


FCC TEST REPORT FCC 47 CFR Part 15C Industry Canada RSS-210 Digital transmission systems operating within the 2400 – 2483.5MHz band	
Report Reference No.	G0M-1109-1387-TFC247W-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	<div style="display: flex; justify-content: center; align-items: center;">   </div> <p style="text-align: center; margin-top: 5px;"> A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A </p>
Applicant's name	lesswire AG
Address	Rudower Chaussee 30 12489 Berlin GERMANY
Test specification:	
Standard	47 CFR Part 15C RSS-210, Issue 8, 2010-12 RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
Equipment under test (EUT):	
Product description	WLAN/Bluetooth Module
Model No.	AN00K73534
Hardware version	2.3
Firmware / Software version	Test FW 10.0.3.63
	FCC-ID: PV7-WIBEAR-SF-STA IC: 7738A-WIBEARSFSTA
Test result	Passed

Possible test case verdicts:

- neither assessed nor tested: N/N
- required by standard but not appl. to test object.....: N/A
- required by standard but not tested.....: N/T
- not required by standard for the test object: N/R
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

Testing:

Date of receipt of test item: 2011-11-21

Date (s) of performance of tests: 2011-11-28 - 2011-12-02

Compiled by: Antje Bartusch

Tested by (+ signature).....: Wilfried Treffke 
(Testing Manager)

Approved by (+ signature): Jens Zimmermann 
(Test Lab Manager)

Date of issue: 2012-04-16

Total number of pages.....: 145

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Additional comments:

Class II permissive change tests are performed to show compliance of the modular transmitter with the FCC rules taking into account the changes stated in the class II permissive change letter.

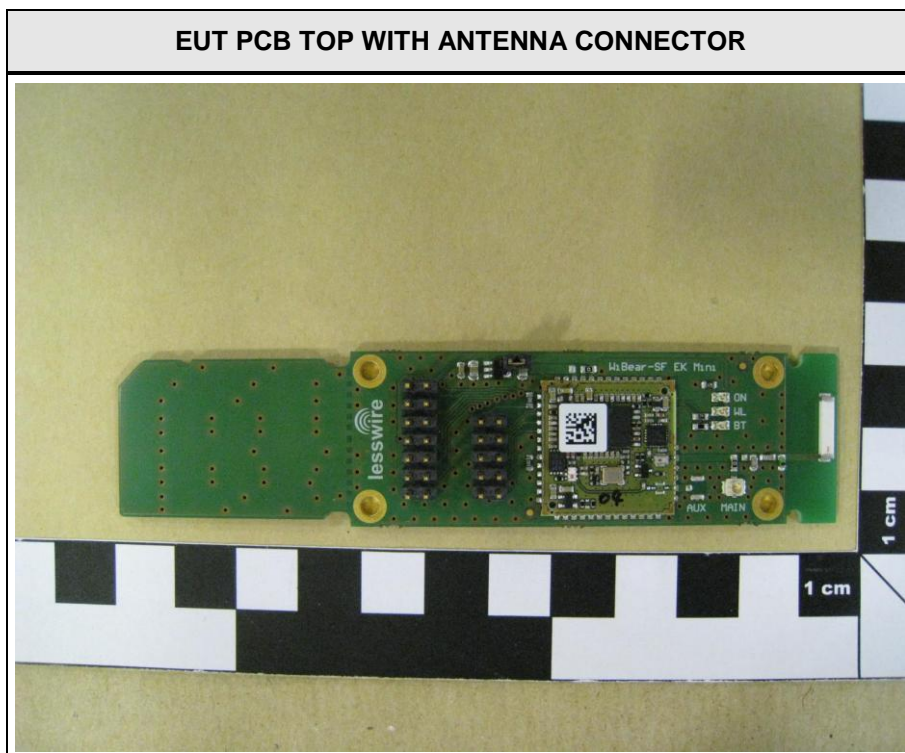
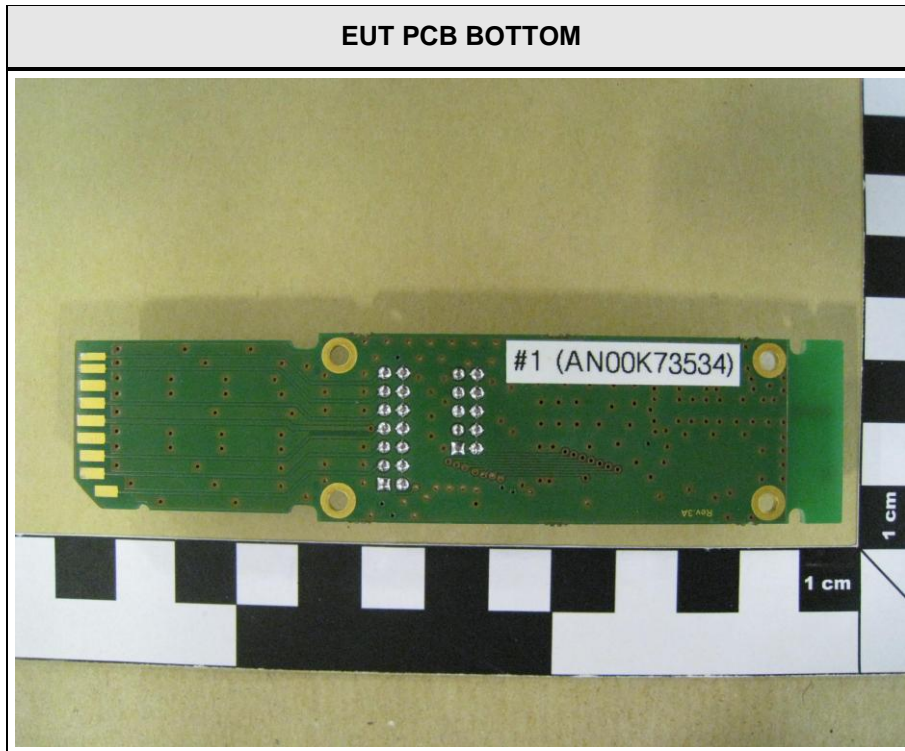
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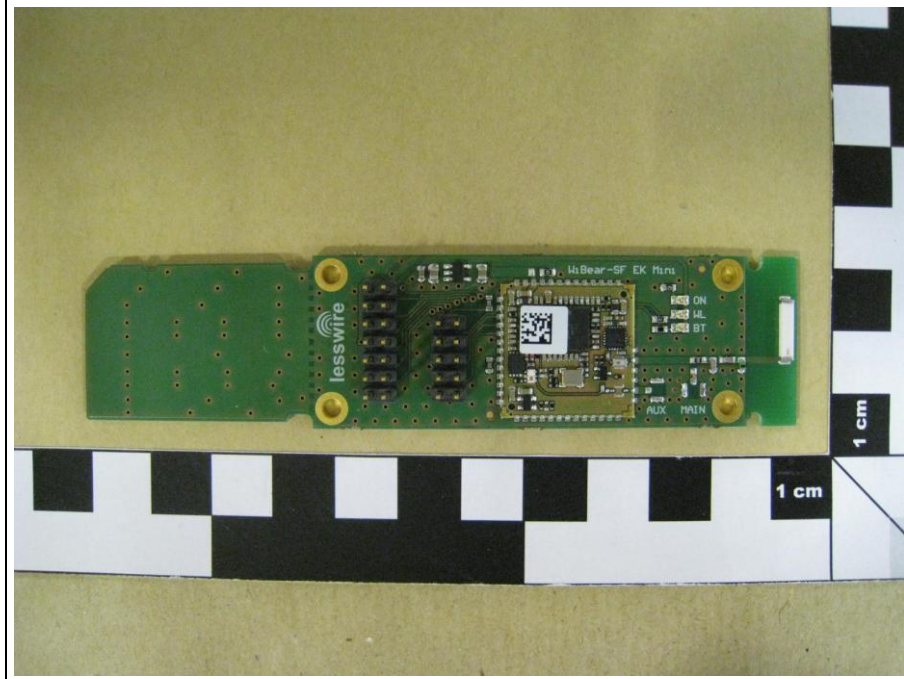
1 Equipment (Test item) Description:

Description	WLAN/Bluetooth Module	
Model	AN00K73534	
Serial number	None	
Hardware version	2.3	
Software / Firmware version	Test FW 10.0.3.63	
FCC-ID	PV7-WIBEAR-SF-STA	
IC	7738A-WIBEARSFSTA	
Equipment type	Radio module	
Radio type	Transceiver	
Radio technology	WLAN	
Operating frequency range	2412 - 2462MHz	
Assigned frequency band	2400 - 2483.5MHz	
Main test frequencies	F _{LOW}	2412MHz
	F _{MID}	2437MHz
	F _{HIGH}	2462MHz
Spreading	CCK, DSSS, OFDM	
Modulations	BPSK, QPSK, 16-QAM, 64-QAM	
Number of channels	11	
Channel spacing	5MHz	
Number of antennas	1	
Antenna 1	Type	external dedicated Half wave dipole, RF-SMA connector
	Model	WiMo 17010 10REV
	Manufacturer	WiMo
	Gain	3.14dBi
Antenna 2	Type	integrated Ceramic chip antenna, soldered into the PCB
	Model	7488910245
	Manufacturer	Würth Elektronik
	Gain	3.0dBi
Manufacturer	PRETTL Electronics AG Robert-Bosch-Straße 10 01454 Radeberg GERMANY	
Power supply	V _{NOM}	3.3VDC
	V _{MIN}	--
	V _{MIN}	--

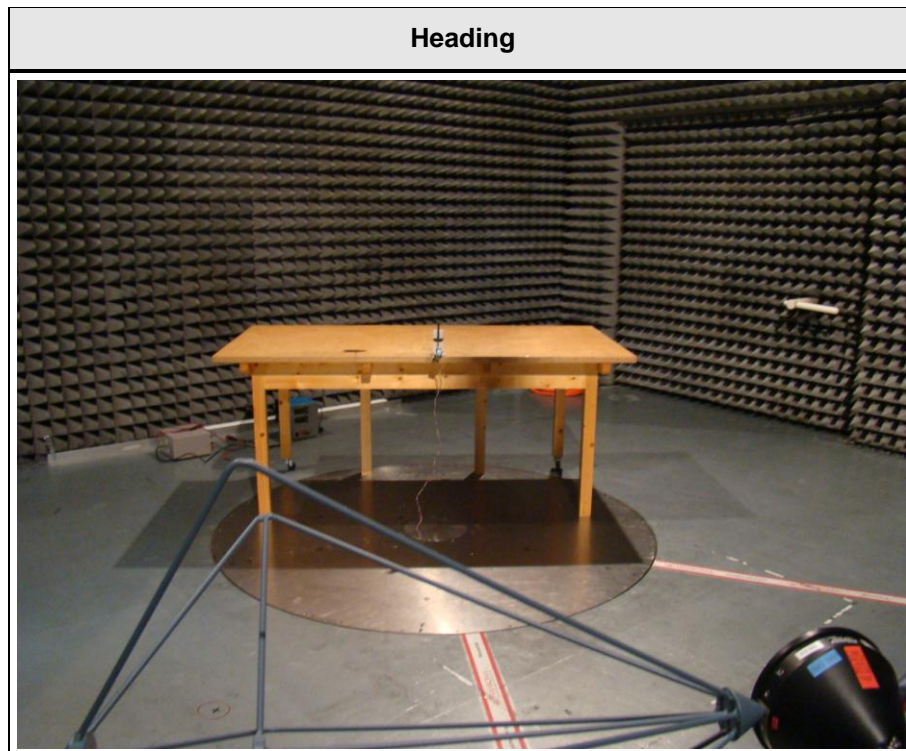
1.1 Photos – Equipment



EUT PCB TOP WITHOUT ANTENNA CONNECTOR



1.1 Photos – Test setup



1.2 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
none				
*Note: Use the following abbreviations: AE : Auxiliary/Associated Equipment, or SIM : Simulator (Not Subjected to Test) CABL : Connecting cables				

