

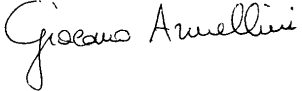




# PRIMA

RICERCA & SVILUPPO

## RAPPORTO DI PROVA / TEST REPORT

Rif./Ref.No. FCCTR_151062B-1	Data / Date: 19/01/2016	Pagine / Pages :45
Scopo delle prove / Test object :	Prove di tipo in accordo a / Type test according to <b>47 CFR Part 74</b>	
Richiedente / Applicant :	AEB Industriale S.r.l. Via Brodolini, 8 – 40056 Crespellano (BO) – ITALY Tel. +39 051 969870	
Persona di riferimento / Applicant's referee :	Mr. Andrea Molinari ( <a href="mailto:a.molinari@ssc-info.it">a.molinari@ssc-info.it</a> )	
Marchio commerciale / Trademark :		
Fabbricante / Manufacturer :	AEB Industriale S.r.l.	
Prodotto / Product :	<b>Digital Wireless Bodyworn Microphone</b>	
Modello / Model :	<b>MOVING D</b>	
FCC ID:	<b>2ADDV-MOVINGDB</b>	
Data ricevimento campioni / Date of test samples receipt :	25/03/2015	
Campioni verificati / No. of tested samples	1	
Data verifiche / Testing date :	31/07-10/08/2015-19/01/2016	
Sito di prova / Testing site :	Prima Ricerca & Sviluppo Via Campagna - 92 I-22020 FALOPPIO CO FCC test registration number: 421808	
Esito delle valutazioni / Assessment results :	<b>CONFORME / COMPLIANT</b>	
Verifiche effettuate da / Verifications carried out by :	Andrea Bortolotti Tecnico Laboratorio EMC e RADIO/ EMC and RADIO Laboratory technician	
Approvato / Approved by :	Giacomo ARMELLINI Responsabile Laboratorio EMC e RADIO/ EMC and RADIO Laboratory Manager	

I risultati delle prove riportati nel presente rapporto di prova si riferiscono solo ai campioni esaminati./

The test results reported in this test report shall refer only to the samples tested

Questo Report non può essere riprodotto in modo parziale, salvo espresso autorizzazione scritta da parte del Laboratorio /

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**PRIMA RICERCA & SVILUPPO**

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### 0 RELEASE CONTROL RECORD

TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
FCCTR_151062B-0	Original release	19/10/2015
FCCTR_151062B-1	Editorial Change	19/01/2016

## 1 TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

### 1.1 EUT Identification

<b>DESCRIPTION</b>	Digital Wireless Bodyworn Microphone
<b>TYPE</b>	MOVING D
<b>TRADEMARK</b>	
<b>S/N</b>	Not present (prototype)
<b>HVIN</b>	PST812B
<b>FVIN</b>	Not available
<b>FCC ID</b>	2ADDV-MOVINGDB
<b>MANUFACTURER</b>	AEB Industriale Srl
<b>COUNTRY OF MANUFACTURER</b>	Italy
<b>SINGLE UNIT OR SYSTEM</b>	Single Unit

### 1.2 EUT technical information

<b>FREQUENCY RANGE:</b>	470.1MHz to 698MHz
<b>FREQUENCY BAND:</b>	470.1MHz to 608MHz 614MHz to 698MHz
<b>MODULATION:</b>	Digital Multilevel modulation: FM - 4FSK, 2 bit / symbol - 304 Kbps, max freq dev +/- 55 kHz Symbol time = 6.61 uS
<b>ANTENNA:</b>	External dedicated
<b>POWER SUPPLY:</b>	3Vdc powered by internal battery (2x1,5Vdc type AA alkaline battery)
<b>TEMPERATURE RANGE:</b>	-30°C to + 55°C

### 1.3 Modification introduced in the EUT

- None

## 1.4 Additional information

Test setup and EUT photos are included in test report:

TSupPhotos\_151062B-0

## 2 REFERENCE STANDARDS FOR PERFORMED TESTS

47 CFR Part 74	Title 47 of the Code of Federal Regulations; Chapter I part 74 – Experimental radio, auxiliary. Special broadcast and other program distribution services
ANSI/TIA-603-C-2004	Land Mobile FM or PM – Communications Equipment – Measurement and Performance Standards

## 3 EUT OPERATING CONDITIONS

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item “Operating condition of the equipment under test”

<b>Operating condition</b>	<b>Description</b>
<b>#1</b>	Continuous Modulated Transmission (modulation type: FM Digital modulation)
<b>#2</b>	Continuous Unmodulated Transmission

## 4 SUMMARY OF TEST RESULTS

TRANSMITTER PARAMETERS (TX)								
TEST SPECIFICATION CLAUSE	TEST	TEMPERATURE CONDITIONS	POWER SOURCE VOLTAGES	PASS	FAIL	NA	NP	RESULTS
FCC 47 CFR § 74.861 (e)(1)(i)	Output power	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	COMPLIANT
FCC 47 CFR § 74.861 (e)(4)	Frequency Stability	Nominal	Extreme	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	COMPLIANT
		Extreme	Nominal					
FCC 47 CFR § 2.1049 § 74.861 (e)(5)	Occupied bandwidth	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	COMPLIANT
FCC 47 CFR § 74.861 (e)(6)(i)(ii)	Unwanted radiation (spectrum mask)	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	COMPLIANT
FCC 47 CFR § 74.861 (e)(3)	Modulation Characteristics	Nominal	Nominal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	---
FCC 47 CFR § 74.861 (e)(6)(iii)	Field strength of spurious radiation Transmitter unwanted emissions	Nominal	Nominal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	COMPLIANT

**Note:** NA = Not Applicable; NP = Not Performed

**TEST  
1.**

**TRANSMITTER OUTPUT POWER**

REFERENCE DOCUMENT FCC 47 CFR§ 74.861 (e)(1)(i)

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TEST METHOD</b>	ANSI/TIA-603-C (2004) 2.2.1 FCC CFR 47 Part 2. 1046
<b>TYPE OF MEASUREMENT</b>	CONDUCTED
<b>TEST EQUIPMENT</b>	Spectrum AnalyzerRohde&Schwarz mod. FSP40
<b>TEST PERFORMED BY</b>	Andrea Bortolotti
<b>TESTING DATE</b>	31/07/2015

<b>TEST CONDITIONS:</b>		<b>MEASURED</b>
Ambient temperature :	23°C±5°C	24°C
Ambient humidity :	25 - 75 %rH	45%
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	960mbar
Voltage		3Vdc

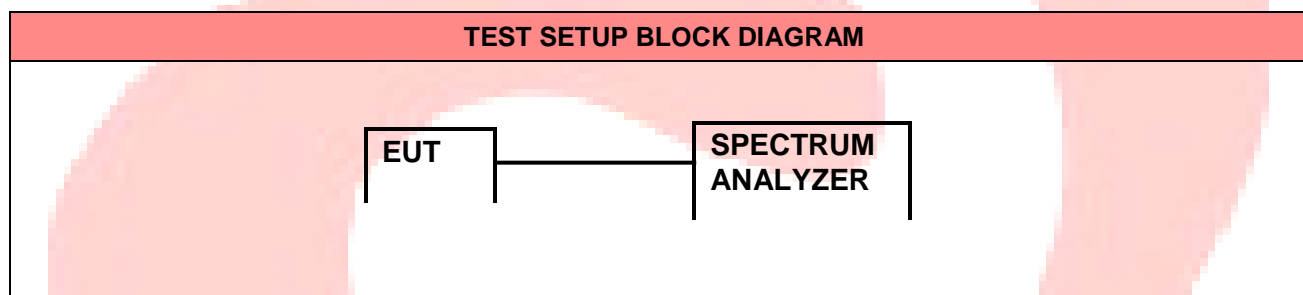
<b>OPERATING CONDITION</b>	#2
----------------------------	----

<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
--------------------	--------------------------

MEASUREMENT PARAMETER	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	300kHz (see note 1)
Video bandwidth:	1MHz
Span:	2 MHz
Trace-Mode:	Max. hold

**Note 1:** The output power has been measured with a RBW of 300kHz because the resolution bandwidth must always be wider than the signal it is measuring, for an output power test.”

LIMITS
47 CFR § 74.861 (e)(1)(i)
Maximum transmitter power
470-608 and 614-698 MHz bands—250 mW



### TEST RESULTS

FREQUENCY (MHz)	TRANSMITTER OUTPUT POWER (dBm)	TRANSMITTER OUTPUT POWER (mW)	LIMIT (mW)	RESULT
470.1	17.7	58.9	250	PASS
608.0	22.1	162.2	250	PASS
698.0	13.7	23.4	250	PASS

**PLOTS OF THE MEASUREMENTS**

FREQ: 470.1MHz		FREQ: 608.0MHz	
FREQ: 698.0MHz		Frequency (MHz)	MaxPeak (dBm)
		470.1	17.7
		608.0	22.1
		698.0	13.7



**TEST  
2.**

**FREQUENCY STABILITY**

REFERENCE DOCUMENT FCC 47 CFR§ 74.861 (e)(4)

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TEST METHOD</b>	ANSI/TIA-603-C (2004) 2.2.2 FCC CFR 47 Part 2.1055
<b>TYPE OF MEASUREMENT</b>	CONDUCTED
<b>TEST EQUIPMENT</b>	Spectrum AnalyzerRohde&Schwarz mod. FSP40 Climatic Chamber
<b>TEST PERFORMED BY</b>	Andrea Bortolotti
<b>TESTING DATE</b>	03/08/2015; 19/01/2016

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C±5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar
Voltage	See test results

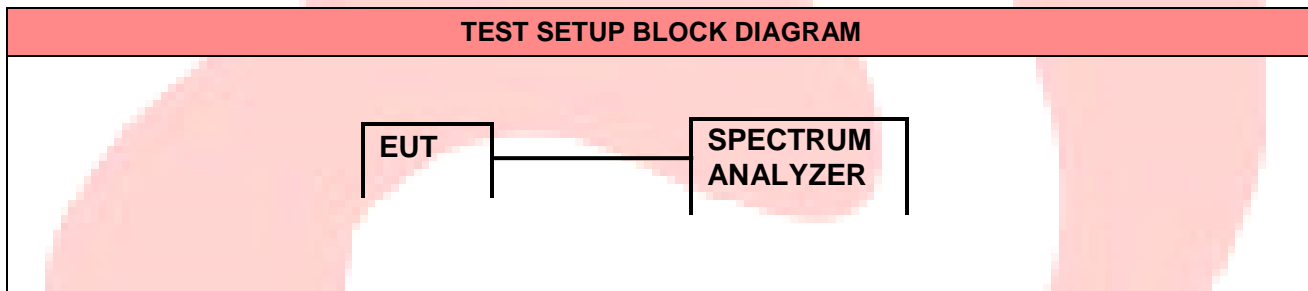
<b>OPERATING CONDITION</b>	#2
----------------------------	----

<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
--------------------	--------------------------

## FREQUENCY ERROR VS TEMPERATURE

MEASUREMENT PARAMETER	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 Hz
Video bandwidth:	100 Hz
Span:	1 kHz
Trace-Mode:	Max. hold
Voltage (nominal)	3Vdc

