



TEST REPORT

Version: 02 N°: 138624-679240-A

Electromagnetic compatibility tests according to the standards: Subject

FCC CFR 47 Part 15, Subpart C

RSS-247 Issue 1.0

GROUPE SEB Issued to

112 Chemin du Moulin Carron

69130 - ECULLY

FRANCE

Apparatus under test

♥ Product Module Bluetooth Low Energy / Bluetooth Low Energy Module

♦ Trade mark **GROUPE SEB** Manufacturer **GROUPE SEB**

♦ Model under test PE177-C

♥ FCC ID 2AGS8-PE177C **♥ IC** 20937-PE177C Serial number RADIO 2 & CEM 2

Conclusion See page 4

November 25^{h,} 2015 to November 27th, 2015 Test date

Test location MOIRANS

IC Test site 6500A-1 & 6500A-3

Composition of document 69 pages

Document issued on May 20, 2016

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Technical manager Central Des

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SUMMARY

1.	TEST PROGRAM	4
2.	SYSTEM TEST CONFIGURATION	5
3.	CONDUCTED EMISSION DATA	10
4.	RADIATED EMISSION DATA	13
5.	BANDWIDTH (15.247)	20
6.	MAXIMUM PEAK OUTPUT POWER (15.247)	23
7.	POWER SPECTRAL DENSITY (15.247)	27
8.	BAND EDGE MEASUREMENT (15.247)	30
9.	OCCUPIED BANDWIDTH	34
10.	ANNEX 1 (GRAPHS)	37
11	UNCERTAINTIES CHART	69



1. **TEST PROGRAM**

Standard: - FCC Part 15, Subpart C 15.247

- ANSI C63.10 (2013)

- RSS-247 Issue 1.0 - May 2015 - RSS-Gen Issue 4 - Nov 2014

- 558074 D01 DTS Measurement Guidance v03r03

EMISSION TEST		RESULTS			
	Frequency	Quasi-peak value (dBµV)	Average value (dBµV)	☑ PASS	
Limits for conducted disturbance at mains ports	150-500kHz	66 to 56	56 to 46	□ FAIL	
150kHz-30MHz	0.5-5MHz	56	46	── □ NA ── □ NP	
	5-30MHz	60	50		
Radiated emissions 9kHz-30MHz CFR 47 §15.209 (a) CFR 47 §15.247 (d) RSS-247 §5.5	9kHz-490kHz : Measure at 30 i 490kHz-1.705M	Measure at 300m 9kHz-490kHz : 67.6dBμV/m /F(kHz) Measure at 30m 490kHz-1.705MHz : 87.6dBμV/m /F(kHz) 1.705MHz-30MHz : 29.5 dBμV/m			
Radiated emissions 30MHz-25GHz* CFR 47 §15.209 (a) CFR 47 §15.247 (d) RSS-247 §5.5 Highest frequency: 32MHz (Declaration of provider)	Measure at 3m 30MHz-88MHz 88MHz-216MH: 216MHz-960MH Above 960MHz	☑ PASS □ FAIL □ NA □ NP			
Bandwidth 6dB CFR 47 §15.247 (a) (2) RSS-247 §5.2.1	At least 500kH	☑ PASS □ FAIL □ NA □ NP			
Power spectral Density CFR 47 §15.247 (e) RSS-247 §5.2.2	Limit: 8dBm/3l	☑ PASS □ FAIL □ NA □ NP			
Maximum Peak Output Power CFR 47 §15.247 (b) RSS-247 §5.4.4	Limit: 30dBm Conducted or R	Radiated measureme	ent	☑ PASS □ FAIL □ NA □ NP	
Band Edge Measurement CFR 47 §15.209 (a) CFR 47 §15.247 (d) RSS-247 §5.5	Limit: -20dBc (Radiated emis	☑ PASS □ FAIL □ NA □ NP			
Occupied bandwidth RSS-Gen §4.6.1	No limit			☑ PASS □ FAIL □ NA □ NP	
Receiver Spurious Emission** RSS-Gen §4.10	See RSS-Gen	See RSS-Gen §4.10			

^{*§15.33:} The highest internal source of a testing device is defined like more the highest frequency generated or used in the testing device or on which the testing device

TEST REPORT N° 138624-679240-A Version: 02 Page 4/69

works or agrees.

If the highest frequency of the internal sources of the testing device is lower than 108 MHz, measurement must be only performed until 1GHz.

If the highest frequency of the internal sources of the testing device ranges between 108 MHz and 500 MHz, measurement must be only performed until 2GHz.

If the highest frequency of the internal sources of the testing device ranges between 500 MHz and 1 GHz, measurement must be only performed until 5GHz.

If the highest frequency of the internal sources of the testing device is above 1 GHz, measurement must be only performed until 5 times the highest frequency or 40 GHz, while taking smallest of both.



2. **SYSTEM TEST CONFIGURATION**

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

PE177-C Serial Number: RADIO 2 & CEM 2



Photography of EUT

Power supply:

During all the tests, EUT is supplied by V_{nom}: 5VDC For measurement with different voltage, it will be presented in test method.

Name	Туре	Rating	Reference / Sn	Comments
Supply1	☐ AC ☑ DC ☐ Battery	5 Vdc	1	1

Inputs/outputs - Cable:

Access	Туре	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply1	Power supply and serial communication	1m			ightharpoons	
Access1	LED Output	1m	abla		\checkmark	

Auxiliary equipment used during test:

Туре	Reference	Sn	Comments
Linear power supply	TTI PL320	A7040FDXFF059	1
Smartphone	SAMSUNG S3 – GT-I9515	RF8F50DXF2F	1



Equipment information:

Bluetooth LE Type:	☑ BLE		☑ v4.0	□ v4.1		□ v4.2	
Frequency band:			[2400 – 24	83.5] MHz			
Spectrum Modulation:			☑ DSSS (Te	ested like it)			
Number of Channel:			4	0			
Spacing channel:	2MHz						
Channel bandwidth:			1M	Hz			
Antenna Type:	✓ Integral		☐ Ext	ernal		□ Dedicated	
Antenna connector:	☐ Yes		✓	No		Temporary for test	
			\checkmark	1			
Transmit chains:	Single antenna						
	Gain	1: 2dBi			Gain 2	2: XdBi	
Beam forming gain:	No						
Receiver chains			1	<u> </u>			
Type of equipment:	☐ Stand-alone		☑ Pli	ug-in		□ Combined	
Ad-Hoc mode:		Yes	_	<u> </u>		□ No	
Adaptivity mode:	☐ Yes (Load Bas		☐ Off mode		☑ No		
, ,	Clear Channel Assessment Time:			/			
Duty cycle:		_		ttent duty		☐ 100% duty	
Equipment type:	✓ Produce	ction mo			•	uction model	
	Tmin:		☑ -20°C □ 0°C		;	☐ X°C	
Operating temperature range:	Tnom:			20°C			
	Tmax:		□ 35°C	☐ 55°C	2		
Type of power source:	☐ AC power sup	ply	☑ DC pow			☐ Battery	
Operating voltage range:	Vnom:		□ 230\	//50Hz			



	CHANNEL PLAN						
Channel	Frequency (MHz)	Channel	Frequency (MHz)				
Cmin: 0	2402	20	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				
Cmid: 19	2440	Cmax: 39	2480				

DATA RATE					
Data Rate (Mbps) Modulation Type Worst Case Modulation					
1	GFSK	\square			



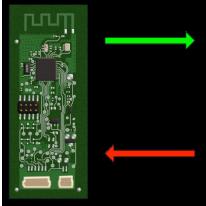
2.2. **EUT CONFIGURATION**

The EUT is set in the following modes during tests:

TX/RX Mode:

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

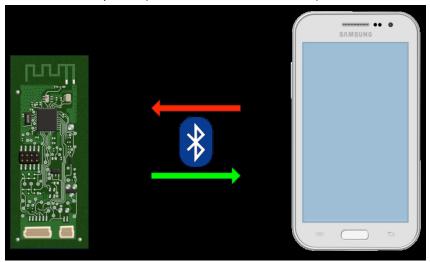
- Permanent reception



<u>EUT sample Firmware</u>: HostTestRelease_PTMMode_1_4_0 <u>EUT sample Serial number</u>: RADIO 2

Functional Mode:

A continuous communication is performed between EUT and Smartphone (Master Control Panel V3.4.1)



EUT sample Firmware: PE177C_CoffeeConnect_v1_1_20151124

EUT sample Serial number: CEM 2



2.3. EQUIPMENT MODIFICATIONS

✓ None
✓ Modification:

2.4. FIELD STRENGTH CALCULATION

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

Assume a receiver reading of 52.5dBµV is obtained. The antenna factor of 7.4 and a cable factor of 1.1 are added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dBµV/m.

 $FS = 52.5 + 7.4 + 1.1 - 29 = 32 dB\mu V/m$

The 32 dBµV/m value can be mathematically converted to its corresponding level in µV/m.

Level in μ V/m = Common Antilogarithm [(32dB μ V/m)/20] = 39.8 μ V/m.

