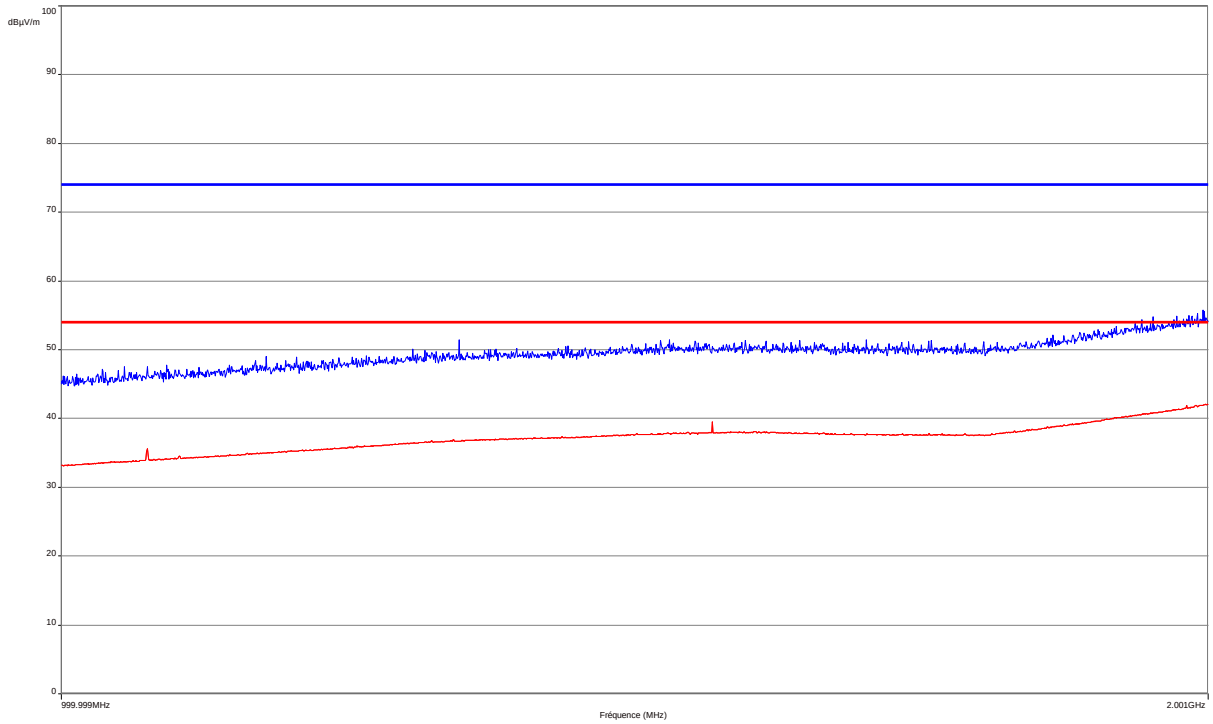
Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 30MHz-1GHz / 3m / Vertical / Transmit mode)



Note: Pre-scan graph only for identification purpose.

Frequency band investigated:	30MHz-1GHz
Unit :	dBµV/m
RBW :	100kHz
Antenna polarization :	Vertical
Voltage:	3V DC
Limit:	15.205 - 15.209 / RSS-GEN
Measurement detector:	Peak
Wide Measurement Uncertainty:	± 5dB (k=2)