LIMITS
FCC 47 CFR§ 74.861 (e)(4)
The frequency tolerance of the transmitter shall be 0.005 percent (50ppm)



### TEST RESULTS

Freq: 470.1MHz

TEMPERATURE (°C)	FREQUENCY (MHz)	DEVIATION (Hz)	DEVIATION (ppm)	LIMIT (ppm)	RESULT
-30°C	470.099998875	-1.125	-0.002	50	PASS
-20°C	470.099998750	-1.250	-0.003	50	PASS
-10°C	470.099968755	-31.245	-0.066	50	PASS
0°C	470.100054785	54.785	0.117	50	PASS
10°C	470.100055685	55.685	0.118	50	PASS
20°C	470.100065885	65.885	0.140	50	PASS
30°C	470.100035475	35.475	0.075	50	PASS
40°C	470.100028975	28.975	0.062	50	PASS
50°C	470.100028795	28.795	0.061	50	PASS

Freq: 608.0MHz

TEMPERATURE (°C)	FREQUENCY (MHz)	DEVIATION (Hz)	DEVIATION (ppm)	LIMIT (ppm)	RESULT
-30°C	607.999968975	-31.025	-0.051	50	PASS
-20°C	607.999949785	-50.215	-0.083	50	PASS
-10°C	607.999945685	-54.315	-0.089	50	PASS
0°C	608.000057495	57.495	0.095	50	PASS
10°C	608.000047955	47.955	0.079	50	PASS
20°C	608.000057895	57.895	0.095	50	PASS
30°C	608.000041275	41.275	0.068	50	PASS
40°C	608.000032545	32.545	0.054	50	PASS
50°C	608.000026585	26.585	0.044	50	PASS

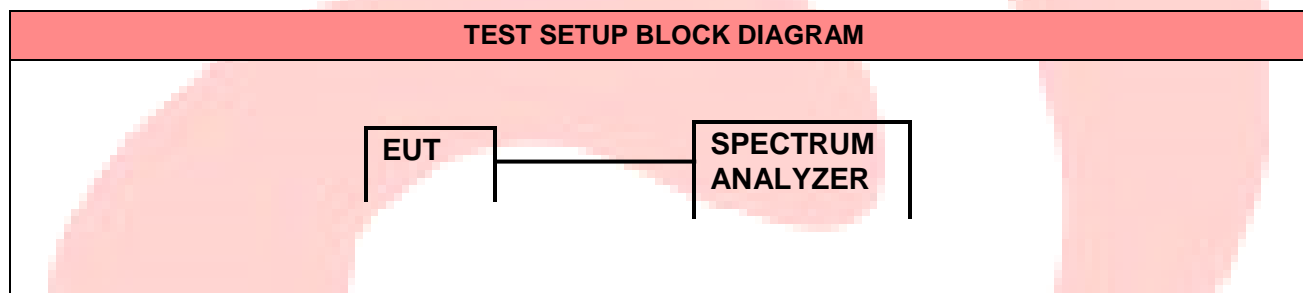
Freq: 698.0MHz

TEMPERATURE (°C)	FREQUENCY (MHz)	DEVIATION (Hz)	DEVIATION (ppm)	LIMIT (ppm)	RESULT
-30°C	697.999986840	-13.160	-0.019	50	PASS
-20°C	697.999947000	-53.000	-0.076	50	PASS
-10°C	697.999946875	-53.125	-0.076	50	PASS
0°C	698.000045575	45.575	0.065	50	PASS
10°C	697.999946785	-53.215	-0.076	50	PASS
20°C	697.999947865	-52.135	-0.075	50	PASS
30°C	697.999947685	-52.315	-0.075	50	PASS
40°C	697.999983245	-16.755	-0.024	50	PASS
50°C	698.000054255	54.255	0.078	50	PASS

### FREQUENCY ERROR VS VOLTAGE

MEASUREMENT PARAMETER	
Detector:	Peak
Sweep time:	Auto
Resolutionbandwidth:	100 Hz
Video bandwidth:	100 Hz
Span:	1 kHz
Trace-Mode:	Max. hold
Temperature	22°C

LIMITS
FCC 47 CFR§ 74.861 (e)(4)
The frequency tolerance of the transmitter shall be 0.005 percent (50ppm)



### TEST RESULTS

CHANNEL FREQUENCY (MHz)	VOLTAGE (V)	MEASURED FREQUENCY (MHz)	DEVIATION (Hz)	DEVIATION (PPM)	LIMIT (ppm)	RESULT
470.1	2.0	470.100070145	70.145	0.149	50	PASS
	2.7	470.100067840	67.840	0.144	50	PASS
	3V	470.100056870	56.870	0.121	50	PASS
608.0	2.0	608.000071020	71.020	0.117	50	PASS
	2.7	608.000068950	68.950	0.113	50	PASS
	3V	608.000062450	62.450	0.103	50	PASS
698.0	2.0	698.000057520	57.520	0.082	50	PASS
	2.7	698.000054705	54.705	0.078	50	PASS
	3V	698.000045070	45.070	0.065	50	PASS

**TEST  
3.**

**OCCUPIED BANDWIDTH**

REFERENCE DOCUMENT FCC 47 CFR§2.1049 §74.861 (e)(5)

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TEST METHOD</b>	FCC CFR 47 Part 2.1049
<b>TYPE OF MEASUREMENT</b>	CONDUCTED
<b>TEST EQUIPMENT</b>	Spectrum Analyzer Rohde &Schwarz mod. FSP40
<b>TEST PERFORMED BY</b>	Andrea Bortolotti
<b>TESTING DATE</b>	10/08/2015

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C±5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar
Voltage :	3Vdc

**OPERATING CONDITION (Rif. Section 3) :#1** (modulation type: Digital Multilevel)

**TEST RESULTS: COMPLIANT**

**MEASUREMENT PARAMETER**

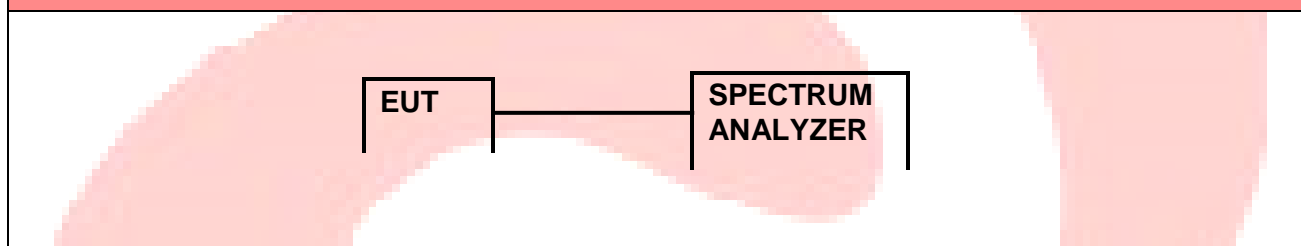
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3kHz
Video bandwidth:	3kHz
Span:	see plots
Trace-Mode:	Max. hold

**LIMITS**

Occupied bandwidth 99%. Other than single sideband or independent sideband transmitters – when modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. The input level shall be established at the frequency of maximum response of the audio modulating circuit.

The operating bandwidth shall not exceed 200 kHz

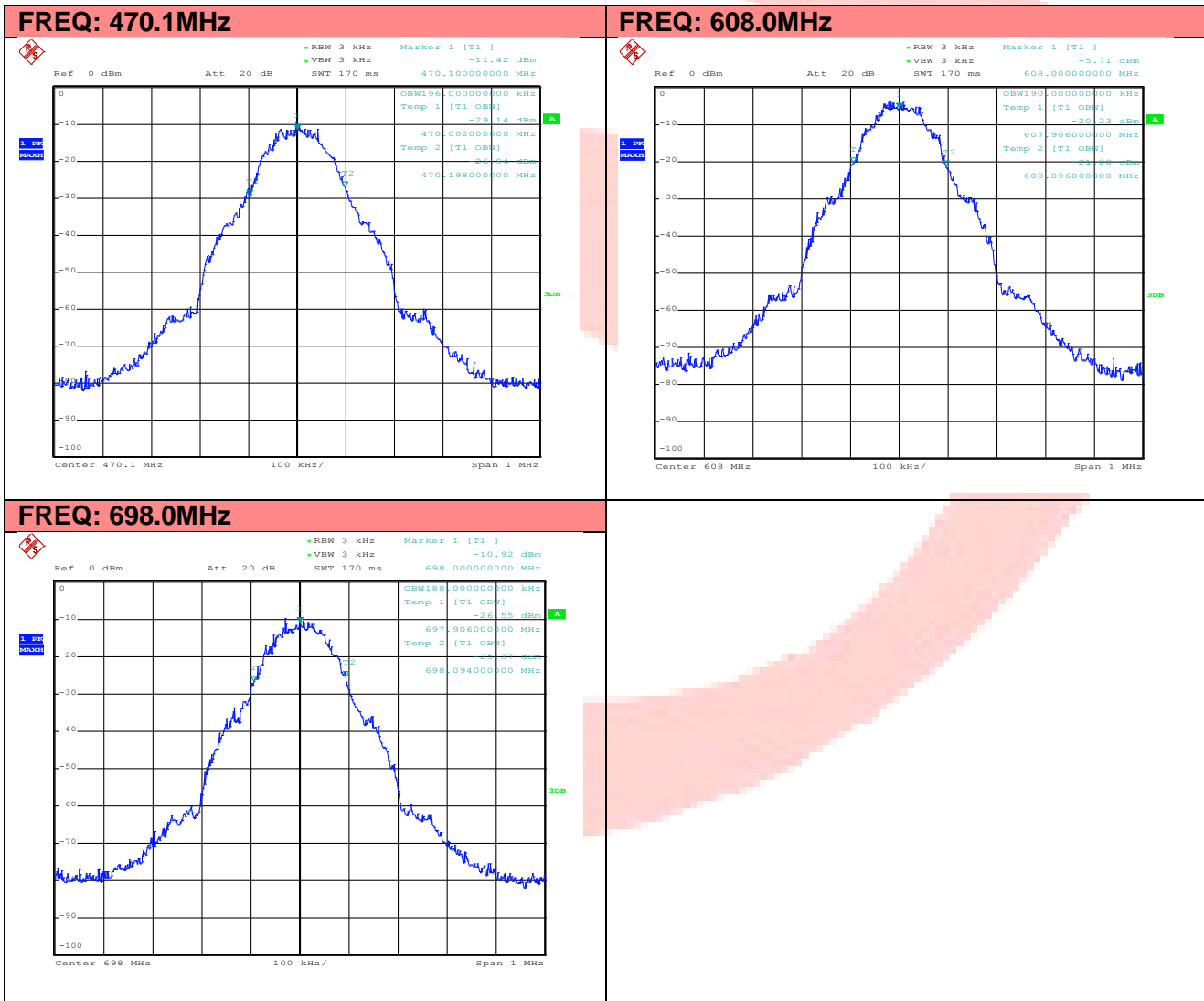
**TEST SETUP BLOCK DIAGRAM**



### TEST RESULTS

Frequency (MHz)	99% dB bandwidth (kHz)	Limit (kHz)	RESULT
470.1	196	200	PASS
608.0	190	200	PASS
698.0	188	200	PASS