2.5. CALIBRATION DATE

The calibration intervals are extended at 12+2 months. This extended interval is based on the fact that there is sufficient calibration data to statistically establish a trend or based on experience of use of the test equipment to assure good measurement results for a longer period



3. CONDUCTED EMISSION DATA

3.1. ENVIRONMENTAL CONDITIONS

Date of test : December 22nd,2015

Test performed by :J.PAUC
Atmospheric pressure (hPa) :990
Relative humidity (%) :31
Ambient temperature (°C) :21

3.2. TEST SETUP

Mains terminals

The EUT and auxiliaries are set:

☑ 80cm above the ground on the non-conducting table (Table-top equipment)

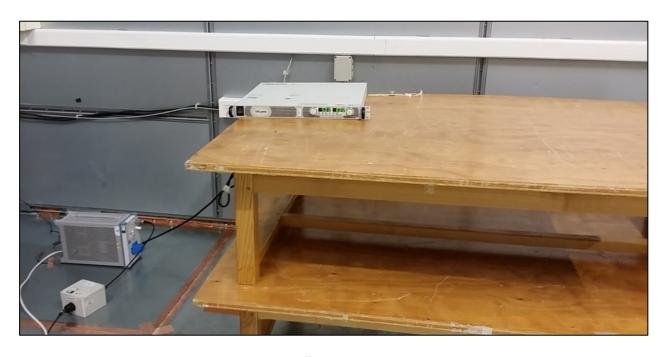
☐ 10cm above the ground on isolating support (Floor standing equipment)

The distance between the EUT and the LISN is 80cm. The EUT is 40cm away for the vertical ground plane.

The EUT is powered by V_{nom} .

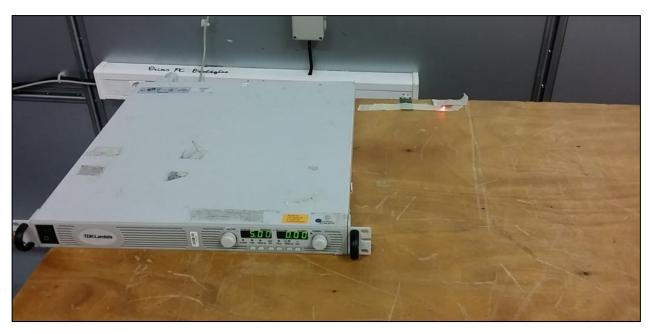
The EUT is powered through a LISN (measure). Auxiliaries are powered by another LISN.

EUT is set in functional mode see §2.2



Test setup







Test setup



TEST METHOD 3.3.

The product has been tested according to ANSI C63.10 and FCC Part 15 subpart C. The product has been tested with 120V/60Hz power line voltage and compared to the FCC Part 15 limits. Measurement bandwidth was 9kHz from 150kHz to 30MHz. This was followed by a Quasi-Peak, i.e. CISPR measurement for any strong signal. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary. The LISN (measure) is 50Ω / 50μ H. The Peak data are shown on plots in annex 1. Quasi-Peak and Average measurements are detailed in a table with frequencies and levels measured. Interconnecting cables and equipment's were moved to position that maximized emission. A summary of the worst case emissions found in all test configurations and modes is shown on the following page.

Measurements are performed on the phase (L1) and neutral (N) of power line voltage. Graphs are obtained in PEAK detection. Measures are also performed in Quasi-Peak and Average for any strong signal.

3.4. **TEST EQUIPMENT LIST**

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Cable + self	-	-	A5329578	07/15	07/16
LISN	RHODE & SCHWARZ	ENV216	C2320123	02/15	02/16
LISN	RHODE & SCHWARZ	ENV216	C2320291	11/15	11/16
Receiver 20Hz – 8GHz	ROHDE & SCHWARZ	ESU8	A2642019	04/15	04/16
Thermo-hygrometer (PM2)	OREGON	BAR916HG-G	B4206011	09/15	09/16
Transient limiter	HEWLETT PACKARD	11947A	A4049061	02/15	02/16
Linear Power supply	TDK-LAMBDA	GEN30-50	A7044055	-	-

3.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION ✓ None ☐ Divergence: 3.6. **TEST RESULTS** Measurements are performed on the phase (L1) and neutral (N) of the power line. Results: (PEAK detection) Measure on L1: graph Emc#1 (see annex 1) Measure on N: (see annex 1) graph Emc#2

3.7. **ONCLUSION**

Conducted emission data measurement performed on the sample of the product PE177-C, SN: CEM 2in configuration and description presented in this test report, show levels above the FCC CFR 47 Part 15 and RSS-247 limits.

N° 138624-679240-A Version: 02 Page 12/69



4. RADIATED EMISSION DATA

4.1. ENVIRONMENTAL CONDITIONS

Date of test :November 27th, 2015

Test performed by :J.PAUC
Atmospheric pressure (hPa) :1001
Relative humidity (%) :23
Ambient temperature (°C) :23

4.2. TEST SETUP

The installation of EUT is identical for pre-characterization measures in a 3 meters semi- anechoic chamber and for measures on the 10 meters Open site.

The EUT and auxiliaries are set:

☑ 80cm above the ground on the non-conducting table (Table-top equipment) - Below 1GHz

☑ 150cm above the ground on the non-conducting table (Table-top equipment) - Above 1GHz

☐ 10cm above the ground on isolating support (Floor standing equipment)

The EUT is powered by V_{nom} .

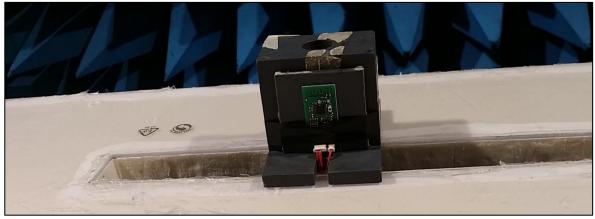




Test setup in anechoic chamber - XY Pos (30MHz - 1GHz)

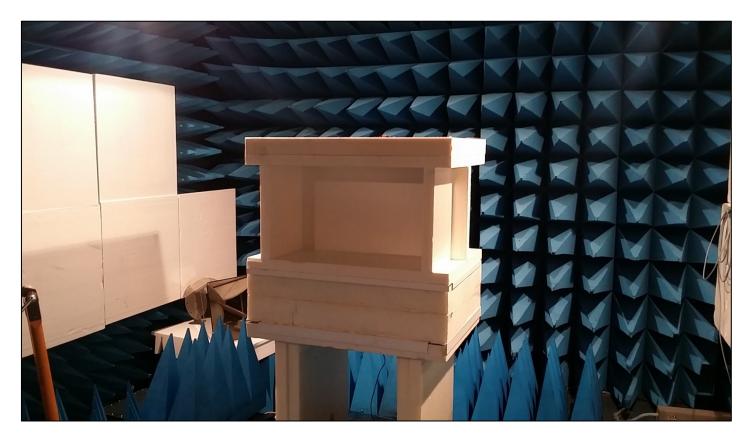


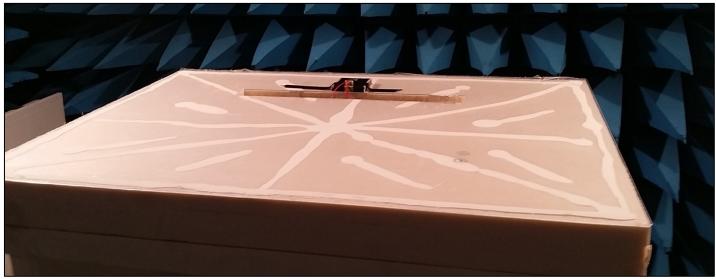




<u>Test setup in anechoic chamber – Z Pos (30MHz – 1GHz)</u>







<u>Test setup in anechoic chamber – XY Pos (>1GHz)</u>







<u>Test setup in anechoic chamber – Z Pos (>1GHz)</u>



4.3. TEST METHOD

The product has been tested according to ANSI C63.10, FCC part 15 subpart C.

Pre-characterisation measurement: (30MHz - 12.75GHz)

A pre-scan of all the setup has been performed in a 3 meters semi-anechoic chamber for frequency from 30MHz to 1GHz. Test is performed in horizontal (H) and vertical (V) polarization, the loop antenna was rotated during the test to maximize the emission measurement. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration.

The pre-characterization graphs are obtained in PEAK detection and PEAK/AVERAGE from 1GHz to 12.75GHz.

Characterization on 10 meters open site from 30MHz to 1GHz:

Radiated Emissions were measured on an open area test site. A description of the facility is on file with the FCC. The product has been tested at a distance of **10 meters** from the antenna and compared to the FCC part 15 subpart C limits. Measurement bandwidth was 9kHz below 30MHz and 120kHz from 30 MHz to 1GHz. Test is performed in horizontal (H) and vertical (V) polarization, the loop antenna was rotated during the test to maximize the emission measurement. The height antenna is varied from 1m to 4m. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration. A summary of the worst case emissions found in all test configurations and modes is shown.

Frequency list has been created with anechoic chamber pre-scan results.

<u>Characterization on 3 meters full anechoic chamber from 1GHz to 12.75GHz:</u>

The product has been tested at a distance of **3 meters** from the antenna and compared to the FCC part 15 subpart C limits. Measurement bandwidth was 1MHz from 1GHz to 12.75GHz.

Test is performed in horizontal (H) and vertical (V) polarization. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on all axis of EUT used in normal configuration. A summary of the worst case emissions found in all test configurations and modes is shown. The height antenna is

☐ On mast, varied from 1m to 4m

☑ Fixed and centered on the EUT (EUT smaller than the beamwidth of the measurement antenna, ANSI C63.10 §6.6.5) Frequency list has been created with anechoic chamber pre-scan results.