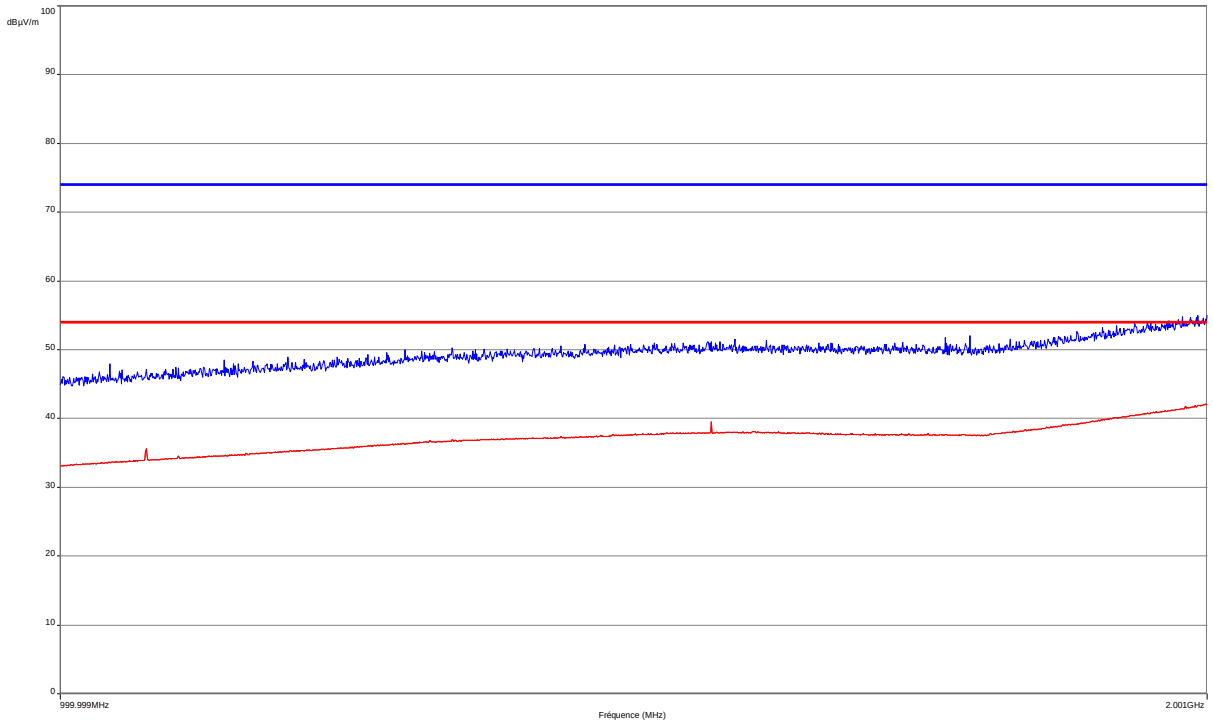
Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 1GHz-2GHz / 3m / Horizontal / Transmit mode)



Note: Pre-scan graph only for identification purpose.

------ : Peak measure	------ : Average measure
Frequency band investigated:	1GHz-2GHz
Unit :	dBµV/m
RBW :	1MHz
Antenna polarization :	Horizontal
Voltage:	3V DC
Limit:	15.205 - 15.209 / RSS-GEN
Measurement detector:	Peak
Wide Measurement Uncertainty:	± 5dB (k=2)

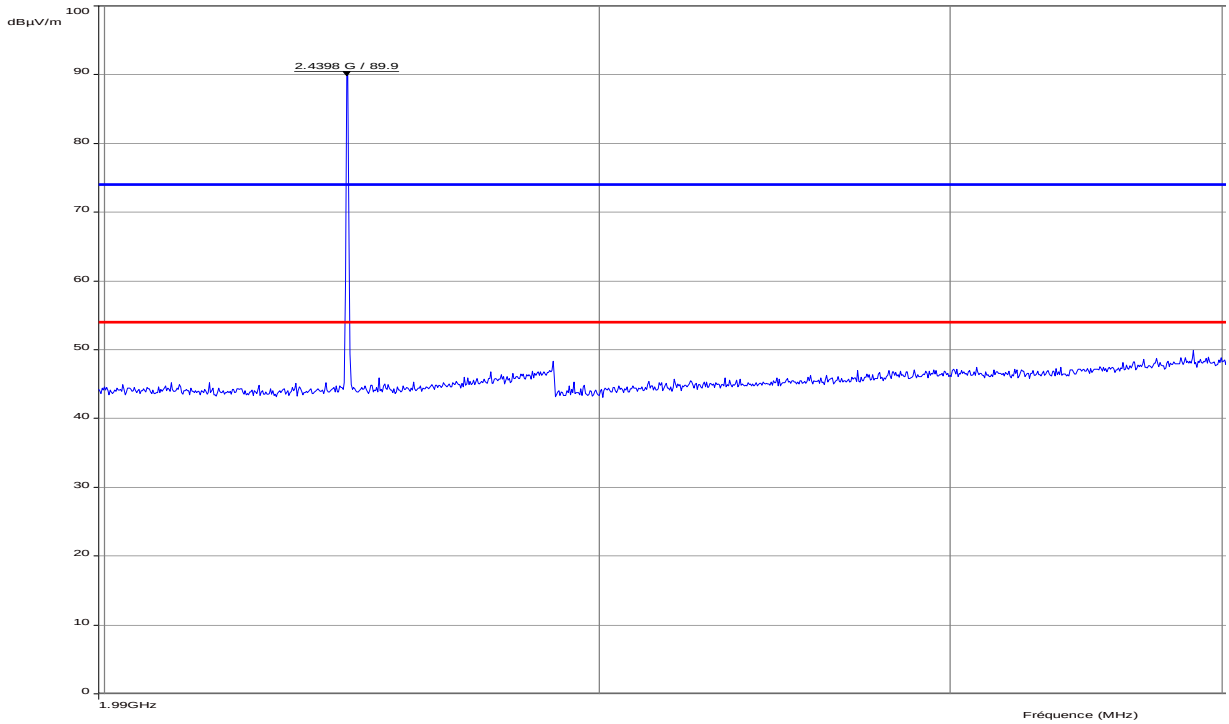
Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 1GHz-2GHz / 3m / Vertical / Transmit mode)



Note: Pre-scan graph only for identification purpose.