### PLOTS OF THE MEASUREMENTS





**TEST  
4.**

**UNWANTED RADIATION (SPECTRUM MASK)**

REFERENCE DOCUMENT FCC 47 CFR§ 74.861 (e)(6)(i)(ii)

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TEST METHOD</b>	ANSI/TIA-603-C (2004) 2.2.11 FCC CFR 47 Part 2. 1051
<b>TYPE OF MEASUREMENT</b>	CONDUCTED
<b>TEST EQUIPMENT</b>	Spectrum AnalyzerRohde&Schwarz mod. FSP40
<b>TEST PERFORMED BY</b>	Andrea Bortolotti
<b>TESTING DATE</b>	04/08/2015; 19/01/2016

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C±5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar
Voltage :	3Vdc

**OPERATING CONDITION (Rif. Section 3) :#1**(modulation type: Digital Multilevel)

**TEST RESULTS: COMPLIANT**

**MEASUREMENT PARAMETER**

Detector:	Peak
Sweep time:	Auto
Resolutionbandwidth:	3kHz
Video bandwidth:	3kHz
Span:	see plots
Trace-Mode:	Max. hold

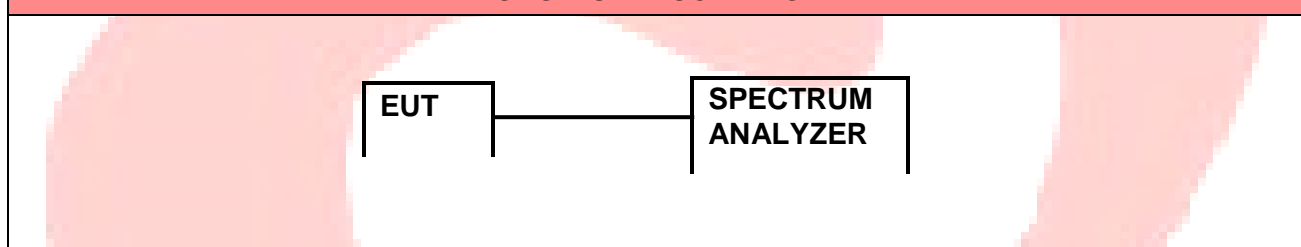
**LIMITS**

47 CFR § 74.861

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

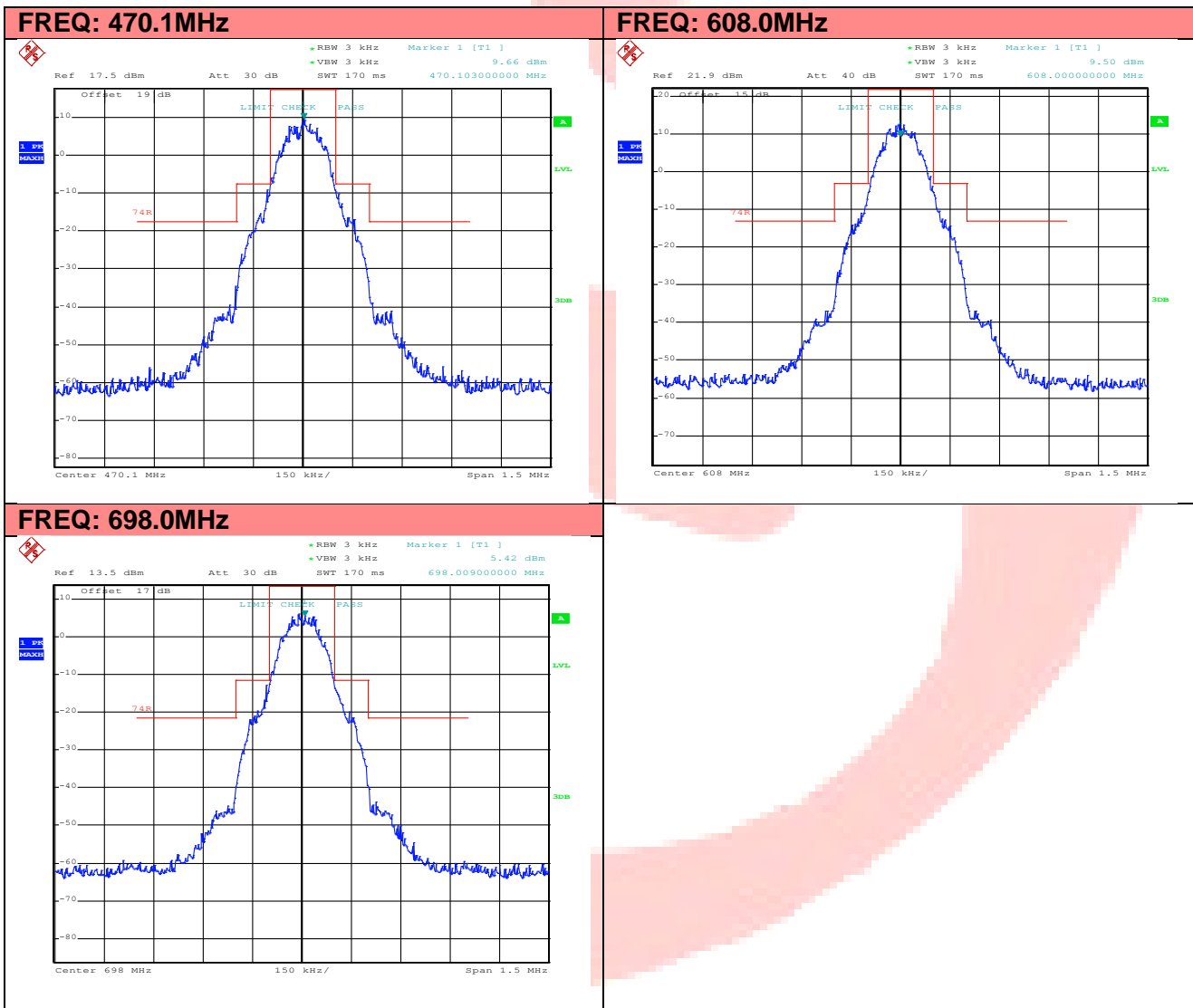
- (i) On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB;
- (ii) On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB;
- (iii) On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least  $43+10\log_{10}$  (mean output power in watts) dB.

**TEST SETUP BLOCK DIAGRAM**

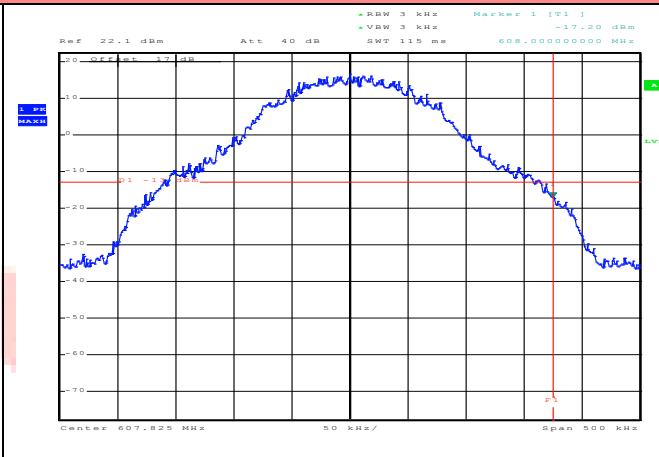
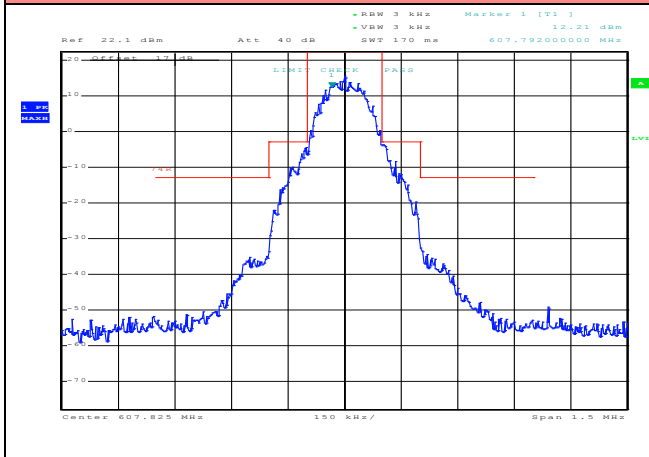


Note: radiated output power measurement has been performed in order to set the properly reference level

### PLOTS OF THE MEASUREMENTS



**TOP CHANNEL USED: FREQ 607.825MHz**



**TEST  
5.**

**MODULATION CHARACTERISTICS**

REFERENCE DOCUMENT FCC 47 CFR§ 74.861 (e)(3)

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TEST METHOD</b>	FCC CFR 47 Part 2. 1047
<b>TYPE OF MEASUREMENT</b>	CONDUCTED
<b>TEST EQUIPMENT</b>	Audio Analyzer Rohde&Schwarz mod. UPD
<b>TEST PERFORMED BY</b>	Andrea Bortolotti
<b>TESTING DATE</b>	05/08/2015

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C±5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar
Voltage :	3Vdc

**OPERATING CONDITION (Rif. Section 3) : ---**

**TEST RESULTS: NOT APPLICABLE**

**LIMITS**

47 CFR § 74.861

**TEST SETUP BLOCK DIAGRAM**



**TEST RESULTS**

**NOT APPLICABLE: DIGITAL MODULATION SYSTEM**

**TEST  
6.**

**RADIATED SPURIOUS EMISSIONS**

REFERENCE DOCUMENT FCC 47 CFR§ 74.861 (e)(6)(iii)

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Anechoic chamber with a conductive ground plane. Distance 3m
<b>TEST METHOD</b>	ANSI/TIA-603-C (2004) 2.2.12 FCC CFR 47 Part 2. 1053
<b>TYPE OF MEASUREMENT</b>	RADIATED
<b>TEST EQUIPMENT</b>	EMI Receiver Rohde&Schwarz mod. ESU40 Bi-log antenna CHASE mod. CBL6111C Log-periodica Broadband Antenna R&S mod. HL050 Loop Antenna R&S mod. HFH2-Z2
<b>TEST PERFORMED BY</b>	Andrea Bortolotti
<b>TESTING DATE</b>	06/08/2015