1.3 Test Modes

Mode #	Description	
DSSS	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone transmit Spreading = Direct Sequence Spread Spectrum Modulation = BPSK Data rate = 1Mbps Bandwidth = 20MHz Duty cycle = 100% Power level = Maximum
OFDM	General conditions:	EUT powered by laboratory power supply.
	Radio conditions:	Mode = standalone transmit Spreading = Multi-Carrier Operation Modulation = QPSK Data rate = 6Mbps Bandwidth = 20MHz Duty cycle = 100% Power level = Maximum

1.4 Test Equipment Used During Testing

Occupied Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	Inv. No. 0496	Aug 10	Aug 12

Maximum peak conducted power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	Inv. No. 0496	Aug 10	Aug 12

Band edge compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	Inv. No. 0496	Aug 10	Aug 12

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	Inv. No. 0496	Aug 10	Aug 12

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 5	Inv. No. 0583		
Spectrum Analyzer	R&S	FSIQ26	Inv. No. 0413	Apr. 11	Apr. 12
Biconical Antenna	R&S	HK 116	Inv. No. 0012	Jan 10	Jan 13
LPD Antenna	R&S	HL 223	Inv. No. 0295	Feb 11	Feb 13
LPD Antenna	R&S	HL 025	Inv. No. 0512	Feb 10	Feb 13

1.5 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dB μ V. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

$$\text{Reading on Analyzer (dB}\mu\text{V)} + \text{A.F. (dB)} = \text{Net field strength (dB}\mu\text{V/m)}$$

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dB μ V/m). The FCC limits are given in units of μ V/m. The following formula is used to convert the units of μ V/m to dB μ V/m:

$$\text{Limit (dB}\mu\text{V/m)} = 20 * \log (\mu\text{V/m})$$

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:


$$\begin{array}{rclcl} \text{Reading} & + & \text{AF} & = & \text{Net Reading} & : & \text{Net reading - FCC limit} & = & \text{Margin} \\ 21.5 \text{ dB}\mu\text{V} & + & 26 \text{ dB} & = & 47.5 \text{ dB}\mu\text{V/m} & : & 47.5 \text{ dB}\mu\text{V/m} - 57.0 \text{ dB}\mu\text{V/m} & = & -9.5 \text{ dB} \end{array}$$

2 Result Summary

FCC 47 CFR Part 15C, IC RSS-210				
Product Specific Standard Section	Requirement – Test	Reference Method	Result	Remarks
RSS-Gen 4.6.1	Occupied Bandwidth	RSS-Gen 4.6.1	N/A	Informational only
FCC § 15.247(a)(2) IC RSS-210 § A8.2	6dB Bandwidth	KDB Publication No. 558074	N/A	Not included in Class II permission change
FCC § 15.247(b)(3) IC RSS-210 § A8.4	Maximum peak conducted power	KDB Publication No. 558074	PASS	
FCC § 15.247(e) IC RSS-210 § A8.2	Power spectral density	KDB Publication No. 558074	N/A	Not included in Class II permission change
47 CFR 15.207 RSS-Gen 7.2.4	AC power line conducted emissions	KDB Publication No. 558074 / ANSI C63.4	N/A	Not included in Class II permission change
FCC § 15.247(d) IC RSS-210 § A8.5	Band edge compliance	KDB Publication No. 558074	PASS	
FCC § 15.247(d) IC RSS-210 § A8.5	Conducted spurious emissions	KDB Publication No. 558074	PASS	
FCC § 15.247(d) FCC § 15.209 IC RSS-210 A8.5 IC RSS-Gen 4.9 IC RSS-Gen 7.2.5	Transmitter radiated spurious emissions	KDB Publication No. 558074 / ANSI C 63.4	PASS	
IC RSS-Gen 4.10 IC RSS-Gen 6.1	Receiver radiated spurious emissions	ANSI C 63.4	PASS	
Remarks:				