4.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Amplifier 1-13GHz	LCIE SUD EST	-	A7102067	10/14	11/15*
Antenna Bi-log	CHASE	CBL6111A	C2040172	06/15	06/17
Antenna horn	EMCO	3115	C2042027	11/15	11/16
Cable Measure @3m 18GHz	-	-	A5329038	08/15	11/16
Cable Measure @3m	-	-	A5329206	04/15	04/16
Semi-Anechoic chamber #3	SIEPEL	-	D3044017	-	-
Radiated emission comb generator	BARDET	-	A3169050	-	-
HF Radiated emission comb generator	LCIE SUD EST	-	A3169088	-	-
Spectrum analyzer	ROHDE & SCHWARZ	FSV 30	A4060051	11/15	11/16
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	04/15	04/16
Thermo-hygrometer (PM2)	OREGON	BAR916HG-G	B4206011	09/15	09/16
Turntable chamber (Cage#3)	ETS Lingren	Model 2165	F2000371	-	-
Turntable controller (Cage#3)	ETS Lingren	Model 2090	F2000444	-	-



4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

 \square None \square Divergence:

4.6. TEST RESULTS

4.6.1. Pre-characterization at 3 meters [30MHz-1GHz]

See graphs for 30MHz-1GHz:

Graph identifier		Mode	EUT position	Channel	Comments
Emr# 1	H & V	TX	Axis XY	Min	See annex 1
Emr# 2	H & V	TX	Axis XY	Max	See annex 1
Emr# 3	H & V	TX	Axis Z	Min	See annex 1
Emr# 4	H & V	TX	Axis Z	Max	See annex 1
Emr# 5	H & V	RX	Axis XY	Min	See annex 1
Emr# 6	H & V	RX	Axis XY	Max	See annex 1
Emr# 7	H & V	RX	Axis Z	Min	See annex 1
Emr# 8	H & V	RX	Axis Z	Max	See annex 1
Emr# 9	H & V	Functional	Axis XY	1	See annex 1
Emr# 10	H & V	Functional	Axis Z	1	See annex 1

4.6.2. Pre-characterization at 3 meters [1GHz-12.75GHz]

See graphs for 1GHz-12.75GHz:

Graph ide	entifier	Polarization	Mode	EUT position	Channel	Comments
Emr#	11	Н	TX	Axis XY	Min	See annex 1
Emr#	12	V	TX	Axis XY	Min	See annex 1
Emr#	13	Н	TX	Axis XY	Max	See annex 1
Emr#	14	V	TX	Axis XY	Max	See annex 1
Emr#	15	Н	TX	Axis Z	Min	See annex 1
Emr#	16	V	TX	Axis Z	Min	See annex 1
Emr#	17	Н	TX	Axis Z	Max	See annex 1
Emr#	18	V	TX	Axis Z	Max	See annex 1
Emr#	19	Н	RX	Axis XY	Min	See annex 1
Emr#	20	V	RX	Axis XY	Min	See annex 1
Emr#	21	Н	RX	Axis XY	Max	See annex 1
Emr#	22	V	RX	Axis XY	Max	See annex 1
Emr#	23	Н	RX	Axis Z	Min	See annex 1
Emr#	24	V	RX	Axis Z	Min	See annex 1
Emr#	25	Н	RX	Axis Z	Max	See annex 1
Emr#	26	V	RX	Axis Z	Max	See annex 1
Emr#	27	Н	Functional	Axis Z	1	See annex 1
Emr#	28	V	Functional	Axis Z	1	See annex 1
Emr#	29	Н	Functional	Axis XY	1	See annex 1
Emr#	30	V	Functional	Axis XY	1	See annex 1



4.6.3. Characterization on 10 meters open site from 30MHz to 1GHz

Worst case final data result:

Frequency list has been created with semi-anechoic chamber pre-scan results. Measurements are performed using a QUASI-PEAK detection.

No	Frequency (MHz)	Limit Quasi-Peak (dBµV/m)	Measure Quasi-Peak (dBµV/m)	Margin (Mes-Lim) (dB)	Angle Table (deg)	Pol Ant.	Ht Ant. (cm)	Correc. Factor (dB)	Comments
			No significati	ve frequency o	bserved				

Note: Measure have been done at 10m distance and corrected according to requirements of 15.209.e) (M@3m = M@10m+10.5dB)

Characterization on 3meters anechoic chamber from 1GHz to 12.75GHz 4.6.4.

Worst case final data result:

The frequency list is created from the results obtained during the pre-characterization in anechoic chamber. Measurements are performed using a PEAK and AVERAGE detection.

	Restricted Band (See §											
No	Frequency (MHz)	Limit Peak (dBµV/m)	Measure Peak (dBµV/m)	Margin Peak (dB)	Limit Average (dBµV/m)	Measure Average (dBµV/m)	Margin Average (dB)	Angle Table (°)	Pol. Ant.	Ht. Ant. (cm)	FC (dB)	Remark
1	2369.777	74.0	54.1	-19.9	54.0	34.3	-19.7	48	V	150	12.3	1
2	2484.507	74.0	51.7	-22.3	54.0	28.8	-25.2	225	Н	150	13.8	/
3	2485.287	74.0	50.3	-23.7	54.0	34.8	-19.2	225	Н	150	13.8	/
4	2485.820	74.0	54.5	-19.5	54.0	35.8	-18.2	220	V	150	13.8	1
5	2486.538	74.0	56.8	-17.2	54.0	36.8	-17.2	210	V	150	13.8	1

Note: Measures have been done at 3m distance.

4.7. CONCLUSION

Radiated emission data measurement performed on the sample of the product PE177-C, SN: RADIO 2 & CEM 2 in configuration and description presented in this test report, show levels below the FCC CFR 47 Part 15 and RSS-247 limits.

Version: 02 N° 138624-679240-A Page 19/69



5. **BANDWIDTH (15.247)**

5.1. **TEST CONDITIONS**

:November 25th, 2015 Date of test

Test performed by :J.PAUC Atmospheric pressure (hPa) :1001 Relative humidity (%) :27 Ambient temperature (°C) :21

5.2. **SETUP**

☑ Conducted measurement:

The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Offset: Attenuator+cable 10.3dB

☐ Radiated measurement:

The EUT is placed in an anechoic chamber; the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete, a delta marker is used to measure the frequency difference as the emission bandwidth.

Measurement Procedure: §8.1 Option 1 (DTS Measurement Guidance)

- 1. Set resolution bandwidth (RBW) = 100kHz.
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Compare the resultant bandwidth with the RBW setting of the analyzer.

5.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Spectrum analyzer	ROHDE & SCHWARZ	FSV 30	A4060050	01/15	01/16
Cable	-		A5329705	12/14	12/15
Attenuator 10dB	AEROFLEX		A7122268	02/15	02/16
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	04/15	04/16

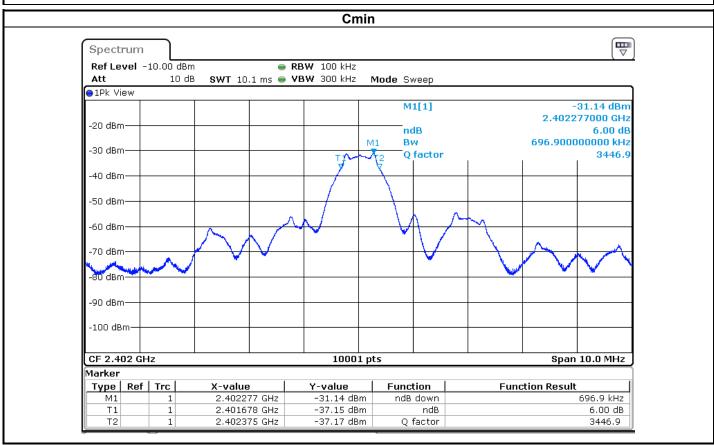
5.4.	DIVERGENCE,	ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION
☑ None	;	□ Divergence:

N° 138624-679240-A Version: 02 Page 20/69

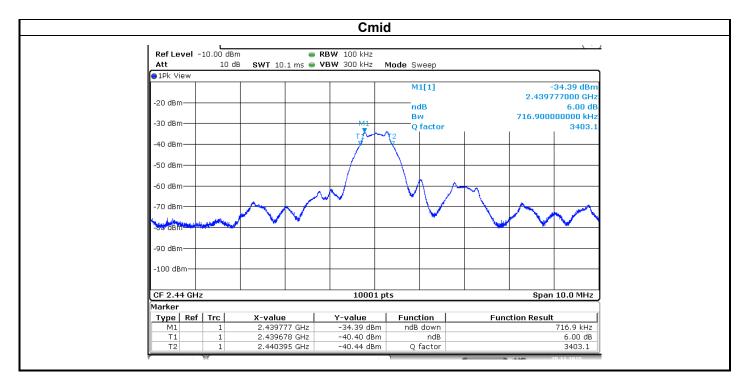


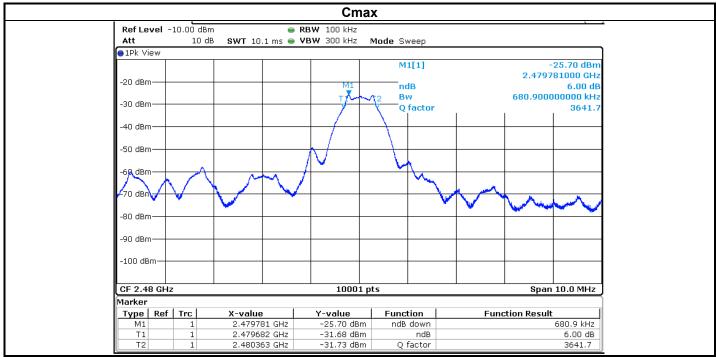
TEST SEQUENCE AND RESULTS 5.5.

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Bandwidth Limit (MHz)
Cmin	2402	0.697	>0.5
Cmid	2440	0.717	>0.5
Cmax	2480	0.681	>0.5









5.6. CONCLUSION

Bandwidth measurement performed on the sample of the product PE177-C, SN: RADIO 2, in configuration and description presented in this test report, show levels below the FCC CFR 47 Part 15 and RSS-247 limits.



6. MAXIMUM PEAK OUTPUT POWER (15.247)

6.1. TEST CONDITIONS

Date of test :November 25th, 2015

Test performed by :J.PAUC
Atmospheric pressure (hPa) :1001
Relative humidity (%) :27
Ambient temperature (°C) :21

6.2. SETUP

☑ Conducted measurement:

The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency.