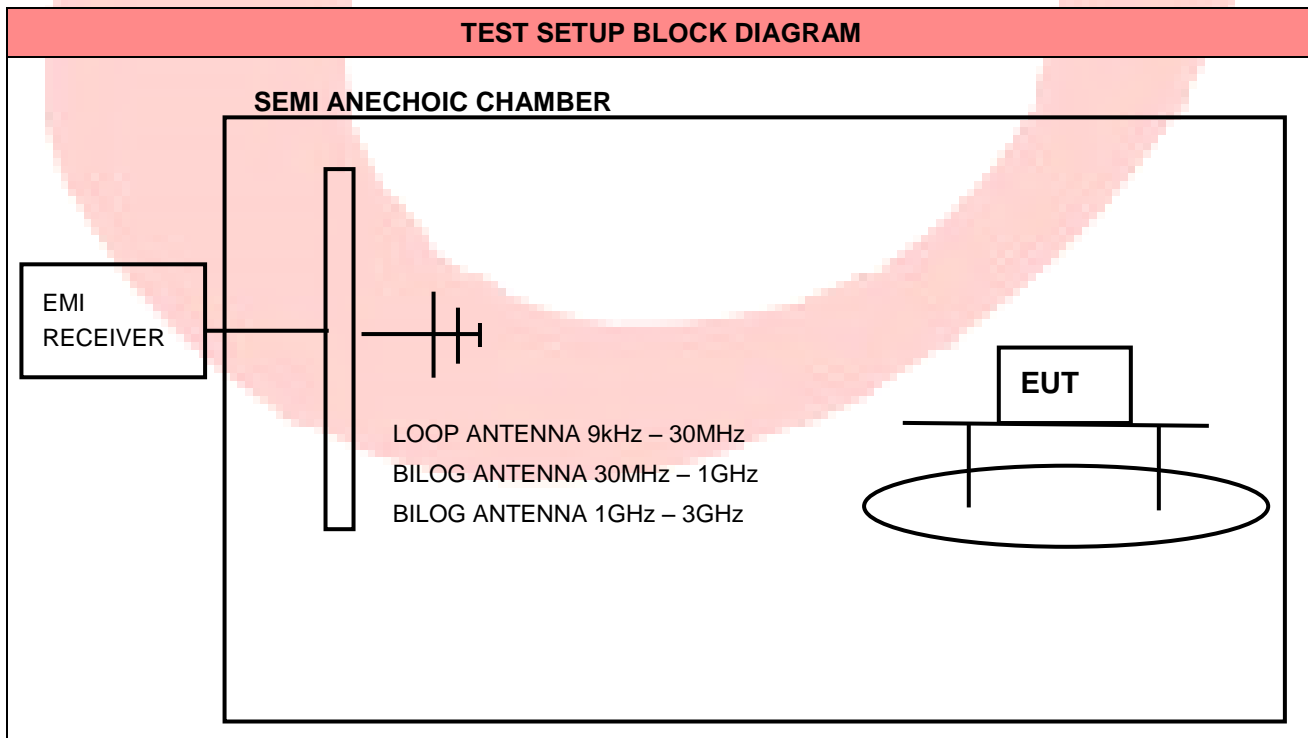
TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C±5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar
Voltage :	3Vdc

**OPERATING CONDITION (Rif. Section 3) :#1**

**TEST RESULTS: COMPLIANT**

MEASUREMENT PARAMETER	
Detector:	Peak / Quasi Peak
Resolution bandwidth:	9kHz (f<150kHz) 100kHz (150kHz< f< 30MHz) 100kHz (30MHz< f <1GHz) 1MHz (f>1GHz)
Video bandwidth:	200Hz (f<150kHz) 9kHz (150kHz< f< 30MHz) 100kHz (30MHz< f <1GHz) 1MHz (f>1GHz)
Span:	see plots
Trace-Mode:	Max. hold

LIMITS
47 CFR § 74.861 (e)(6)(iii)
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule: (i) On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB; (ii) On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB; (iii) On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least 43+10log <sub>10</sub> (mean output power in watts) dB.





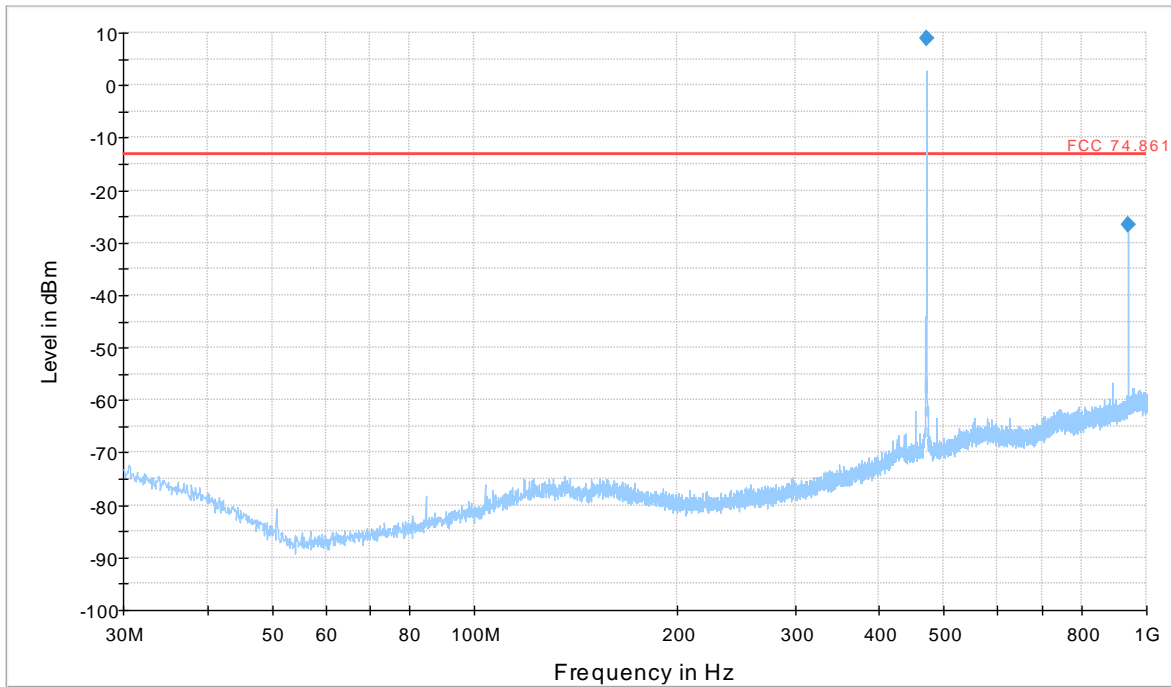
**FREQUENCY RANGE 9kHz - 30MHz – Freq. 470.1MHz**

**VERTICAL POLARIZATION**

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

**FREQUENCY RANGE 30MHz – 1GHz – Freq. 470.1MHz**

**VERTICAL POLARIZATION**



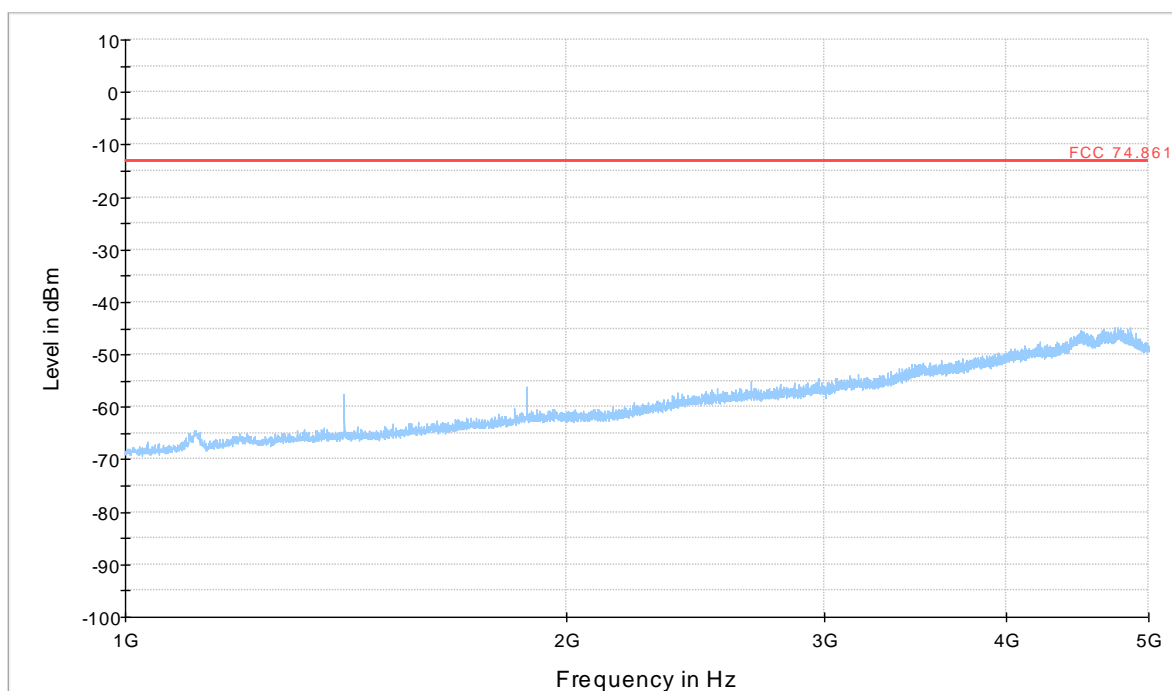
Blue trace Peak detector, Blue Marker Peak detector

**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Limit (dBm)	Margin (dB)	Note
470.089000	8.9	259.0	V	2.0	-13.0	-21.9	Carrier
940.248000	-26.5	103.0	V	2.0	-13.0	13.5	2 <sup>nd</sup> harmonic