3 Test Conditions and Results

3.1 Test Conditions and Results – Occupied Bandwidth

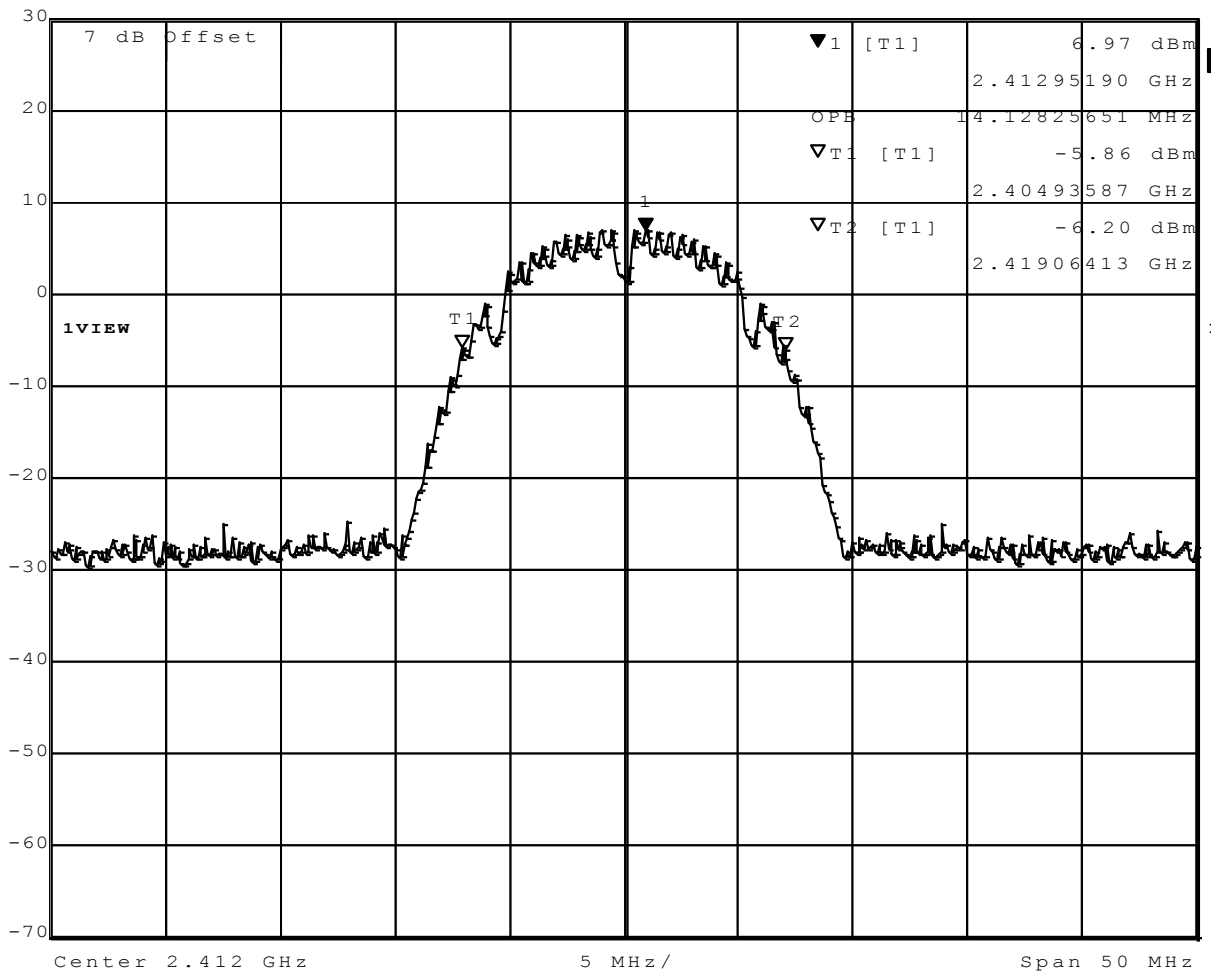
Occupied Bandwidth acc. IC RSS-Gen		Verdict: PASS	
Test according to measurement reference	Reference Method		
	RSS-Gen 4.6.1		
Test frequency range	Tested frequencies		
	$F_{LOW} / F_{MID} / F_{HIGH}$		
Limits			
None (Informational only)			
Test setup			
 <pre> graph LR SA[Spectrum Analyzer] --- EUT[EUT] </pre>			
Test procedure			
<ol style="list-style-type: none"> EUT set to test mode (Communication tester is used if needed) Span set to at least twice the emission spectrum Resolution bandwidth set to 1% of span Occupied Bandwidth (99%) measurement with spectrum analyzer built in measurement function 			
Test results			
Channel	Frequency [MHz]	Mode	Occupied Bandwidth [MHz]
F_{LOW}	2412	DSSS	14.128
F_{MID}	2437	DSSS	14.028
F_{HIGH}	2462	DSSS	14.034
F_{LOW}	2412	OFDM	17.034
F_{MID}	2437	OFDM	17.034
F_{HIGH}	2462	OFDM	17.034
Comments:			

Occupied Bandwidth – DSSS F_{LOW}

RSS Gen
Occupied Bandwidth

EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, V_{nom}
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 2412 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 DSSS / 1 Mbit/s / power level 16