Offset: Attenuator+cable 10dB

☐ Radiated measurement:

The EUT is placed in an anechoic chamber; the center frequency of the spectrum analyzer is set to the fundamental frequency.

The product has been tested at a distance of 3 meters from the antenna. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on 3 axis of EUT. A summary of the worst case emissions found in all test configurations and modes is shown on following table. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

To demonstrate compliance with peak output power requirement of section 15.247 (b), the transmitter's peak output power is calculated using the following equation:

$$E = \frac{\sqrt{30PG}}{d}$$

Where:

- E is the measured maximum fundamental field strength in V/m.
- G is the numeric gain of the transmitting antenna with reference to an isotropic radiator.
- d is the distance in meters from which the field strength was measured.
- P is the power in watts for which you are solving:

$$P = \frac{(E d)^2}{30 G}$$



Maximum peak conducted output power

One of the following procedures may be used to determine the maximum peak conducted output power of a DTS EUT.

• ☑ RBW ≥ DTS bandwidth §9.1.1 (DTS Measurement Guidance)

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the DTS bandwidth.

- a) Set the RBW ≥ DTS bandwidth.
- b) Set VBW \geq 3 x RBW.
- c) Set span ≥ 3 x RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

• Integrated band power method

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

- a) Set the RBW = 1 MHz.
- b) Set the VBW \geq 3 x RBW
- c) Set the span \geq 1.5 x DTS bandwidth.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges

6.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Spectrum analyzer	ROHDE & SCHWARZ	FSV 30	A4060050	01/15	01/16
Cable	-		A5329705	12/14	12/15
Attenuator 10dB	AEROFLEX		A7122268	02/15	02/16
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	04/15	04/16

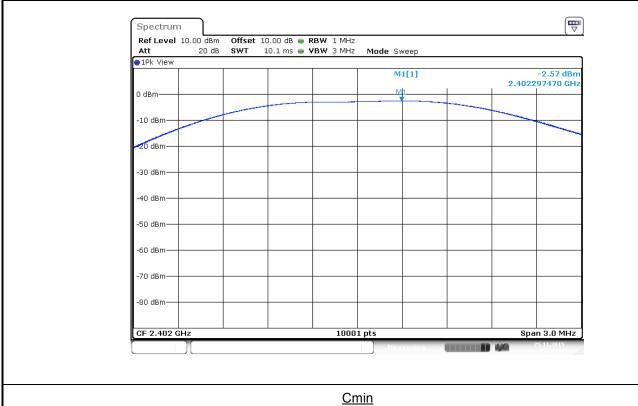
6.4.	DIVERGENCE,	ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION
✓ None)	□ Divergence:

TEST REPORT
N° 138624-679240-A Version : 02 Page 24/69



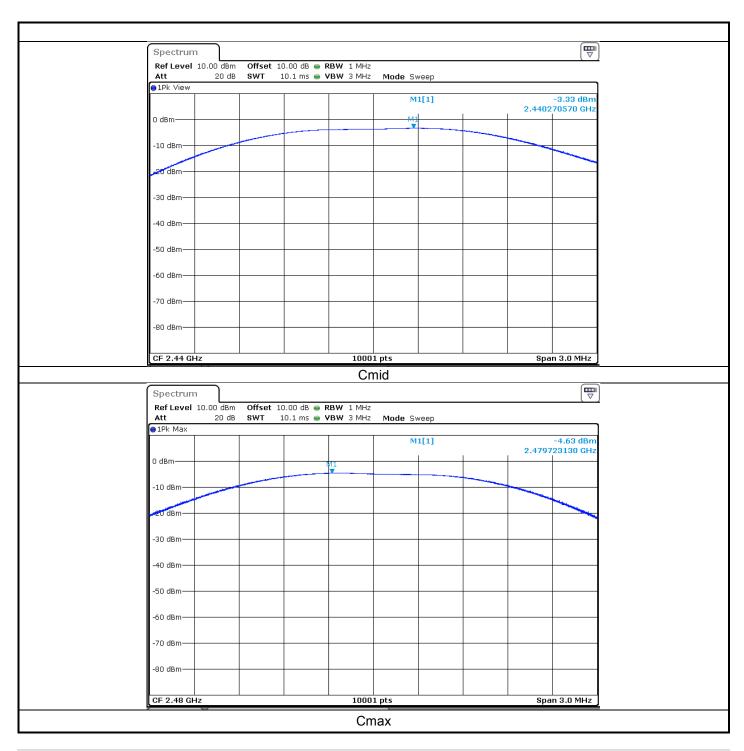
6.5. TEST SEQUENCE AND RESULTS

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Power Limit (dBm)	Margin (dB)
Cmin	2402	-2.6	30.0	-27.4
Cmid	2440	-3.3	30.0	-26.7
Cmax	2480	-4.6	30.0	-25.4



TEST REPORT
N° 138624-679240-A Version : 02 Page 25/69





6.6. CONCLUSION

Maximum Peak Output Power measurement performed on the sample of the product PE177-C, SN: RADIO 2, in configuration and description presented in this test report, show levels below the FCC CFR 47 Part 15 and RSS-247 limits.



7. POWER SPECTRAL DENSITY (15.247)

7.1. TEST CONDITIONS

Date of test :November 25th, 2015

Test performed by :J.PAUC
Atmospheric pressure (hPa) :1001
Relative humidity (%) :27
Ambient temperature (°C) :21

7.2. SETUP

☑ Conducted measurement:

The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency.

Offset: Attenuator+cable 10dB

☐ Radiated measurement:

The EUT is placed in an anechoic chamber; the center frequency of the spectrum analyzer is set to the fundamental frequency.

The product has been tested at a distance of 3 meters from the antenna. Continuous linear turntable azimuth search was performed with 360 degrees range. Measurement performed on 3 axis of EUT. A summary of the worst case emissions found in all test configurations and modes is shown on following table. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

To demonstrate compliance with peak output power requirement of section 15.247 (b), the transmitter's peak output power is calculated using the following equation:

$$E = \frac{\sqrt{30PG}}{d}$$

Where:

- E is the measured maximum fundamental field strength in V/m.
- G is the numeric gain of the transmitting antenna with reference to an isotropic radiator.
- d is the distance in meters from which the field strength was measured.
- P is the power in watts for which you are solving:

$$P = \frac{(E d)^2}{30 G}$$

Measurement Procedure PKPSD: §10.2 (DTS Measurement Guidance)

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to: 3 kHz.
- d) Set the VBW \geq 3 x RBW.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



7.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Spectrum analyzer	ROHDE & SCHWARZ	FSV 30	A4060050	01/15	01/16
Cable	-		A5329705	12/14	12/15
Attenuator 10dB	AEROFLEX		A7122268	02/15	02/16
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	04/15	04/16

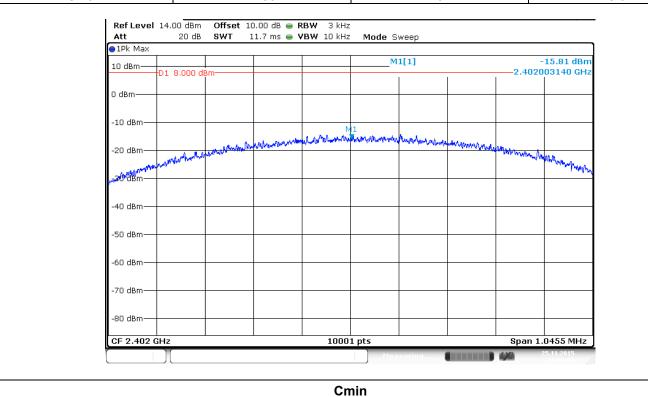
7.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

☑ None ☐ Divergence:

7.5. **TEST SEQUENCE AND RESULTS**

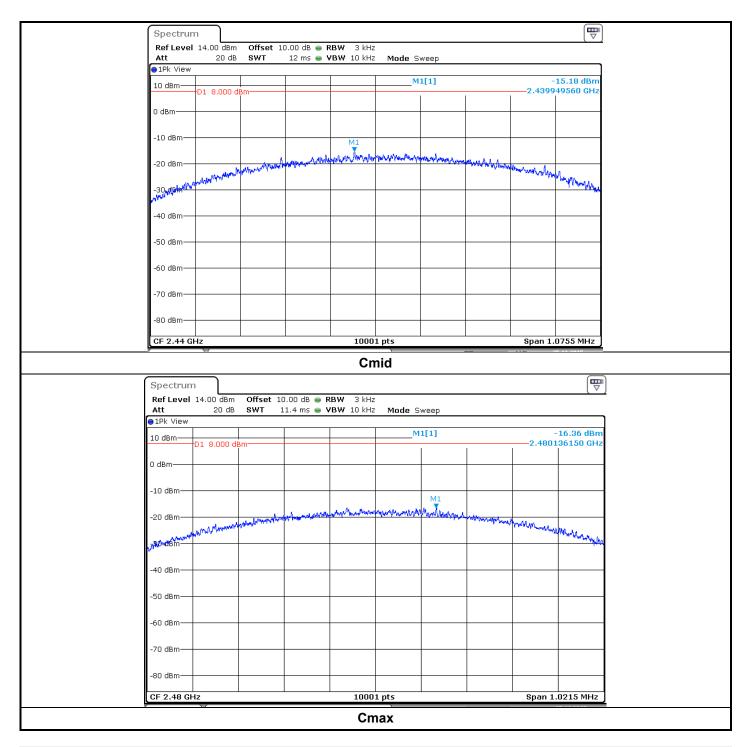
Modulation:

Channel	Channel Frequency (MHz)	Power Spectral Density (dBm)	PSD Limit (dBm)
Cmin	2402	-15.8	8.0
Cmid	2440	-15.2	8.0
Cmax	2480	-16.4	8.0



N° **138624-679240-A** Version: 02 Page 28/69





7.6. CONCLUSION

Power Spectral Density measurement performed on the sample of the product PE177-C, SN: RADIO 2, in configuration and description presented in this test report, show levels below the FCC CFR 47 Part 15 and RSS-247 limits.