**FREQUENCY RANGE 1GHz – 5GHz – Freq. 470.1MHz**

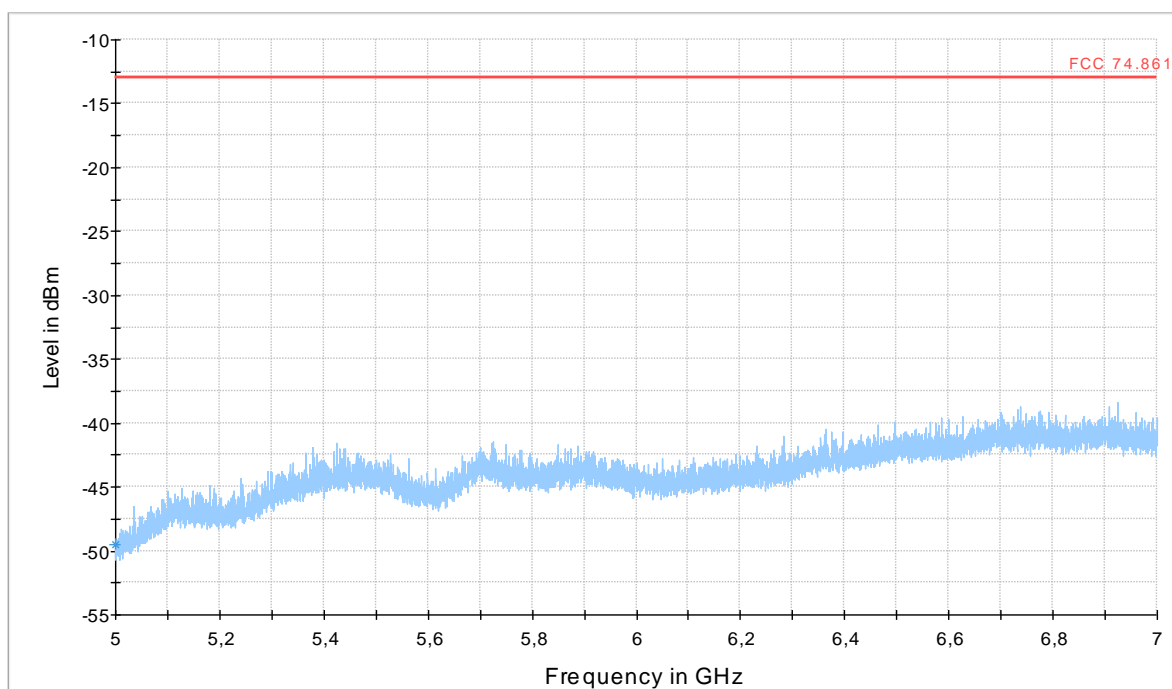
**VERTICAL POLARIZATION**



Blue trace Peak detector

**FREQUENCY RANGE 5GHz-7GHz – Freq. 470.1MHz**

**VERTICAL POLARIZATION**



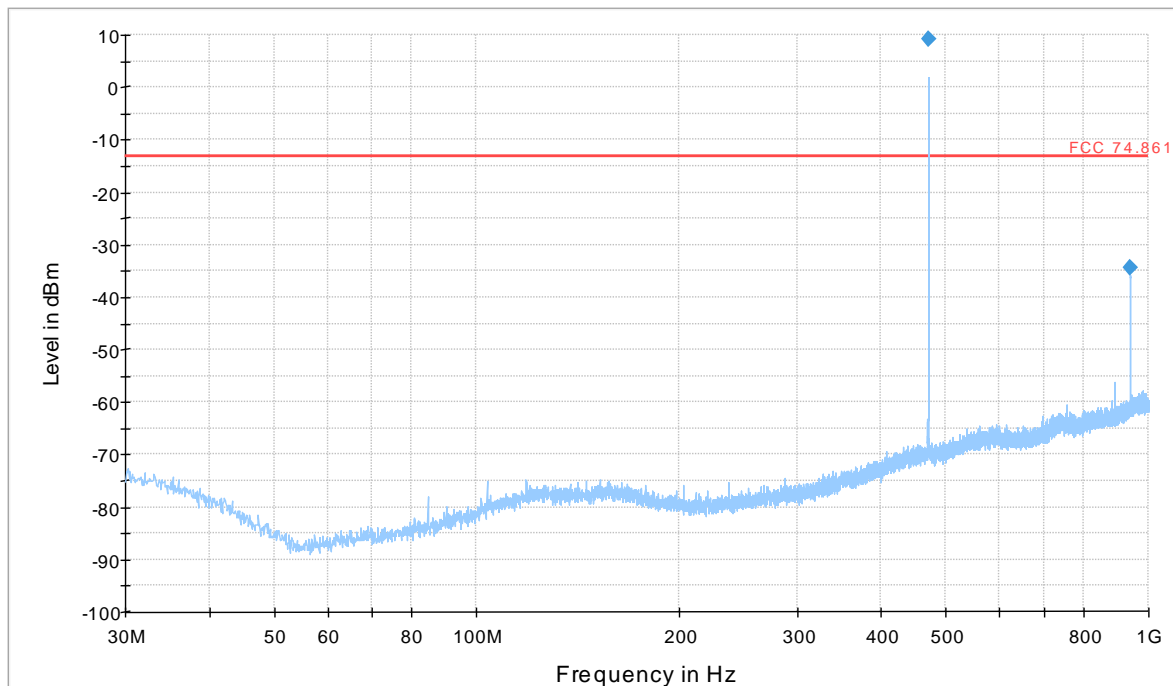
**FREQUENCY RANGE 9kHz - 30MHz – Freq. 470.1MHz**

**HORIZONTAL POLARIZATION**

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

**FREQUENCY RANGE 30MHz – 1GHz – Freq. 470.1MHz**

**HORIZONTAL POLARIZATION**



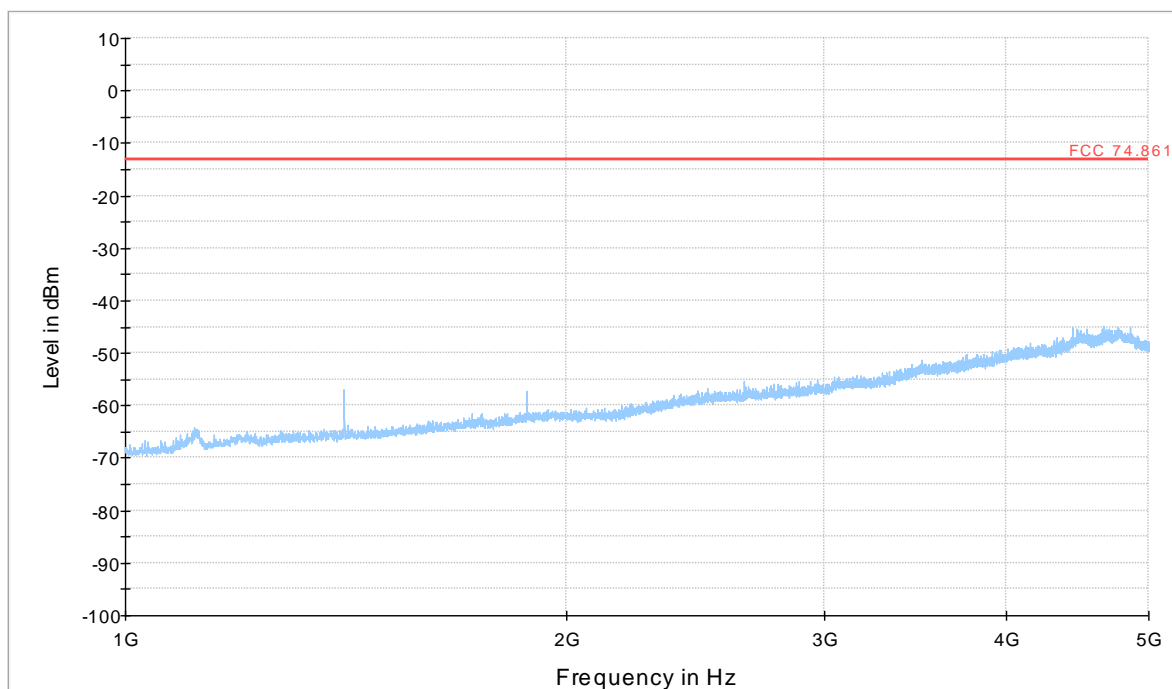
Blue trace Peak detector, Blue Marker Peak detector

**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Limit (dBm)	Margin (dB)	Note
469.992000	9.1	104.0	H	179.0	-13.0	-22.1	Carrier
940.151000	-34.4	104.0	H	2.0	-13.0	21.4	2 <sup>nd</sup> harmonic

**FREQUENCY RANGE 1GHz – 5GHz – Freq. 470.1MHz**

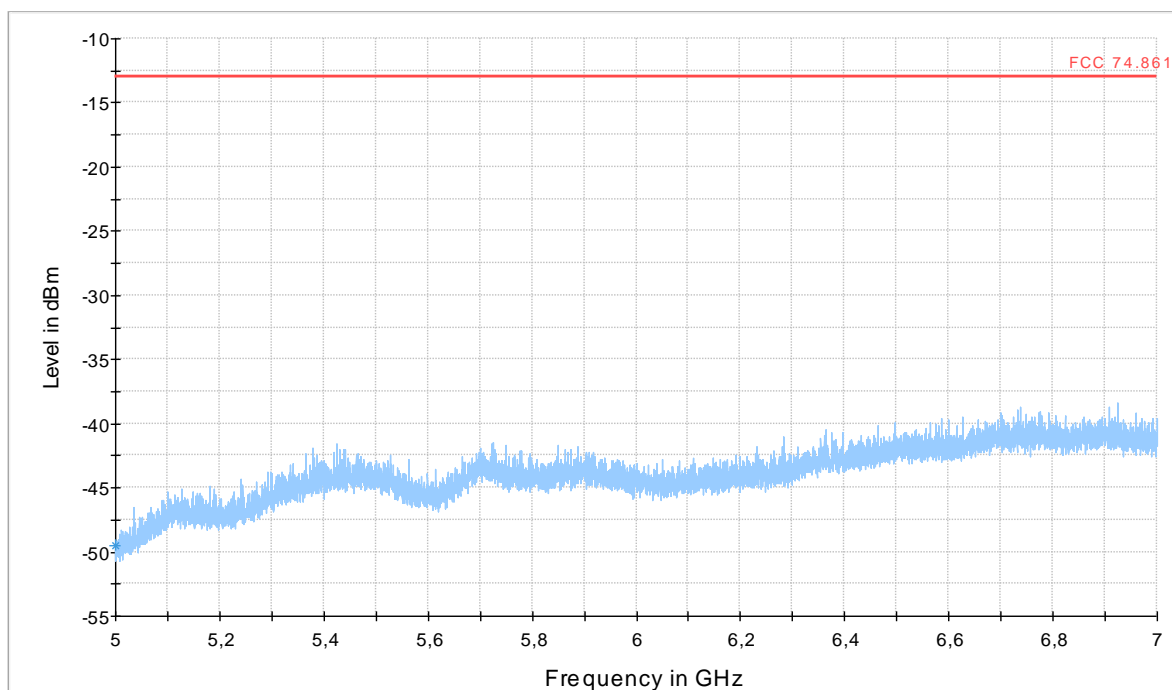
**HORIZONTAL POLARIZATION**



Blue trace Peak detector

**FREQUENCY RANGE 5GHz-7GHz – Freq. 470.1MHz**

**HORIZONTAL POLARIZATION**





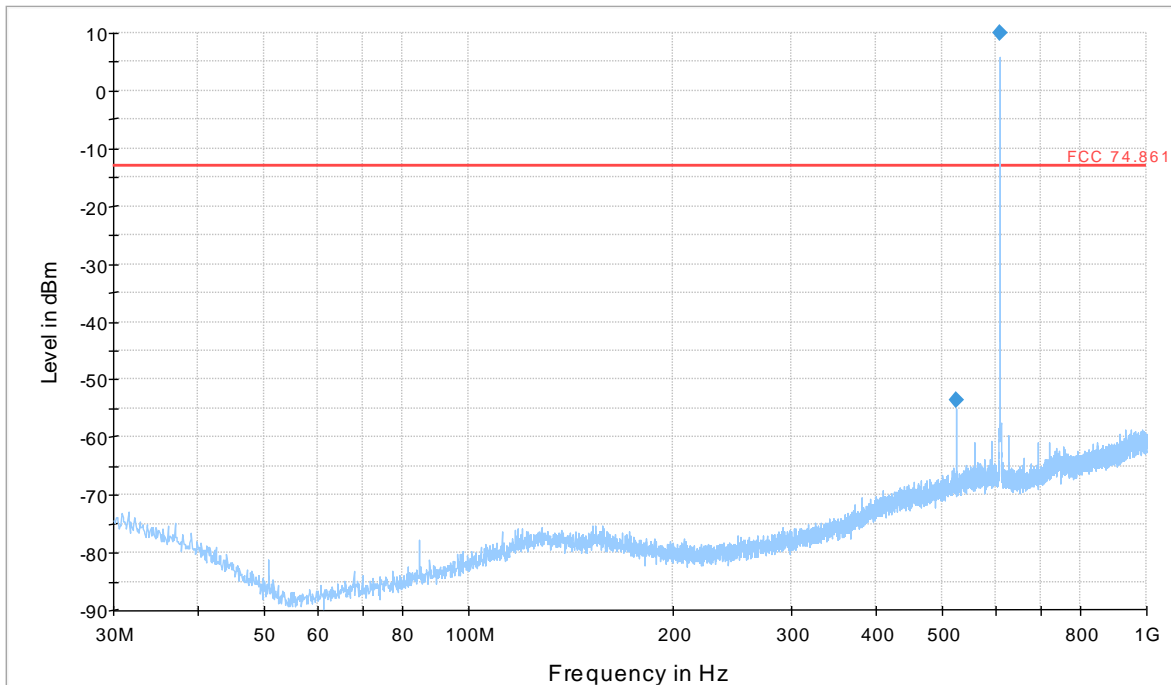
**FREQUENCY RANGE 9kHz - 30MHz – Freq. 608.0MHz**