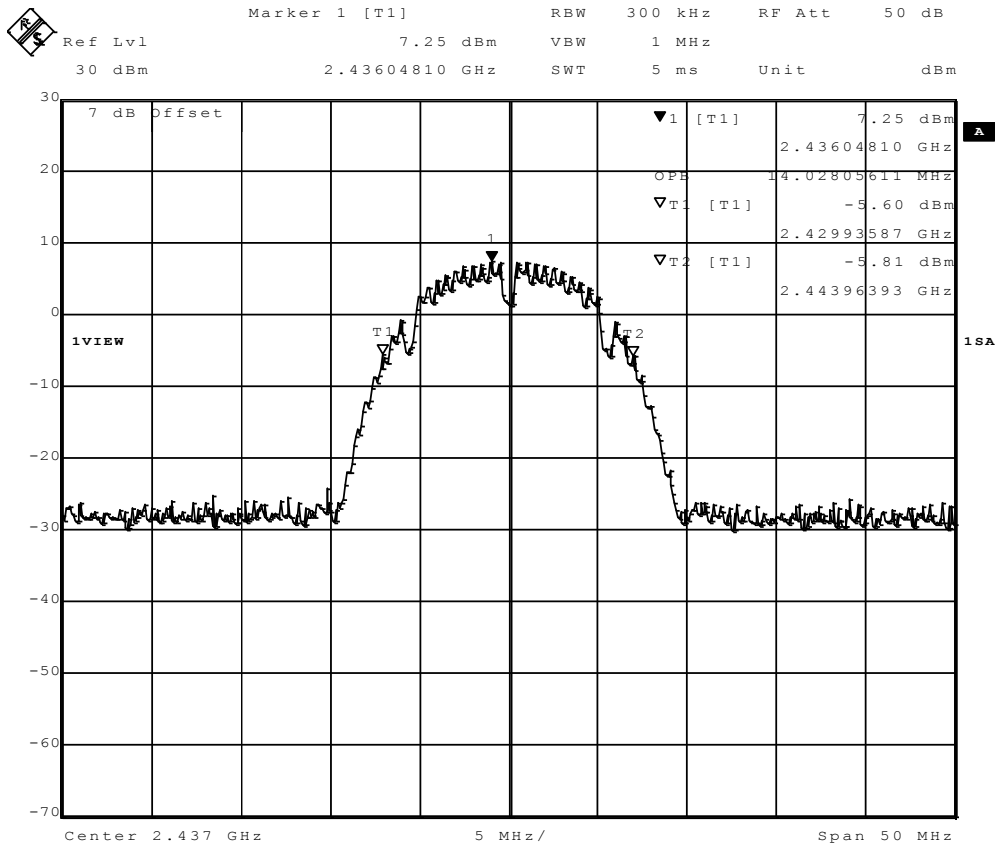
	Marker 1 [T1]	RBW	300 kHz	RF Att	50 dB
Ref Lvl	6.97 dBm	VBW	1 MHz		
30 dBm	2.41295190 GHz	SWT	5 ms	Unit	dBm



Comment A: Occupied bandwidth: 14128.3 KHz
 Date: 5.DEC.2011 11:21:44

Occupied Bandwidth – DSSS F_{MID}
**RSS Gen
Occupied Bandwidth**

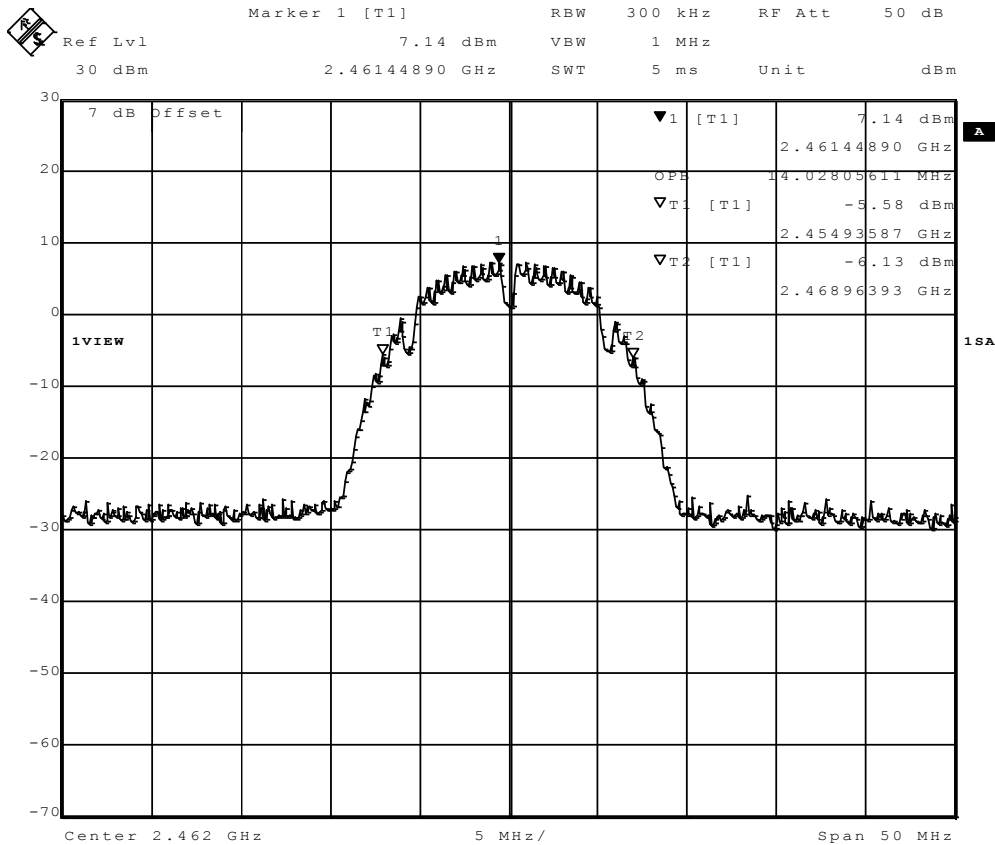
EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 2437 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 DSSS / 1 Mbit/s / power level 16