------ : Peak measure	------ : Average measure
Frequency band investigated:	2GHz-10GHz
Unit :	dBµV/m
RBW :	1MHz
Antenna polarization :	Vertical
Voltage:	3V DC
Limit:	15.205 - 15.209 / RSS-GEN
Measurement detector:	Peak
Wide Measurement Uncertainty:	± 5dB (k=2)

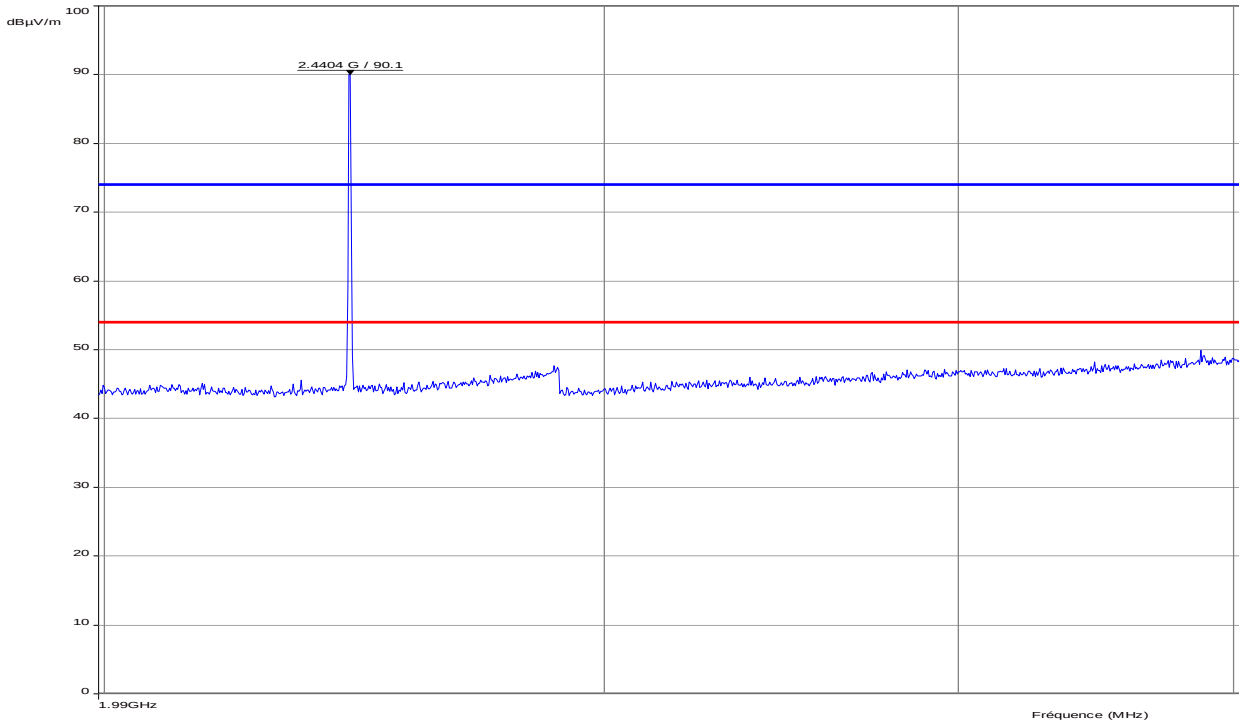
Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 1GHz-2GHz / 3m / Horizontal / Transmit mode)



Note: Pre-scan graph only for identification purpose.
No frequency observed above 5GHz

------ : Peak measure	------ : Average measure
Frequency band investigated:	2GHz-25GHz
Unit :	dBµV/m
RBW :	1MHz
Antenna polarization :	Horizontal
Voltage:	3V DC
Limit:	15.205 - 15.209 / RSS-GEN
Measurement detector:	Peak
Wide Measurement Uncertainty:	± 5dB (k=2)

Graphical representation of Radiated Disturbance Measurement (Peak detection, Anechoic chamber pre-scan, 2GHz-10GHz / 3m / Vertical / Transmit mode)



Note: Pre-scan graph only for identification purpose.
No frequency observed above 5GHz

------ : Peak measure	------ : Average measure
Frequency band investigated:	2GHz-25GHz
Unit :	dBµV/m
RBW :	1MHz
Antenna polarization :	Vertical
Voltage:	3V DC
Limit:	15.205 - 15.209 / RSS-GEN
Measurement detector:	Peak
Wide Measurement Uncertainty:	± 5dB (k=2)