**VERTICAL POLARIZATION**

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

**FREQUENCY RANGE 30MHz – 1GHz – Freq. 608.0MHz**

**VERTICAL POLARIZATION**



Blue trace Peak detector, Blue Marker Peak detector

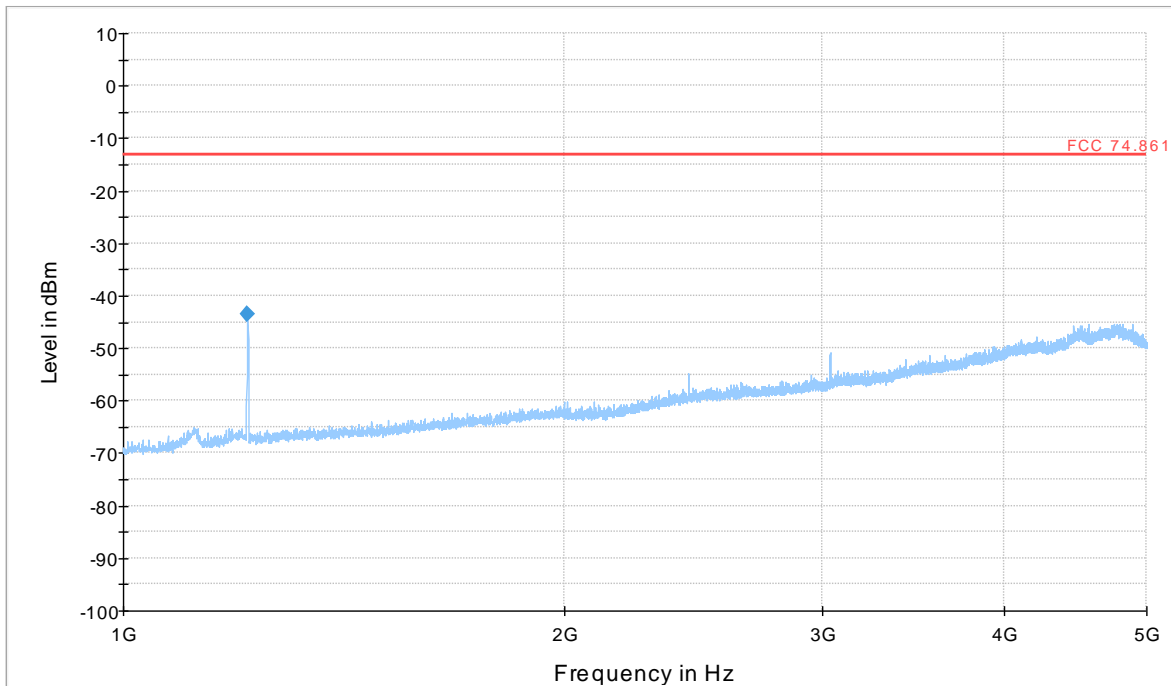
**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Limit (dBm)	Margin (dB)	Note
523.342000	-53.6	103.0	V	0.0	-13.0	40.6	---
608.023000	10.0	259.0	V	0.0	-13.0	-23.0	Carrier



**FREQUENCY RANGE 1GHz – 5GHz – Freq. 608.0MHz**

**VERTICAL POLARIZATION**



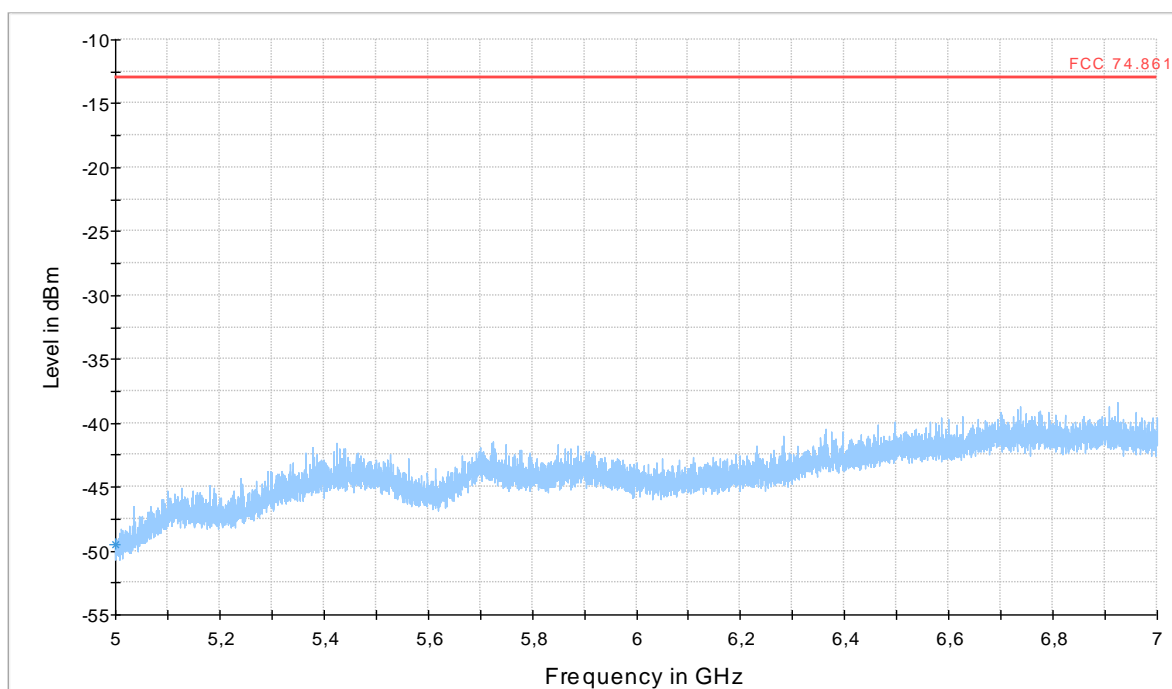
Blue trace Peak detector

**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBm)	Note
1216.000000	-43.6	103.0	V	182.0	30.6	-13.0	2 <sup>nd</sup> harmonic

**FREQUENCY RANGE 5GHz-7GHz – Freq. 608MHz**

**VERTICAL POLARIZATION**



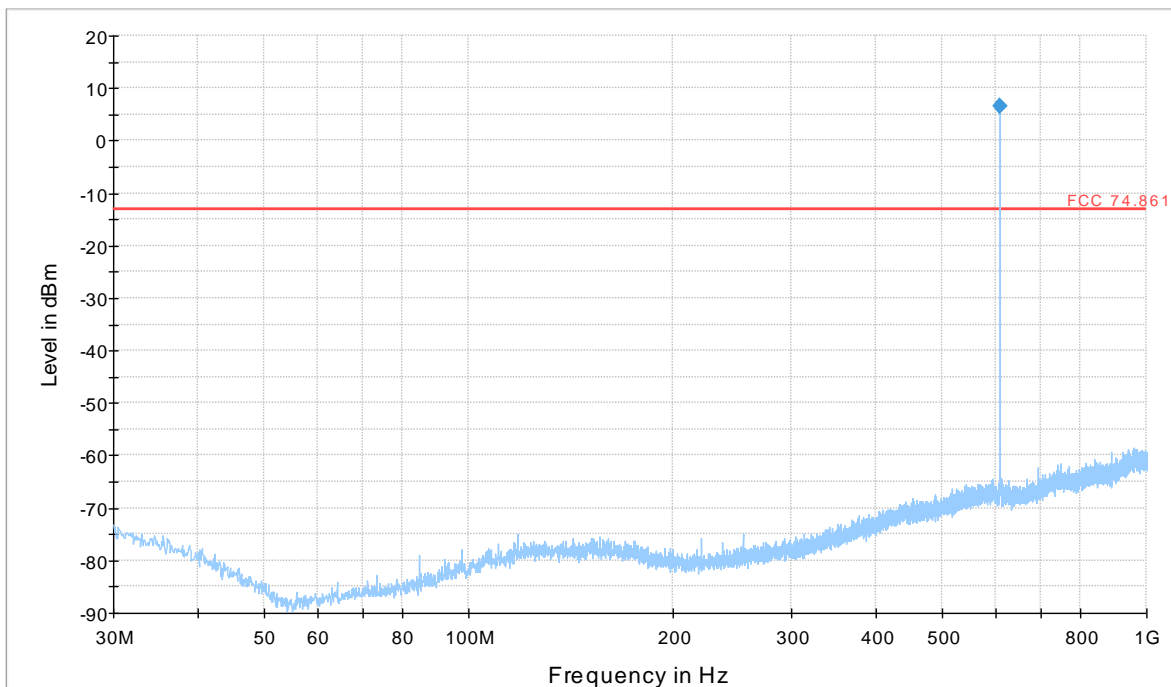
**FREQUENCY RANGE 9kHz - 30MHz– Freq. 608.0MHz**

**HORIZONTAL POLARIZATION**

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

**FREQUENCY RANGE 30MHz – 1GHz– Freq. 608.0MHz**

**HORIZONTAL POLARIZATION**



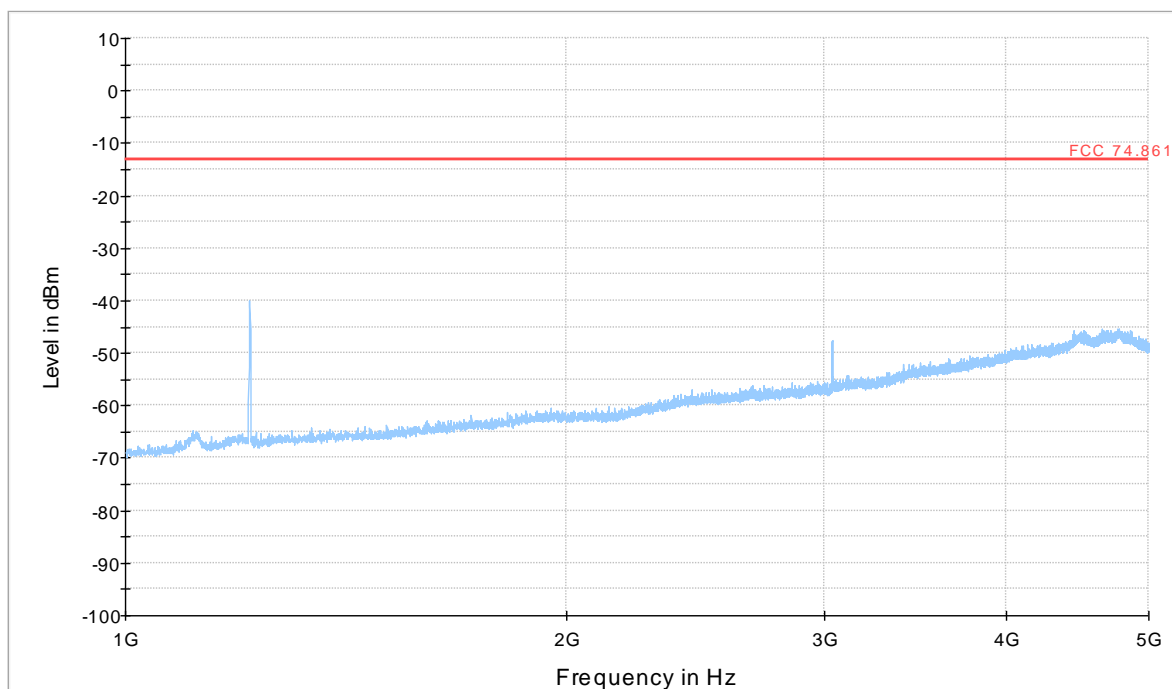
Blue trace Peak detector, Blue Marker Peak detector