8. **BAND EDGE MEASUREMENT (15.247)**

8.1. **TEST CONDITIONS**

:November 25th, 2015 Date of test Test performed by :J.PAUC Atmospheric pressure (hPa) :1001 Relative humidity (%) :27 Ambient temperature (°C) :21

8.2. LIMIT

RF antenna conducted test: § 11 (DTS Measurement Guidance)

Set RBW = 100 kHz, Video bandwidth (VBW) > RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB. For -20dBc limit, lowest power output level is considered, worst case.

Radiated emission test: § 12 (DTS Measurement Guidance)

Applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation. See results in Radiated emissions section before.

8.3. **SETUP**

The EUT is placed in an anechoic chamber; levels have been corrected to be in compliant with Peak Output Power measurement. The EUT is turn ON; the graphs of the restrict frequency band are recorded with a display line indicating the highest level and other the 20dB offset below to show compliance with 15.247 (d) and 15.205. The emissions in restricted bands are compared to 15.209 limits.

RBW: 100kHz VBW: 300kHz

8.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Spectrum analyzer	ROHDE & SCHWARZ	FSV 30	A4060050	01/15	01/16
Cable	-		A5329705	12/14	12/15
Attenuator 10dB	AEROFLEX		A7122268	02/15	02/16
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	04/15	04/16

8.5.	DIVERGENCE	ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION
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☑ None	:	□ Divergence:

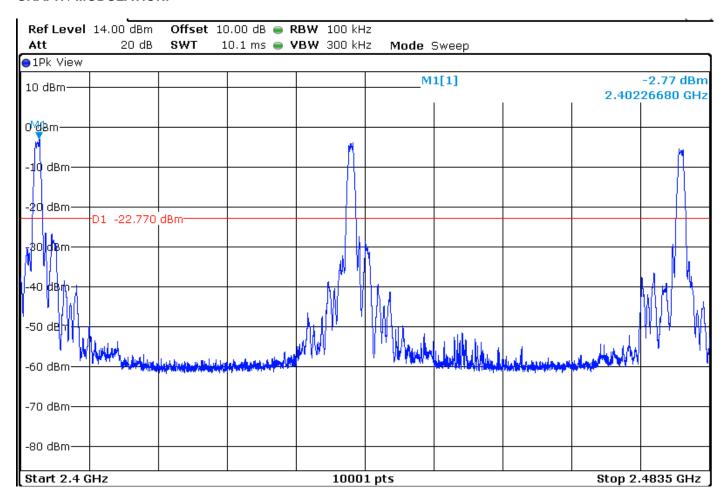
TEST REPORT N° 138624-679240-A Version: 02 Page 30/69



8.6. TEST SEQUENCE AND RESULTS

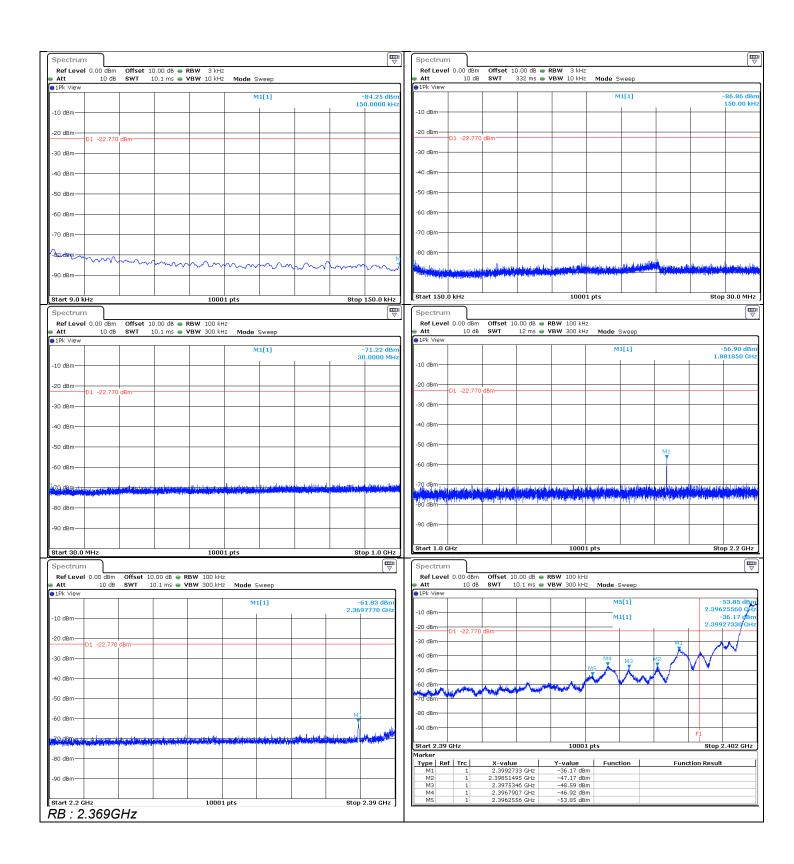
Offset: Attenuator+cable 10dB

GRAPH / MODULATION.

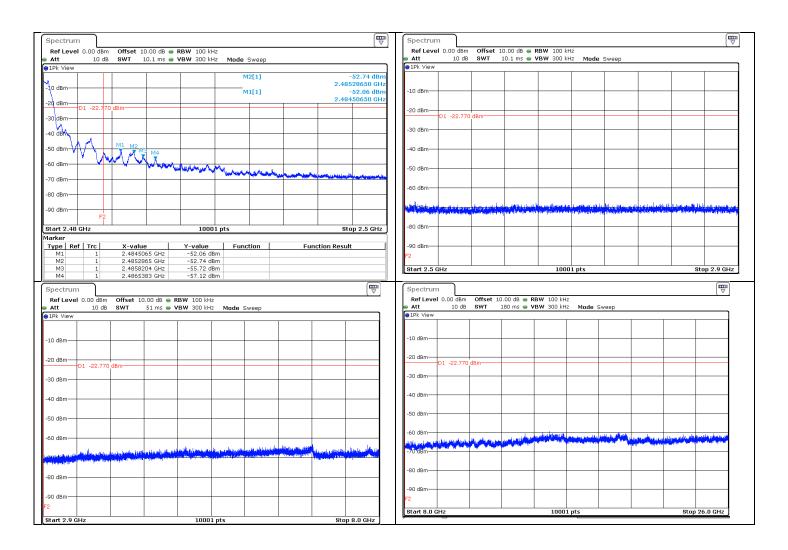


-20dBc limit used Worst case: Cmin , limit at -22.77dBm









8.7. CONCLUSION

Band Edge Measurement performed on the sample of the product PE177-C, SN: RADIO 2, in configuration and description presented in this test report, show levels below the FCC CFR 47 Part 15 and RSS-247 limits.



9. **OCCUPIED BANDWIDTH**

9.1. **TEST CONDITIONS**

:November 25th, 2015 :November 26th, 2015 Date of test

Test performed by :J.PAUC :J.PAUC :1001 Atmospheric pressure (hPa) :1001 Relative humidity (%) :27 :26 Ambient temperature (°C) :21 :22

9.2. **SETUP**

☑ Conducted measurement:

The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Offset: Attenuator+cable: 10dB

☐ Radiated measurement:

The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Measurement Procedure:

- a) RBW shall be in the range of 1% to 5% of the anticipated occupied bandwidth
- Set the video bandwidth (VBW) ≥ 3 x RBW
- c) SPAN = Capture all products of the modulation process
- d) Detector = Peak.
- e) Trace mode = max hold.
- Sweep = auto couple. f)
- g) Allow the trace to stabilize.
- h) OBW 99% function of spectrum analyzer used

9.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Spectrum analyzer	ROHDE & SCHWARZ	FSV 30	A4060050	01/15	01/16
Cable	-		A5329705	12/14	12/15
Attenuator 10dB	AEROFLEX		A7122268	02/15	02/16
Thermo-hygrometer (C3)	OREGON	BAR206	B4204078	04/15	04/16

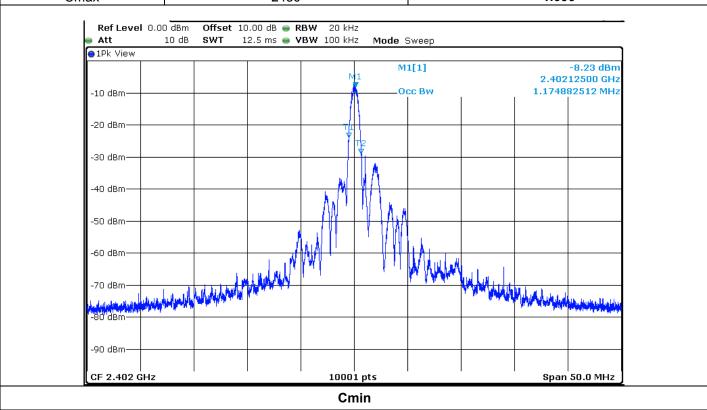
9.4.	DIVERGENCE,	ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION
☑ None	9	□ Divergence:

TEST REPORT Version: 02 N° 138624-679240-A Page 34/69

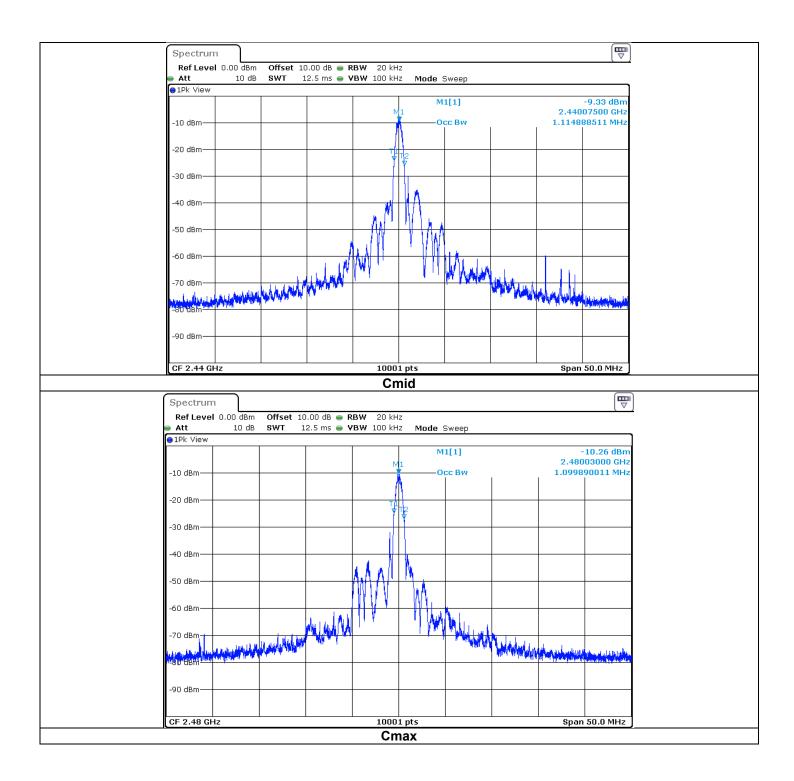


9.5. TEST SEQUENCE AND RESULTS

Channel	Channel Frequency (MHz)	99% Occupied Bandwidth (MHz)
Cmin	2402	1.174
Cmid	2440	1.115
Cmax	2480	1.099

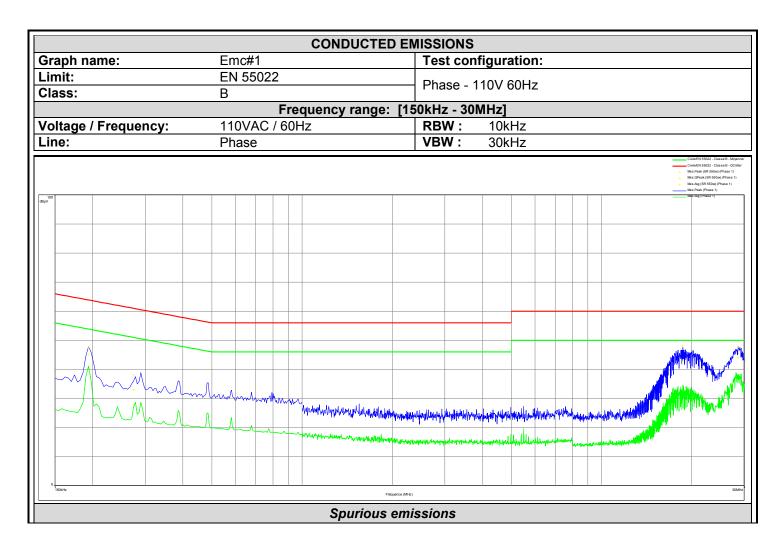








10. ANNEX 1 (GRAPHS)



Frequency	Mes.Peak	Mes.QPeak	LimQP	Mes.QPeak-	Mes.Avg	LimAvg	Mes.Avg-
(MHz)	(dBµV)	(dBµV)	(dBµV)	LimQP (dB)	(dBµV)	(dBµV)	LimAvg (dB)
0.195	47.5	45.08	63.86	-18.78	40.52	53.86	-13.35
0.275	38.13	32.93	60.52	-27.59	27.85	50.52	-22.67
18.671	48.19	43.07	60	-16.93	33.36	50	-16.64
28.531	47.89	44.12	60	-15.88	37.67	50	-12.33



	CONDUCTED EN	MISSIONS
Graph name:	Emc#2	Test configuration:
Limit:	EN 55022	Neutral - 110V 60Hz
Class:	В	
	Frequency range: [15	50kHz - 30MHz]
Voltage / Frequency:	110VAC / 60Hz	RBW: 10kHz
Line:	Phase	VBW: 30kHz
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Frequency	Mes.Peak	Mes.QPeak	LimQP	Mes.QPeak-	Mes.Avg	LimAvg	Mes.Avg-
(MHz)	(dBµV)	(dBµV)	(dBµV)	LimQP (dB)	(dBµV)	(dBµV)	LimAvg (dB)
0.195	47.73	45.26	63.86	-18.6	41.14	53.86	-12.72
19.277	46.15	41.95	60	-18.05	26.96	50	-23.04
28.768	46.94	41.89	60	-18.11	33.84	50	-16.16



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		requency range: [30N					
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\zimuth:	0° - 360°	V	BW : 300)kHz			
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		⊢requence (MHz)					
		Spurious emissi	ons				



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						Fr	equency range: [30]								
Antenna pol	arizatio	n:				l &		RBW:		kHz					
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Antenna polarization:	Horizontal &)kHz					
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Class:				TOX OHIIII		
		requency range: [30]				
Antenna polarization:	Horizontal &			kHz		
Azimuth:	0° - 360°		/BW : 300	kHz		
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		Spurious emiss	ions			



	RADIATED EMI	SSIONS	
Graph name:	Emr#6	Test configuration:	
Limit:	FCC CFR47 Part15C	Emr6 - Pos XY RX Cmax	
Class:			
	Frequency range: [3		
Antenna polarization:	Horizontal & Vertical	RBW : 100kHz	
Azimuth:	0° - 360°	VBW: 300kHz	
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	RADIA	TED EMISSIONS	
raph name:	Emr#7	Test configuration:	
imit:	FCC CFR47 Part15C	Emr7 - Pos Z RX Cmin	
lass:			
	Frequency i	ange: [30MHz - 1GHz]	
ntenna polarization:	Horizontal & Vertical	RBW : 100kHz VBW : 300kHz	
zimuth:	0° - 360°	VBW : 300kHz	
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	Spur	ious emissions	



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Class:										
			requency range: [30							
Antenna polarization:				RBW:	100kHz					
Azimuth:	0° - 36	30°		VBW:	300kHz					
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Class:										
		quency range: [30MHz - 10								
Antenna polarization:	Horizontal & Ve		100kHz							
Azimuth:	0° - 360°	VBW:	300kHz							
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		Spurious emissions								



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ntenna polarization:	Horizontal &		100kHz				
zimuth:	0° - 360°	VBW :	300kHz				
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March to the second political and the second	reformed for more special property property and special property and spe	a security of providentally providence of a before a graph was policies and a substitute of	W. March Land Land Land Land Land Land Land Land				
30MHz		Fridquence (MHz)		1GH:			
		Spurious emissions					



		RADIA	ATED EMISS	IONS						
Graph name:	Emr#11		Т	est conf	figuration	:				
Limit:	FCC CFR47	Part15C	(1	1\	VV TV C	min				
Class:			(1	1) - AXIS	XY - TX C	/				
		quency ra	ange: [1GHz							
Antenna polarization:	Horizontal			BW:	1MHz					
Azimuth:	0° - 360°		V	BW:	3MHz					
119							+	FCC/FCC CFF	R47 Part15C R47 Part15C (Manuel) (Ho rizontale)	- Classe: - Moyenne/3.0m/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/ orizontale)
the state of the s		And the second s	المار الموسود	المن المنافعة الإسماد الموسود. ويضاع المنافعة ا	John Barry Charles Barry Charles	and the state of t	ha James James Market Hall and	Allanda Allanda	ار باد المريد المري	And the second designed and th
1GHz			Fréquence (MHz)							12.75GH
		Spu	rious emiss	ons						

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2402.31	95.86	290	Horizontale



		RADIATED E	MISSIONS				
Graph name:	Emr#12		Test con	figuration:			
Limit:	FCC CFR47 P	art15C	() () Avia	VV TV Cmir	•		
Class:			(V) - AXIS	XY - TX Cmi	1		
	Frequ	uency range: [1GHz - 12.75	GHz]			
Antenna polarization:	Vertical		RBW:	1MHz			
Azimuth:	0° - 360°		VBW:	3MHz			
100					FCC/ FCC/ Nives Mes.	FCC CFR47 Part15	C - Classe: - Moyenne/3.0m C - Classe: - QCrête/3.0m/ C - Classe: - Crête/3.0m/ Verticale)
hande and hand hand a substitute of the substitu	and the same of th	And the state of t	Education land piece land a communication of the co	n je kolik sijanju kone dashiji boshma kohela se k Malajan dangan salam salam ji pangan ji bashil	And the second s	المعربية المعربية المعربية والمعربية والمعربية والمعربية والمعربية والمعربية والمعربية والمعربية والمعربية وال والمعربية والمعربية	Harabash Alexandry Company
Martin Control of the	Angelegent Land by March Ball Comment of the Commen						
0 Yorks		Fréquer	ce (MHz)				12.75GHz
		Spurious e	missions				

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2402.31	87.79	205	Verticale



	RAI	DIATED EMIS	SIONS					
	nr#13	1	Test confi	guration	:			
	C CFR47 Part150)	(H) - Axis XY - TX Cmax					
Class:		,	<u> </u>		Шах			
		range: [1GH						
	rizontal		RBW:	1MHz				
Azimuth: 0°	- 360°	\	/BW :	3MHz				
110				_		FCC/FC0 FCC/FC0 Niveau (F Mes.Pea	CFR47 Part15	GC - Classe: - Moyenne/3.0m GC - Classe: - QCrête/3.0m/ GC - Classe: - Crête/3.0m/ Horizontale)
All you have the first first of the way the first of the same of the first of the same of the first of the fi	And the second property of the second propert	And the state of t	and the second of the second o	and the second s		day to the second secon	orthographore and other productions of the control	And the state of t
O Toble		Fréquence (MHz)						12.75GHz
	Si	ourious emiss	ions					