Comment A: Occupied bandwidth: 14028.1 KHz
 Date: 5.DEC.2011 11:23:44

Occupied Bandwidth – DSSS F_{HIGH}
**RSS Gen
Occupied Bandwidth**

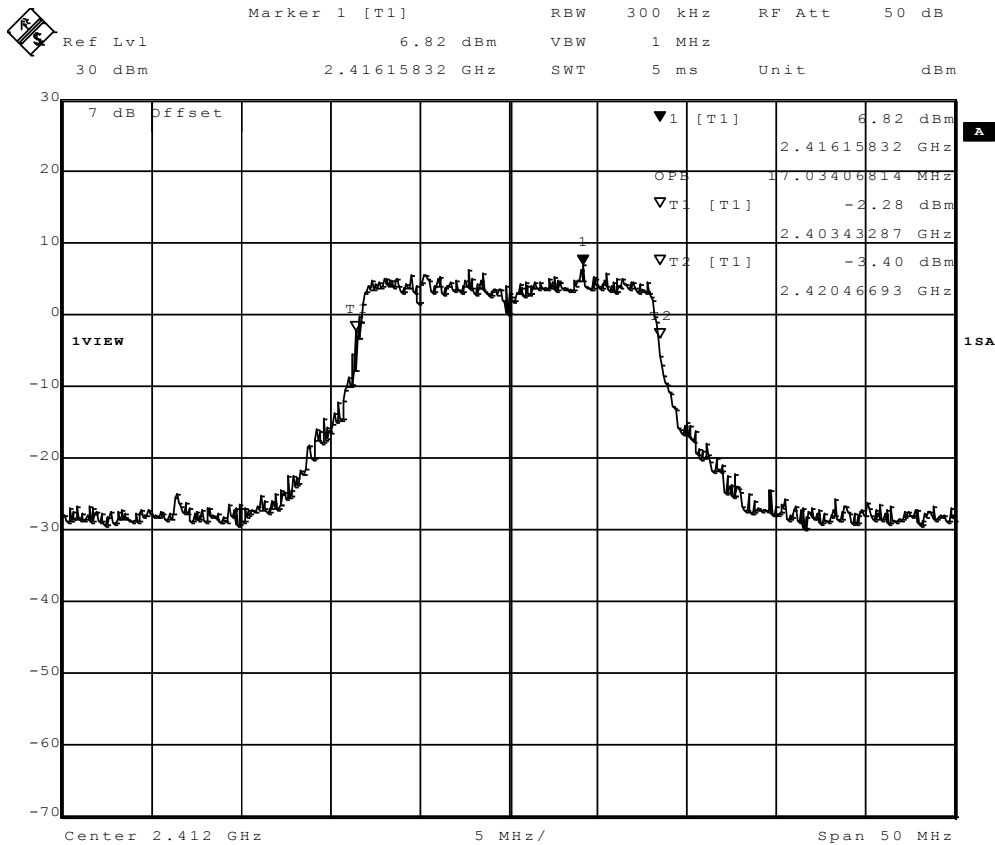
EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 2462 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 DSSS / 1 Mbit/s / power level 16



Comment A: Occupied bandwidth: 14028.1 KHz
 Date: 5.DEC.2011 11:25:20

Occupied Bandwidth – OFDM F_{LOW}
RSS Gen
Occupied Bandwidth

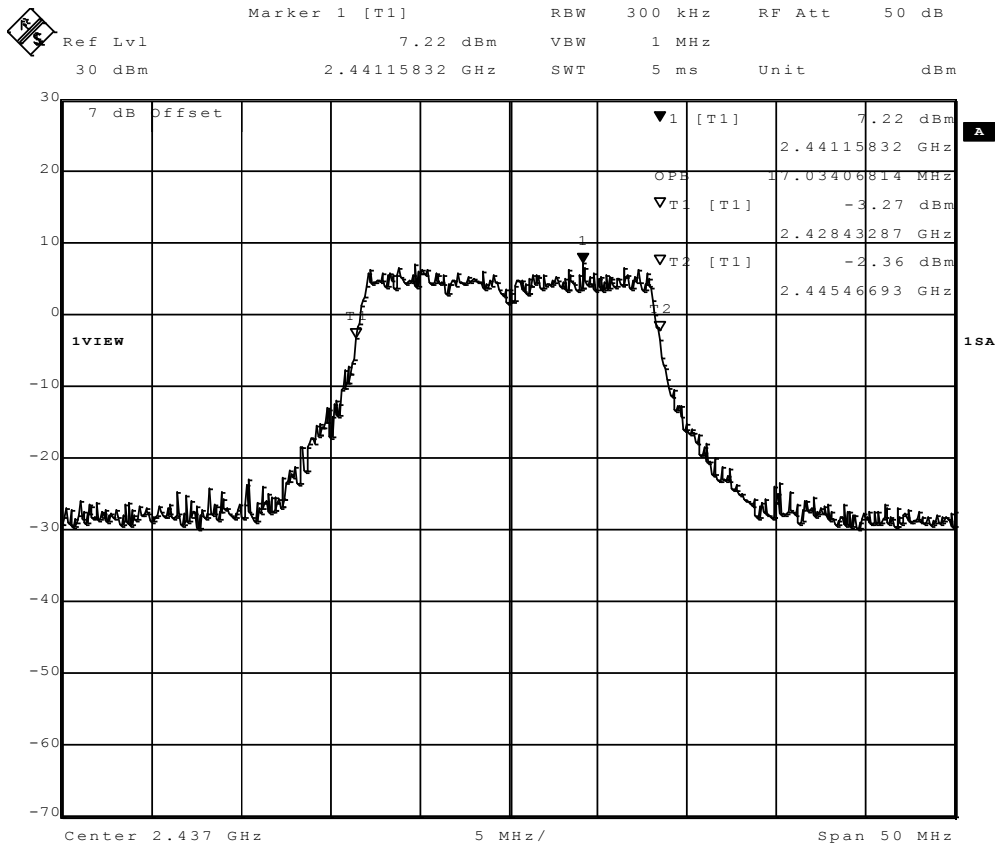
EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 2412 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 OFDM / 6 Mbit/s / power level 15