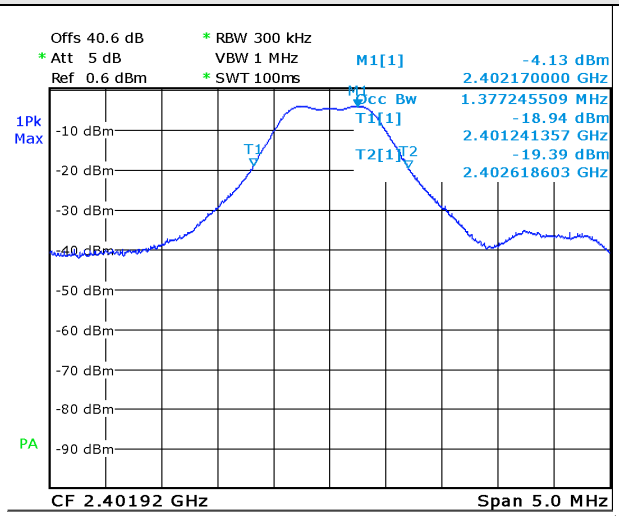
11. Occupied bandwidth (99%)

TEST: Occupied bandwidth (99%) / RSS-GEN		**Verdict**
Method: The setup is in an anechoic chamber. The spectrum analyzer is connected to the measuring antenna. Peak value is adjusted to Radiated Maximum Peak Output Power (See §7.). The tested equipment is set to transmit operation with modulations on lowest, middle and highest channel.		**Pass**
Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	10 to 40 °C	20°C
Relative Humidity	10 to 90 %	55%
Supplementary information: Test location: SMEE – CE Mesures / Test date: February 24th, 2015 Power supply voltage: 3V from battery (fully charged)		

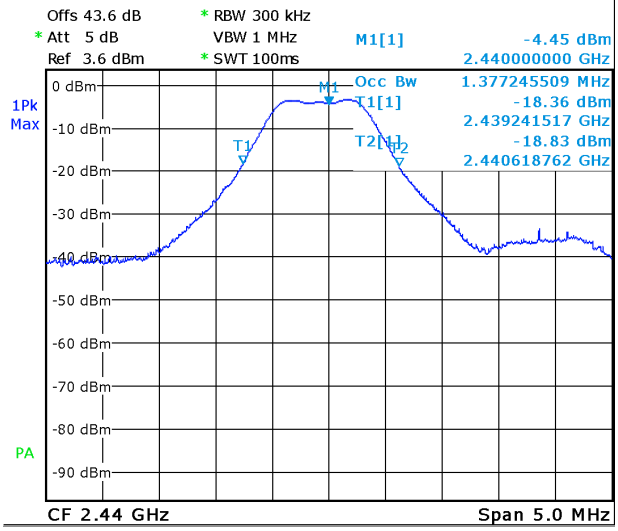
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Measuring Rec.	Rohde&Schwarz	ESL3	REC-101-001	2012/6	2015/6
Horn antenna	ETS-LINDGREN	3115	ANT-141-013	2014/3	2015/3
Anechoic chamber	COMTEST	214263	CAG-141-001	-	-
Turntable	Innco- Systems	CT0800	PLA-141-001	-	-

Tabulated Results for Occupied Bandwidth	
Frequency (MHz)	**99% Occupied Bandwidth** (MHz)
2402.0	1.3772MHz
2440.0	1.3772MHz
2480.0	1.3872MHz

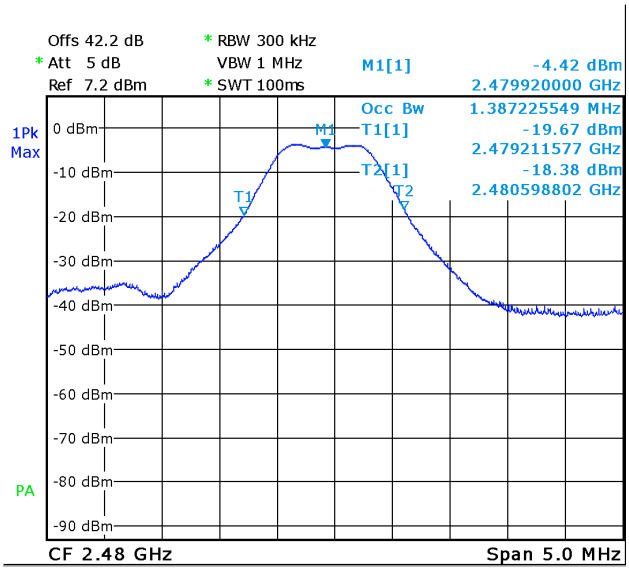
Graphical representation of Occupied Bandwidth



Low channel



Mid channel



High channel