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2479.8	90.83	313	Horizontale



		RADIA	ATED EMISS	IONS						
Graph name:	Emr#14		Т	est conf	iguration	:				
Limit:	FCC CFR47 P	art15C								
Class:			-	-	XY - TX C	Шах				
		uency ra	ange: [1GHz							
Antenna polarization:	Vertical			BW:	1MHz					
Azimuth:	0° - 360°		V	BW:	3MHz					
110							+	FCC/FCC CF	R47 Part150 R47 Part150 x Manuel) (V erticale)	C - Classe: - Moyenne/3.0n/ C - Classe: - QCrête/3.0m/ C - Classe: - Crête/3.0m/ erticale)
Miles and some of the second s	الرام من من م	where the same before the	Marie Company	"Hill market Albertalisery (1842) Albertalisery (1842)	All paper to the second of the party of the second of the	Andread Aspendischer	the state of the s		and the party of the last	Marye Jagorya Alpa
A property of the second and the sec										12.750
PAN IS			Fréquence (MHz)							12.7509
		Spu	rious emissi	ons						

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2479.8	83.36	153	Verticale



	RADI	ATED EMISS	IONS						
Graph name: Em	r#15			guration	:				
	C CFR47 Part15C								
Class:				Z - TX Cn	nın				
		ange: [1GHz							
	izontal		BW:	1MHz					
Azimuth: 0° -	360°	V	BW:	3MHz					
attyvion ⁶⁰						F N N	CC/FCC CFR	47 Part15C 47 Part15C Manuel) (Ho izontale)	- Classe: - Moyenne/3.0m/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/ - rizontale)
		- American American	non-the-files	January Indian John Spiriter Spiriter	Jia N	a de la constanta de la consta	الماسه القسط	المهائرين المرا	
چې پېښوند د د د د د د د د د د د د د د د د د د	marine de la constitución de la	A CARLES BY LINES AND	agilorifia)	Paragraphic distribution and		barte //L/red-mile	WALL		
0 A Totale	·	Fréquence (MHz)							12.75GHz
	Spi	ırious emissi	ons						

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2402.31	86.94	161	Horizontale



	RADIAT	ED EMISSIONS			
Graph name: Emr#		Test cor	nfiguration:		
Limit: FCC	CFR47 Part15C				
Class:		(V) - AXIS	s Z - TX Cmin		
	Frequency ran	ge: [1GHz - 12.7	5GHz]		
Antenna polarization: Verti		RBW:	1MHz		
Azimuth: 0° - 3	360°	VBW:	3MHz		
Gavor ⁵⁰⁰				FCC/FCC CFR4	
		the state of the s			Han weet in the second of the
le og giver fra state fra	Marie Carlos Car	The state of the s	A Proposition of the Control of the		
0 10H2		Fridquance (MFz)			12.75GH
	Spurio	ous emissions			

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2402.31	94.78	160	Verticale



		RADIA	ATED EMISS	IONS						
Graph name:	Emr#17		Т	est conf	iguration	:				
Limit:	FCC CFR47 P	art15C	/1	J) Avio	7 TV Cn	201				
Class:			(1	1) - AXIS	Z - TX Cn	lax				
		uency ra	ange: [1GHz							
Antenna polarization:	Horizontal		R	BW:	1MHz					
Azimuth:	0° - 360°		V	BW:	3MHz					
190							+	FCC/FCC CFF	R47 Part15C R47 Part15C x Manuel) (H orizontale)	- Classe: - Moyenne/3.0m/ - Classe: - QCréte/3.0m/ - Classe: - Créte/3.0m/ orizontale)
		the state of the s	ر المنافعة المنافعة المنافعة المنافعة ال	Manager die schreiben der Stellen der Stel	Market Barret Barret	on the same of the	ن من الشعر الميارين ومن الميارين	Addis Annis order	Agent with the second	Armen and Argument
And the state of t	And the second s									12.7504
			Fréquence (MHz)							
		Spu	rious emissi	ons						

Frequency (MHz)	Peak Level (dBµV/m)	Angle (°)	Commentaires
2479.8	82.01	135	Horizontale



		RADIATI	ED EMISS	IONS						
Graph name:	Emr#18		T	est confi	guration	:				
Limit:	FCC CFR47 Par	t15C	()	/) - Axis Z	7 TY Cm	nav				
Class:						ıax				
		ency rang	je: [1GHz							
Antenna polarization:	Vertical			BW:	1MHz					
Azimuth:	0° - 360°		V	BW:	3MHz					
119							— F	CC/FCC CFF	R47 Part15C R47 Part15C erticale)	- Classe: - Moyenne/3.0m/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/
GB _B V/im										
and the state of t	half was	ales and the state of the state	geralder gebruikter er sein der er er fine	المورد من المورد ال المورد المورد	Aller of the state	and the second s	Programme de Anglish de Programme de la Constitución	بالدرس مدر الماراط المراطع	production of the second	ALLY AND ALLY AND
after the profite to the same and the same of the same	Alexander of the first of the state of the s									
0.										
1GHz			Fréquence (MHz)							12.75GHz
		Spurio	us emissi	ons						



	RAD	IATED EMISSIO	NS			
Graph name:	Emr#19	Tes	t configurati	on:		
Limit:	FCC CFR47 Part15C		- Axis XY - R			
Class:		, ,		Cilliii		
		range: [1GHz -				
Antenna polarization:	Horizontal	RB				
Azimuth:	0° - 360°	VBV	V : 3MHz			
110					FCC/FCC CFR47 F	
dByV/m						
		در المارية الم المارية المارية	anterior	white and the second district the second	المراجعين المادي المراجعين المراجعين المراجعين المراجعين المراجعين المراجعين المراجعين المراجعين المراجعين الم المراجعين المراجعين	AND PROPERTY OF THE PROPERTY O
رود به المراجع المراجع المراجع المراجع	producible description of the second of the	Approximations and the second	- Marie de Salaman	New Park		
We start to the start of the st						
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10Hz		Fréquence (MHz)				12.75GHz
	Sp	urious emissior	ıs			



	RADIA	ATED EMISS	IONS						
Graph name: Emr		T	est confi	iguration	:				
Limit: FCC	CFR47 Part15C	Λ	/\	VV DV (min				
Class:		-	-	XY - RX C	/				
	Frequency ra								
Antenna polarization: Verti			BW:	1MHz					
Azimuth: 0° - :	360°	V	BW:	3MHz					
	I					F	FCC/FCC CFF	R47 Part15C R47 Part15C rticale)	- Classe: - Moyenne/3.0m/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/
							يىلىقلاسى	ملماس عام	manufacture property and for
and the form of the second of	And the state of t	aander den eerste de de sterre de st	handidahidada Laguluh-dalla Laguluh-dalla Labahagi ^k d	_{r e} deserta jeneraljajen, end Ngde <mark>arig de _e desertaj delevija</mark>	Later Landson Spirit Ser Propulsion Spirit Services	oles francisco	Monthlypa	_H adday, _H allada	ALL PROPERTY OF THE PROPERTY O
A Company of the Comp									
0									
TORE		Fréquence (MHz)							12.75GHz
	Spu	rious emissi	ons						



	RADIA	ATED EMISS	IONS					
Graph name: Em	r#21	Т	est confi	iguration	:			
_imit: FC	C CFR47 Part15C			XY - RX (
Class:		(1	1) - AXIS /	Λ1 - KΛ (JIIIax			
	Frequency ra	ange: [1GHz	- 12.750					
	rizontal		BW:	1MHz				
Azimuth: 0°	- 360°	V	BW:	3MHz				
103						FCC/FC FCC/FC Mes.Pe	C CFR47 Part15	C - Classe: - Moyenne/3.0m/ GC - Classe: - QCrête/3.0m/ GC - Classe: - Crête/3.0m/
dBpVm C								
		Mary and a state of the state o	دوروالادرار معرسالم اعربالامالادورور	المالما المراجعة الم	margaret alle	الماجهة المداعة والماجهة والمعالمة	and for the parties.	Leteral March Control of Control
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अवस्थानमञ्जूष स्वाप्त । प्रमा								
1GHz		Fréquence (MHz)						12.75GHz
	C	rious emissi						



	RADIA	ATED EMISS	IONS							
Graph name: Emr	#22	Т	est confi	iguration	:					
Limit: FCC	CFR47 Part15C									
Class:		(,	(V) - Axis XY - RX Cmax							
	Frequency ra	ange: [1GHz	- 12.750	Hz]						
Antenna polarization: Vert	cal	R	BW:	1MHz						
Azimuth: 0° -	360°	V	BW:	3MHz						
80/00 Burner						\equiv	FCC/FCC CFI	R47 Part150 R47 Part150 erticale)	C - Classe: - Moyenne/3.0 C - Classe: - QCrête/3.0r/ C - Classe: - Crête/3.0m/	
depl/m										
		The state of the s	Marie Marie Marie and	معالي والروار بالمستوالة	and the state of the state of	Secondario (Labora	روالوالية والوالوالية والوالوالية	ر مامیور پیدادی اوالاداد داداداد	Manager and Handley Man	
man de son de production de la productio	Charles and head for the second secon	Law of his property and the same of the sa	his far man	Toynundelpallatiletales/eyel-	alabate de la constitución de la					
Works of the state										
0 198±										
10.042		Fréquence (MHz)							12.75	
		rious emissi								