Comment A: Occupied bandwidth: 17034.1 KHz
 Date: 5.DEC.2011 11:19:29

Occupied Bandwidth – OFDM F_{MID}
**RSS Gen
Occupied Bandwidth**

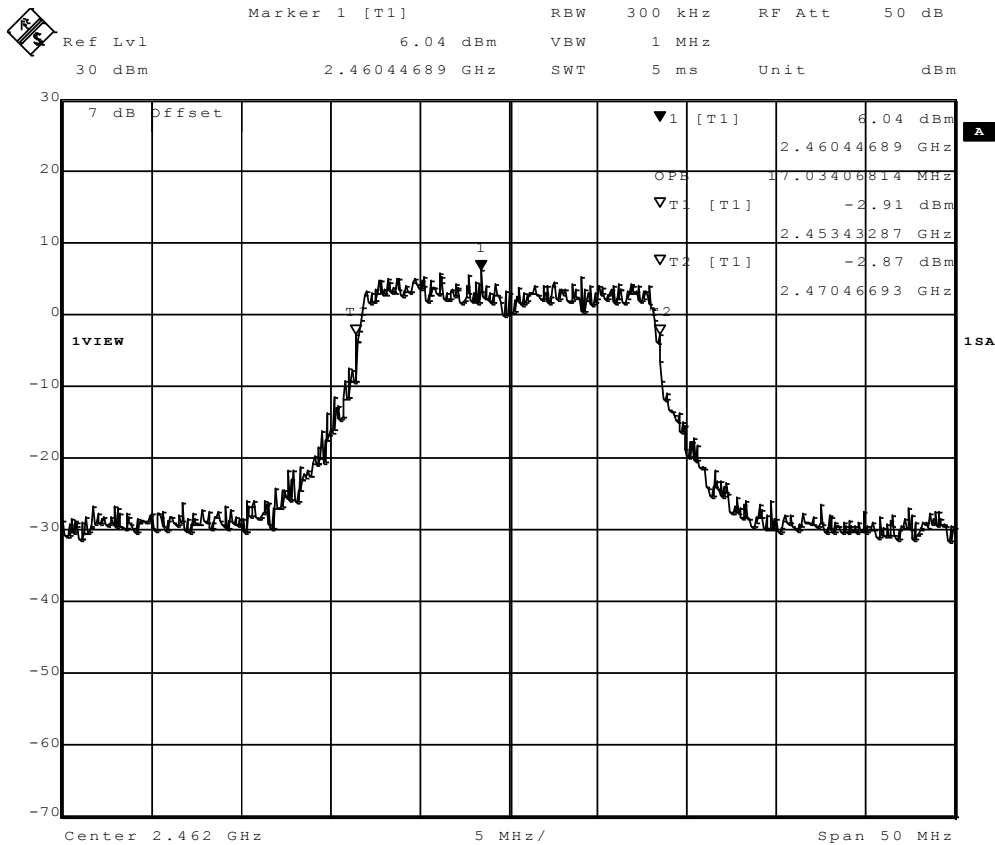
EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 2437 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 OFDM / 6 Mbit/s / power level 15



Comment A: Occupied bandwidth: 17034.1 KHz
 Date: 5.DEC.2011 11:08:46

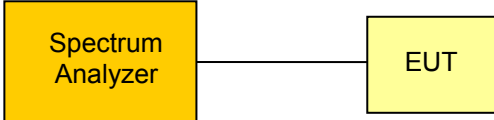
Occupied Bandwidth – OFDM F_{HIGH}
RSS Gen
Occupied Bandwidth

EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification 4.4.1 Occupied Bandwidth
 Comment 1 Channel.: 2462 MHz
 Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
 Comment 3 OFDM / 6 Mbit/s / power level 15



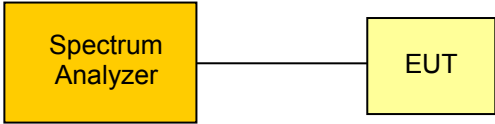
Comment A: Occupied bandwidth: 17034.1 KHz
 Date: 5.DEC.2011 11:06:26

3.2 Test Conditions and Results – Maximum peak conducted power

Maximum peak conducted power acc. FCC 15.247 / IC RSS-210		Verdict: PASS
EUT requirement rule parts and clause	Reference	
	FCC 15.247(b)(3) / IC RSS-210 A8.4	
Test according to measurement reference	Reference Method	
	FCC KDB Publication No. 558074	
Test frequency range	Tested frequencies	
	$F_{LOW} / F_{MID} / F_{HIGH}$	
Measurement mode	Peak	
Maximum antenna gain	3.14dBi \Rightarrow Limit correction = 0dB	
Limits		
Limit	Condition	
1W (30dBm)	Number of hopping channels \geq 75	
0.125W (21dBm)	75 > Number of hopping channels \geq 15	
<p>The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6dBi. If transmitting antennas of directional gain greater than 6dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6dBi.</p>		
Test setup		
 <pre> graph LR SA[Spectrum Analyzer] --- EUT[EUT] </pre>		
Test procedure		
<ol style="list-style-type: none"> 1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span set to twice the 20dB bandwidth and detector to peak and max hold 4. Resolution bandwidth is set to 3MHz 5. Peak conducted power is determined from peak of spectrum envelope 		


Test results								
Channel	Frequency [MHz]	Voltage	Mode	Peak power [dbm]	Peak power [W]	Limit [dBm]	Margin [dB]	Result
F _{LOW}	2412	3.3VDC	DSSS	17.8	0.060	30	-12.20	PASS
F _{MID}	2437	3.3VDC	DSSS	17.2	0.052	30	-12.80	PASS
F _{HIGH}	2462	3.3VDC	DSSS	17.3	0.054	30	-12.70	PASS
F _{LOW}	2412	3.3VDC	OFDM	19.5	0.089	30	-10.50	PASS
F _{MID}	2437	3.3VDC	OFDM	20.1	0.102	30	-09.90	PASS
F _{HIGH}	2462	3.3VDC	OFDM	19.8	0.095	30	-10.20	PASS
Comments:								