**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBm)	Note
607.926000	6.6	100.0	H	0.0	-19.6	-13.0	Carrier

**FREQUENCY RANGE 1GHz – 5GHz – Freq. 608.0MHz**

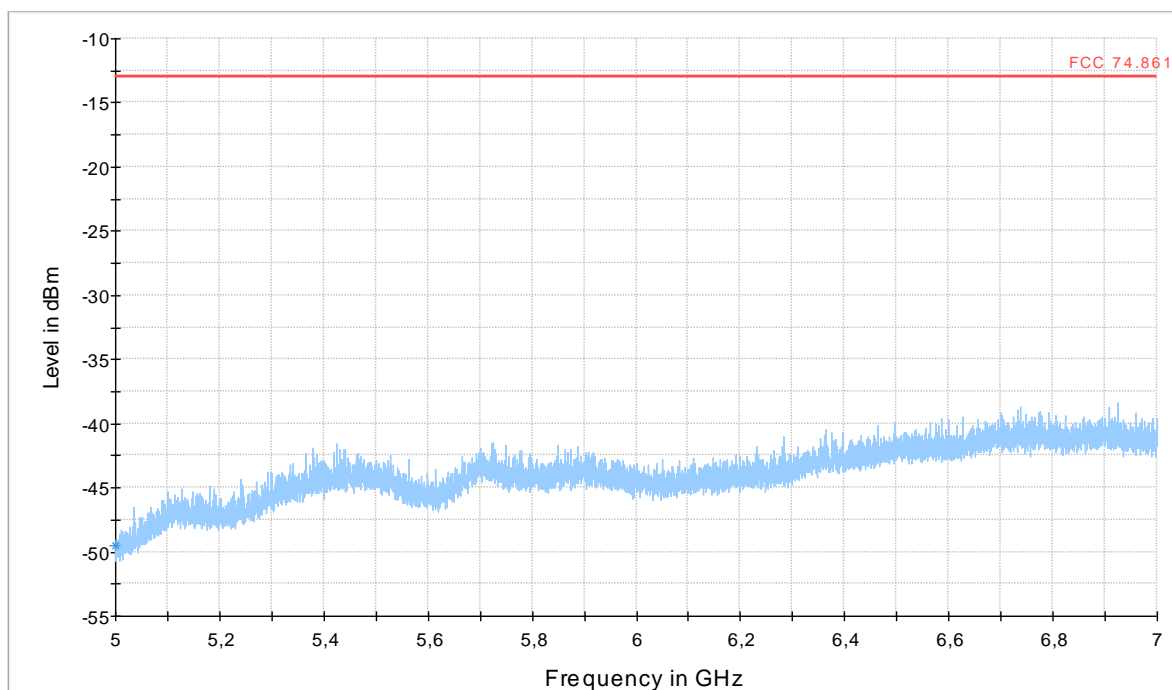
**HORIZONTAL POLARIZATION**



Blue trace Peak detector

**FREQUENCY RANGE 5GHz-7GHz – Freq. 608MHz**

**HORIZONTAL POLARIZATION**





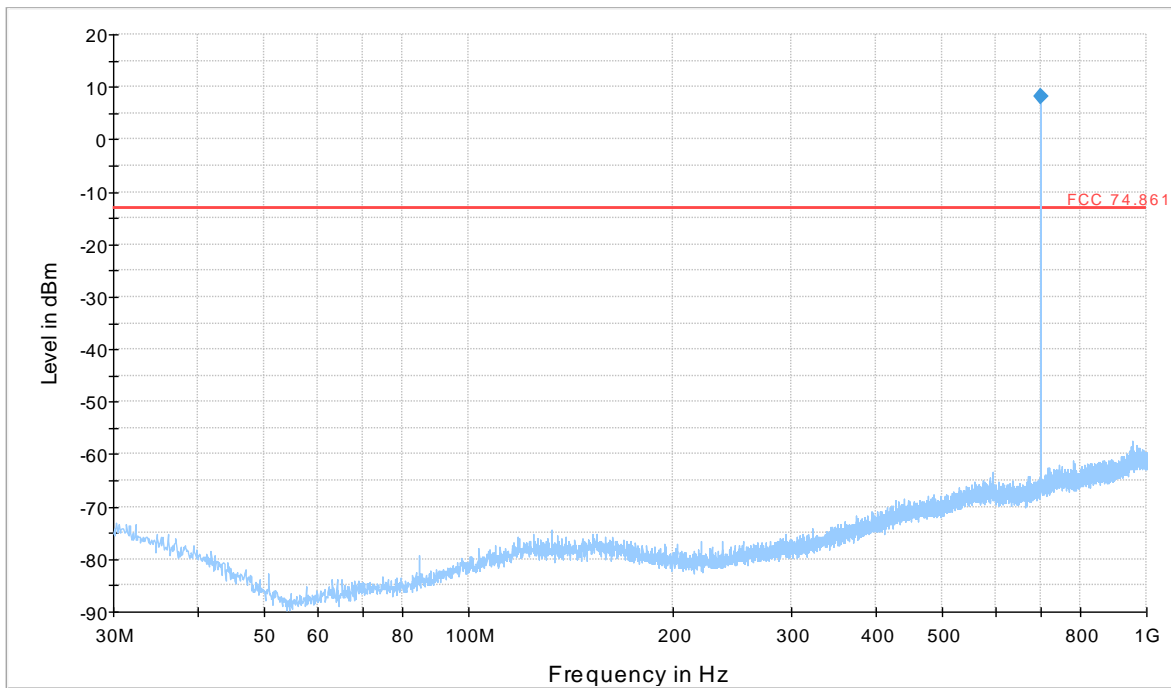
**FREQUENCY RANGE 9kHz - 30MHz – Freq. 698.0MHz**

**VERTICAL POLARIZATION**

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

**FREQUENCY RANGE 30MHz – 1GHz – Freq. 698.0MHz**

**VERTICAL POLARIZATION**



Blue trace Peak detector, Blue Marker Peak detector

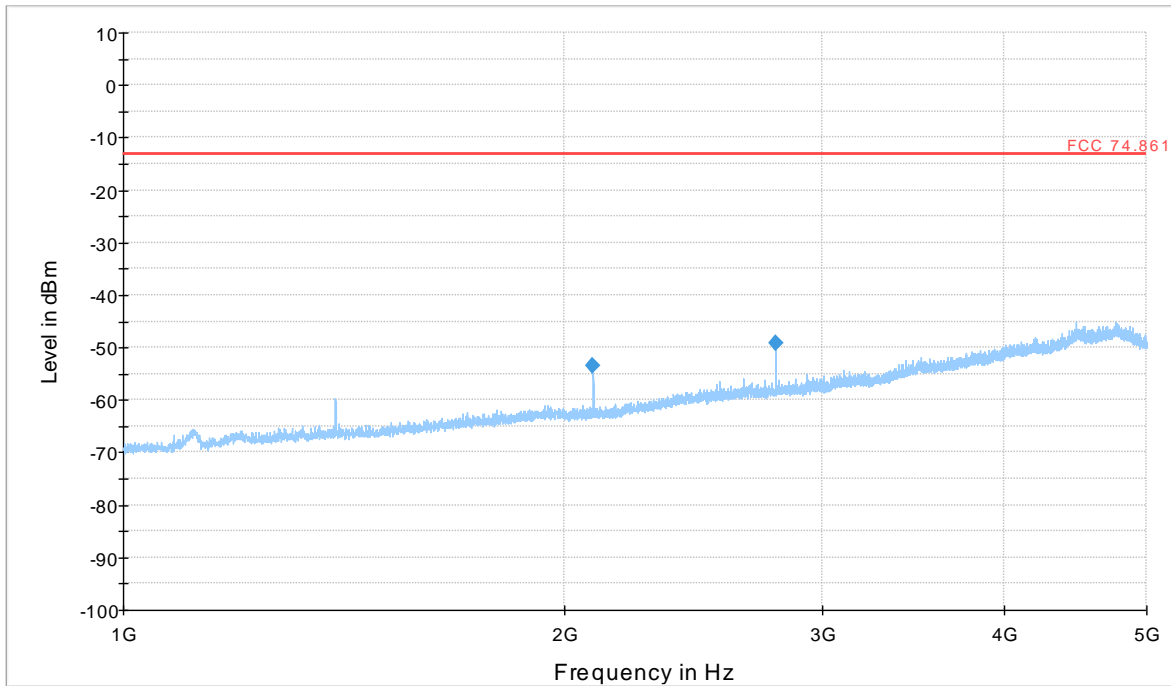
**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBm)	Note
697.942000	8.2	101.0	V	0.0	-21.2	-13.0	Carrier

**FREQUENCY RANGE 1GHz – 5GHz – Freq. 698.0MHz**

**VERTICAL POLARIZATION**

EN300422\_spurious\_sweep\_OPEN



Blue trace Peak detector, Blue Marker Peak detector

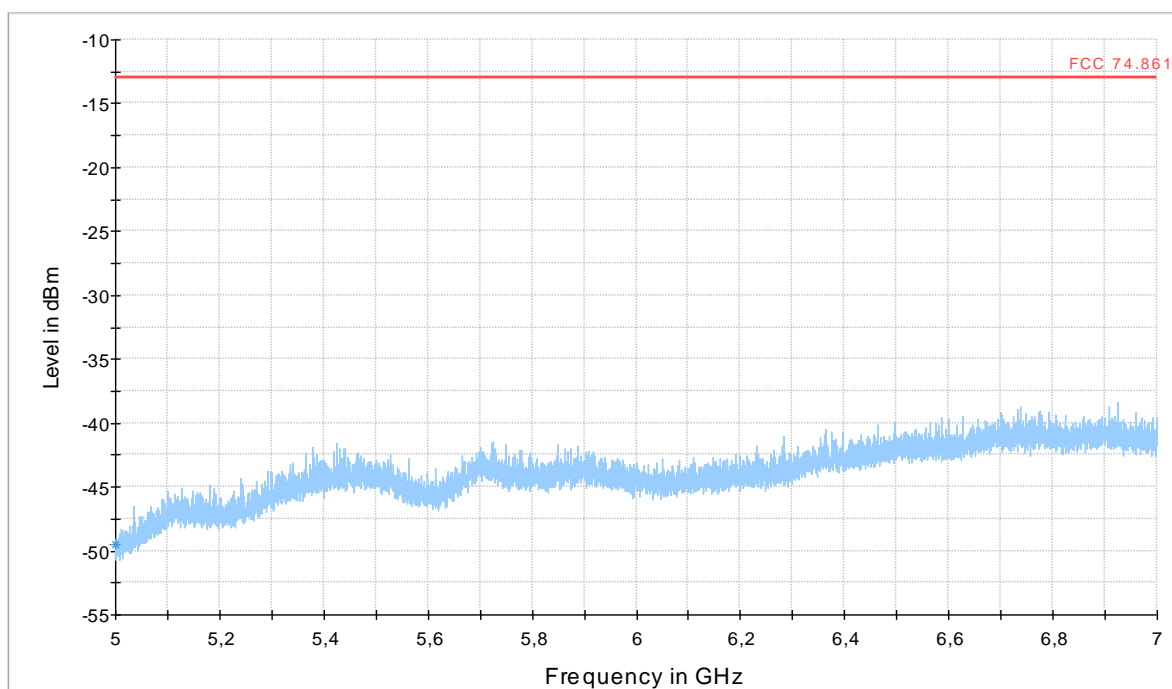
**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBm)	Note
2094.000000	-53.5	103.0	V	180.0	40.5	-13.0	2094.000000
2792.000000	-49.3	103.0	V	270.0	36.3	-13.0	2792.000000