	RAD	IATED EMISS	IONS						
Graph name:	Emr#23	T	est confi	guration	:				
Limit:	FCC CFR47 Part15C	(1-	l) - Axis Z	DY Cr	min				
Class:		,	<u> </u>		11111				
		range: [1GHz		_					
Antenna polarization:	Horizontal			1MHz					
Azimuth:	0° - 360°	V	BW:	3MHz					
(Autom 10)				I		— F	CC/FCC CFR4	7 Part15C - 7 Part15C - ontale)	- Classe: - Moyenne/3.0n/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/
		a strawnsky proportion of the strawnsky of	uder-distance	ula in contra attac	والمشاورة المستعلقات والمستعدد	Harristo (galacije voji	اور پرداز بردانا بردوان در ایاد اسامالات	الدير مالمام ا	ta _a dh feagar tha gairle an go ag ar ag a
on the second of the principal design of the second of the	ڔڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛڛ	And the second s	(Hydriwa),	arabitus propinsi	and the first of the tenton	(Walanta a soul			
1GHz		Fréquence (MHz)							12.75GH
	Sp	urious emissi	ons						



	RADIA	ATED EMISS	IONS						
Graph name: Emr#		T	est confi	guration	:				
Limit: FCC	CFR47 Part15C	Λ	/) Avic 7	Z - RX Cn	nin				
Class:		-	-		11111				
	Frequency ra								
Antenna polarization: Verti			BW:	1MHz					
Azimuth: 0° - 3	360°	V	BW:	3MHz					
(Barry 100)							CC/FCC CFF	R47 Part15C R47 Part15C erticale)	- Classe: - Moyenne/3.0m/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/
a transport of the state of the	wednesd to the last of the las	رود المراجعة المراجعة المراجعة المراجعة ال	an and an and an	Alphania Anglanda Marahan Marahan Marahan Marahan Marahan Marahan Marahan Marahan Marahan	felile med en felile fille	underlingssenhor	Makingalle,	مهاموله والمعر مالحوله ومال	handy back you have
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0.} YGHz		Fréquence (MHz)							12.75GHz
	Spu	rious emissi	ons						



	RAD	IATED EMISS	IONS							
Graph name:	Emr#25	Т	est conf	iguration	:					
Limit:	FCC CFR47 Part15C	()	/) Avic	7 DV Cn	224					
Class:		((V) - Axis Z - RX Cmax							
		range: [1GHz								
Antenna polarization:	Vertical		BW:	1MHz						
Azimuth:	0° - 360°	V	BW:	3MHz						
(min-100)							FCC/FCC CF	R47 Part150 R47 Part150 erticale)	- Classe: - Moyenne/3.0 - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/	
	Link	made was been been all with the same	organ yarah diperikak Arkah diperikak	gyraddingingingingingingi	W. Alicherton Vond and Volley	Mary Mary Mary Mary Mary Mary Mary Mary	A STATE OF THE STA	_{ne p} ode _{ne p} poddy gl _a ddiae _a gradd	Mary Control of the C	
agh an property has been properly and all places and an expensive states	A Committee of the contract of	Activity many of the second second	April de la companya		White Area and					
Methodulantination										
0										
TGHz		Fréquence (MHz)							12.750	
	Sp	urious emiss	ons							



	RADIA	ATED EMISS	IONS						
Graph name: Emr#			est config	guration	:				
	CFR47 Part15C								
Class:		,	l) - Axis Z		Тах				
	Frequency ra								
	ontaL			1MHz					
Azimuth: 0° - 3	860°	V	BW:	3MHz					
89 dby/min						=	FCC/FCC CFI	R47 Part15C R47 Part15C prizontale)	- Classe: - Moyenne/3.0m/ - Classe: - QCrête/3.0m/ - Classe: - Crête/3.0m/
		المناسع المالية	بحود الخليرا		l l	المرابع	was production of	and the second	Marie Mary Comment of the Comment of
ارسور اور مرسوم براند مورسود براند مورسود و دورسوار و بازر مواد و درسود کارنده است در این داد و درسود و درسود د و استرا در اور درسود و	ત્રિકે માટે કે ત્રિકે કે ત્રિક ભાગમાં આવેલા કે ત્રિકે કે ત્રિક ભાગમાં આવેલા કે ત્રિકે કે ત	artify the description of the state of the s	alantado goberno Lagraphillad	hiphorological and a second and a	Approximately all the second	historial de	philasol (1994) (1994)	P. Nadill (In anil	- Hillian I I.
o Jane		Fréquence (MHz)							12.75GHz
	Spu	rious emissi	ons						



		DIATED EMISSION				
Graph name:	Emr#27 Test configuration:					
Limit:	FCC CFR47 Part150	; (H) - <i>i</i>	(H) - Axis Z - Default Running mode			
oldss.				<u> </u>		
Frequency range: [1GHz - 12.75GHz] Antenna polarization: Horizontal RBW: 1MHz						
Antenna polarization: Azimuth:	0° - 360°	VBW				
Azimutii.	0 - 300	ADAA	. JIVII IZ			
				FCC/FCC CFR47 Part15C - Classe: - Moyenne/3.0m/ FCC/FCC CFR47 Part15C - Classe: - QCrête/3.0m/		
				FCC/FCC CFR47 Part15C - Classe: - Crête/3.0m/ Mes.Peak (Horizontale)		
dBµV/Im				Mes.Avg (Horizontale)		
				Maria de la companio		
		orly a pitche	Ri .	Mary Company of the C		
	Maria Maria	and the state of t	day harry war to be the comment of the comment	and the second s		
	political market political in the contract of	and the state of t	Mr. A. William and a second address and the second			
Marcharl Late & Compatibility Late and the second second	handely and the state of the st					
policy to the work of the property of the second second second second second second	White later As & & Land					
0 IGHz		Fréquence (MHz)		12.75GHz		
		глацияна (мт.с.)				
	· ·	ourious emissions				
	ગ	Jui ious eiilissiolis				



		RADIATED EN	IISSIONS						
Graph name:	aph name: Emr#28			Test configuration:					
Limit:	FCC CFR47 Pa	art15C							
Class:	-		7 (V) - AXIS	s Z - Default Run	ining mode				
	Frequ	uency range: [1	GHz - 12.75	GHz]					
Antenna polarization:	Vertical		RBW:	1MHz					
Azimuth:	0° - 360°		VBW:	3MHz					
disprint					FCC/FCC CFR47 Part15C - Classe: - Moyeme/3.0 FCC/FCC CFR47 Part15C - Classe: - Qcfete/3.0m/ Mes. Peak (Verticale) Mes.Avg (Verticale)				
					The state of the s				
water with the state of the sta	han han han ha ha ha ha han ha	And the second of the second o	Marie de la composito de la co	angelik standari na na sikanada na sakabah dalah masulalah dan dalah masulalah ka	And the second s				
Management and a star a star a									
1GHz									

Spurious emissions



	R	DIATED EMISSIONS					
aph name: Emr#29			Test configuration:				
mit:	FCC CFR47 Part15	C					
ass:		(H) - AX	is XY - Default Runnir	ig mode			
	Frequenc	y range: [1GHz - 12.7	'5GHz]				
ntenna polarization:	Horizontal	RBW:	1MHz				
zimuth:	0° - 360°	VBW:	3MHz				
N/m B2			_	FCC/FCC CFR47 Part15C - Classe: - Ocrête/3.0m/ PCC/FCC CFR47 Part15C - Classe: - Crête/3.0m/ Mes.Peak (Horizontale) Mes.Avg (Horizontale)			
gord of the state		general philosophy and a should a proper house of the control of t	por producing the form of the production of the	ڔ؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞؞			
generally and appropriate propriate and appropriate propriate prop	mary day of training the later and a second of the con-						

Spurious emissions



	RA	DIATED EMISS	IONS					
Graph name:	Emr#30	T	Test configuration:					
Limit:				(V) - Axis XY - Default Running mode				
Class:			/) - AXIS	At - Dela	uit Kunnin	g mode		
	Frequency	/ range: [1GHz	- 12.75	GHz]				
Antenna polarization:	Vertical	R	BW:	1MHz				
Azimuth:	0° - 360°	V	BW:	3MHz				
Slavion St.					_	FCC/FCC CFF		
		الماران المناول المراول المراو	mandalonilondol nondalonilondol	والمراد والمداواله المرباية والمستون	Haragan Maran Maran	والمواسية الطامية المربطة الم المراكزة المراكزة ا	Aller	
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Market Land Land And Land								
0 1GHz		Fréquence (MHz)					12.75	
		·						
		purious emiss	000					



11. UNCERTAINTIES CHART

Type de mesure / Kind of measurement	Incertitude élargie laboratoire / Wide uncertainty laboratory (k=2) ± x	Incertitude limite du CISPR / CISPR uncertainty limit ± y
Mesure des perturbations conduites en tension sur le réseau d'énergie Measurement of conducted disturbances in voltage on the power port	3.57 dB	3.6 dB
Mesure des perturbations conduites en tension sur le réseau de télécommunication Measurement of conducted disturbances in voltage on the telecommunication port.	3.28 dB	A l'étude / Under consid.
Mesure des perturbations discontinues conduites en tension Measurement of discontinuous conducted disturbances in voltage	3.47 dB	3.6 dB
Mesure des perturbations conduites en courant Measurement of conducted disturbances in current	2.90 dB	A l'étude / Under consid.
Mesure du champ électrique rayonné sur le site en espace libre de Moirans Measurement of radiated electric field on the Moirans open area test site	5.07 dB	5.2 dB

Les valeurs d'incertitudes calculées du laboratoire étant inférieures aux valeurs d'incertitudes limites établies par la norme, la conformité de l'échantillon est établie directement par les niveaux limites applicables. / The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the standard. The conformity of the sample is directly established by the applicable limits values.