**FREQUENCY RANGE 5GHz-7GHz – Freq. 698MHz**

**VERTICAL POLARIZATION**



**FREQUENCY RANGE 9kHz - 30MHz – Freq. 698.0MHz**

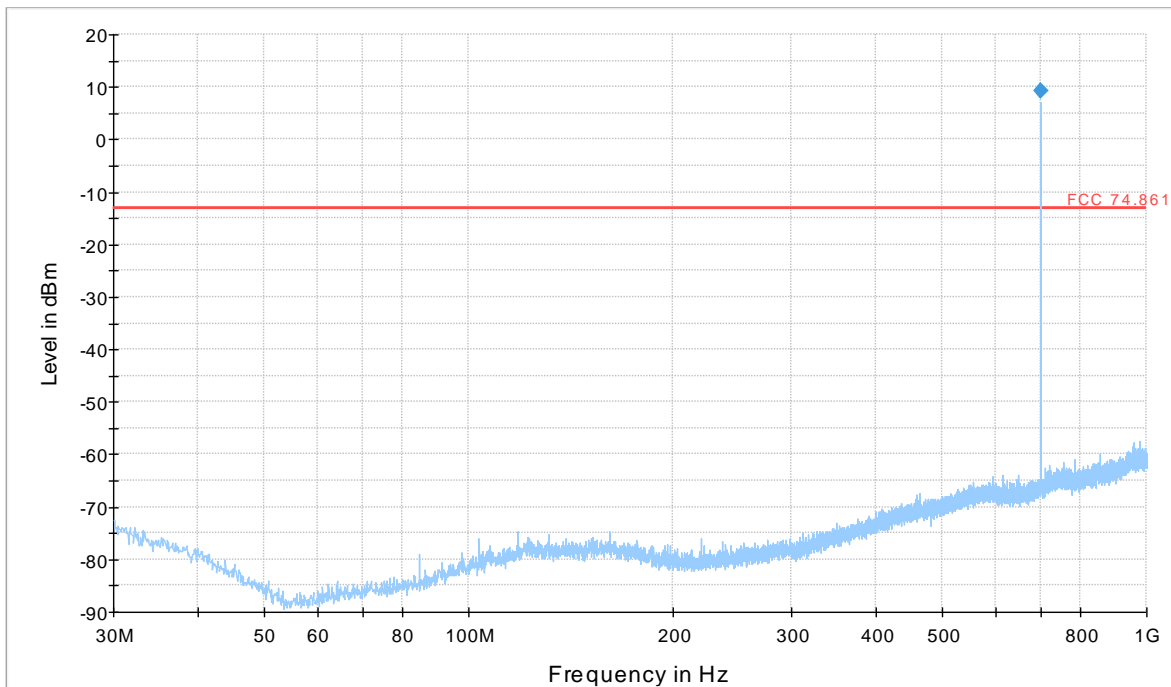
**HORIZONTAL POLARIZATION**

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

**FREQUENCY RANGE 30MHz – 1GHz – Freq. 698.0MHz**

**HORIZONTAL POLARIZATION**

Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector



Blue trace Peak detector, Blue Marker Peak detector

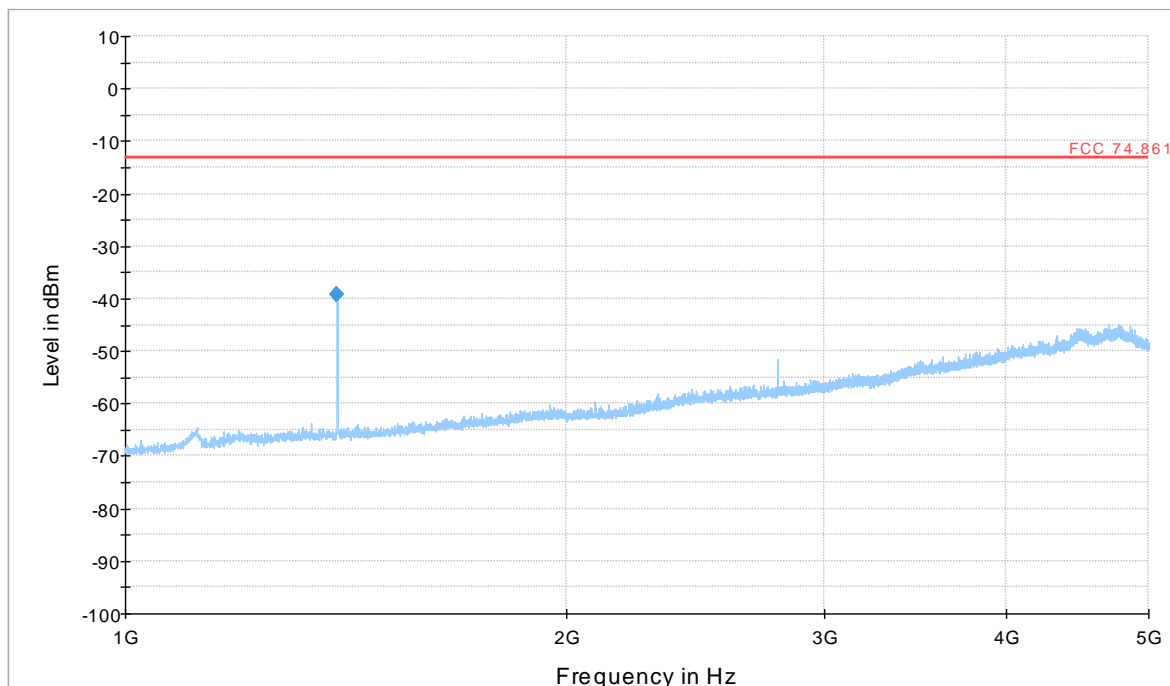
**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBm)	Note
697.942000	9.3	105.0	H	0.0	-22.3	-13.0	Carrier

**FREQUENCY RANGE 1GHz – 5GHz – Freq. 698.0MHz**

**HORIZONTAL POLARIZATION**

EN300422\_spurious\_sweep\_OPEN



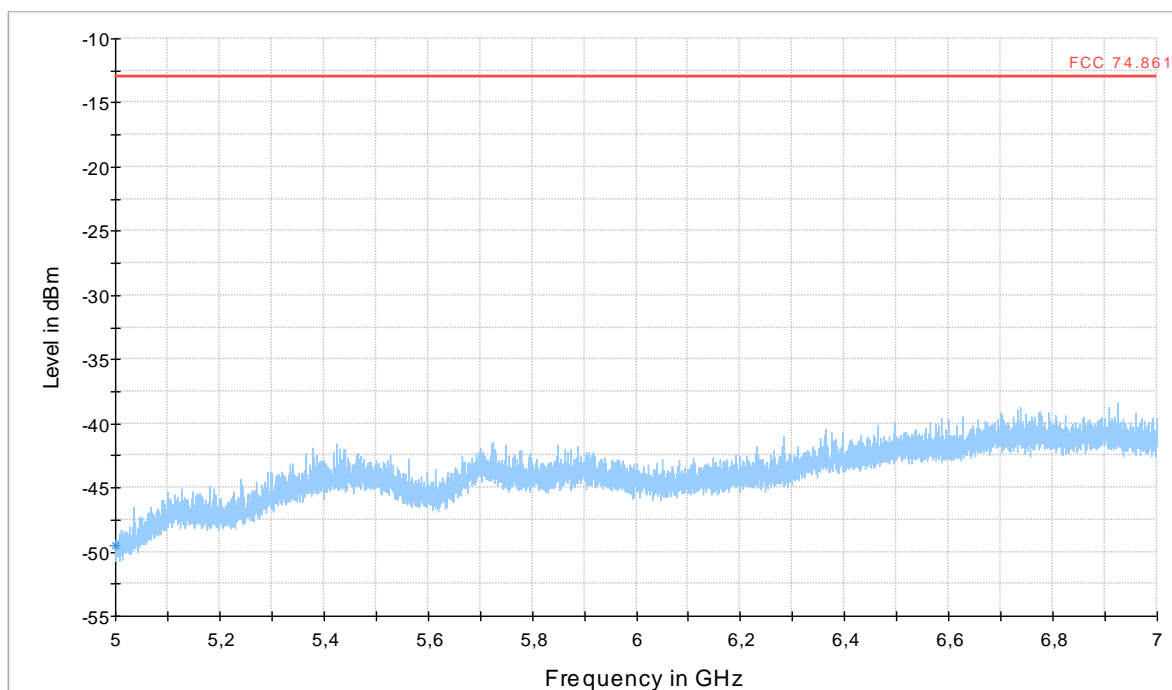
Blue trace Peak detector, Blue Marker Peak detector

**Result**

Frequency (MHz)	Peak (dBm)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBm)	Note
1396.000000	-39.2	103.0	H	180.0	26.2	-13.0	2 <sup>nd</sup> harmonic

**FREQUENCY RANGE 5GHz-7GHz – Freq. 698MHz**

**HORIZONTAL POLARIZATION**



## 5 LIST OF EQUIPMENT USED

EQUIPMENT	IDENTIFICATION NUMBER	CAL. DUE	CAL. INTERVAL
EMI TEST RECEIVER	EMC.359	MARCH.2016	1 YEAR
RF SEMI-ANECHOIC CHAMBER (CSSA)	EMC.191	JAN. 2016	1 YEAR
AUDIO ANALYZER	TLC.006	FEB 2016	1 YEAR
BILOG ANTENNA	EMC.023	JUN 2016	3 YEAR
LOG PERIODICA ANTENNA	EMC.391	DEC 2016	3 YEAR
SPECTRUM ANALYZER	EMC.332	APR.2016	1 YEAR
CLIMATIC CHAMBER	EMC.110	APR 2016	1 YEAR