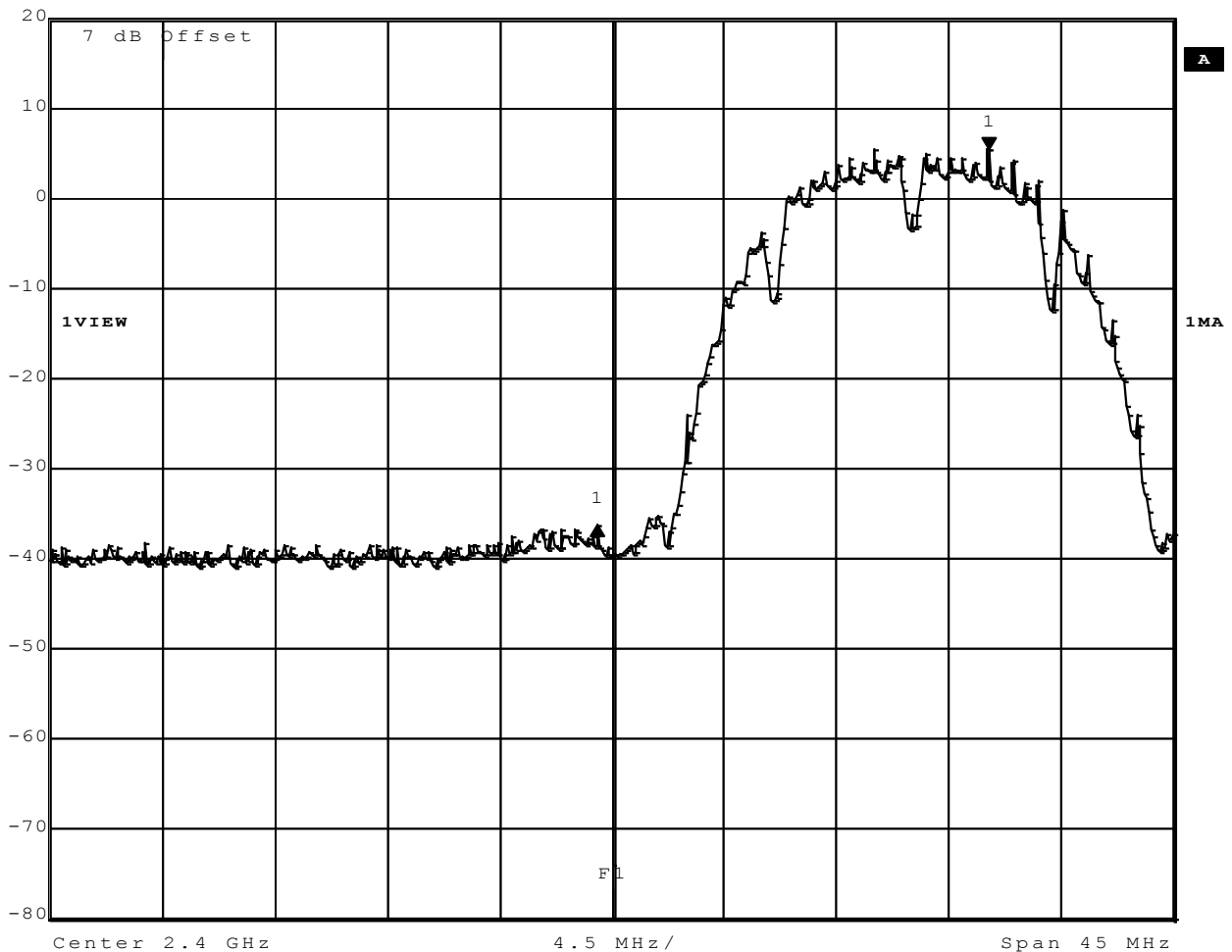
3.3 Test Conditions and Results – Band edge compliance

Band-edge compliance acc. FCC 15.247 / IC RSS-210				Verdict: PASS		
EUT requirement rule parts and clause	Reference					
	FCC 15.247(d) / IC RSS-210 A8.5					
Test according to measurement reference	Reference Method					
	FCC KDB Publication No. 558074					
Test frequency range	Tested frequencies					
	F_{LOW} / F_{HIGH}					
Measurement mode	Peak					
Limits						
Limit			Condition			
$\leq -20\text{dB}/100\text{kHz}$			Peak power measurement detector = Peak			
$\leq -30\text{dB}/100\text{kHz}$			Peak power measurement detector = RMS			
Test setup						
 <pre> graph LR SA[Spectrum Analyzer] --- EUT[EUT] </pre>						
Test procedure						
<ol style="list-style-type: none"> 1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference 						
Test results						
Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]	Result
F_{LOW}	2412	DSSS	-41.84	-20	-21.84	PASS
F_{HIGH}	2462	DSSS	-45.05	-20	-25.05	PASS
F_{LOW}	2412	OFDM	-33.36	-20	-13.36	PASS
F_{HIGH}	2462	OFDM	-39.98	-20	-19.98	PASS
Comments:						

Band-edge compliance – DSSS F_{LOW}
FCC part 15.247
Band-edge compliance of RF conducted emissions

EUT	WLAN/Bluetooth Module / WiBear SF1 STA
Model	AN00K73534 #1
Approval Holder	lesswire AG / Ord.: G0M-1109-1387
Temperature / Voltage	25°C, Vnom
Test Site / Operator	Eurofins Product Service GmbH, Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 2412 MHz
Comment 3	DSSS, 1Mbit/s, power level 16

	Delta 1 [T1]	RBW	100 kHz	RF Att	40 dB
Ref Lvl	-41.84 dB	VBW	100 kHz		
20 dBm	-15.69138277 MHz	SWT	11.5 ms	Unit	dBm




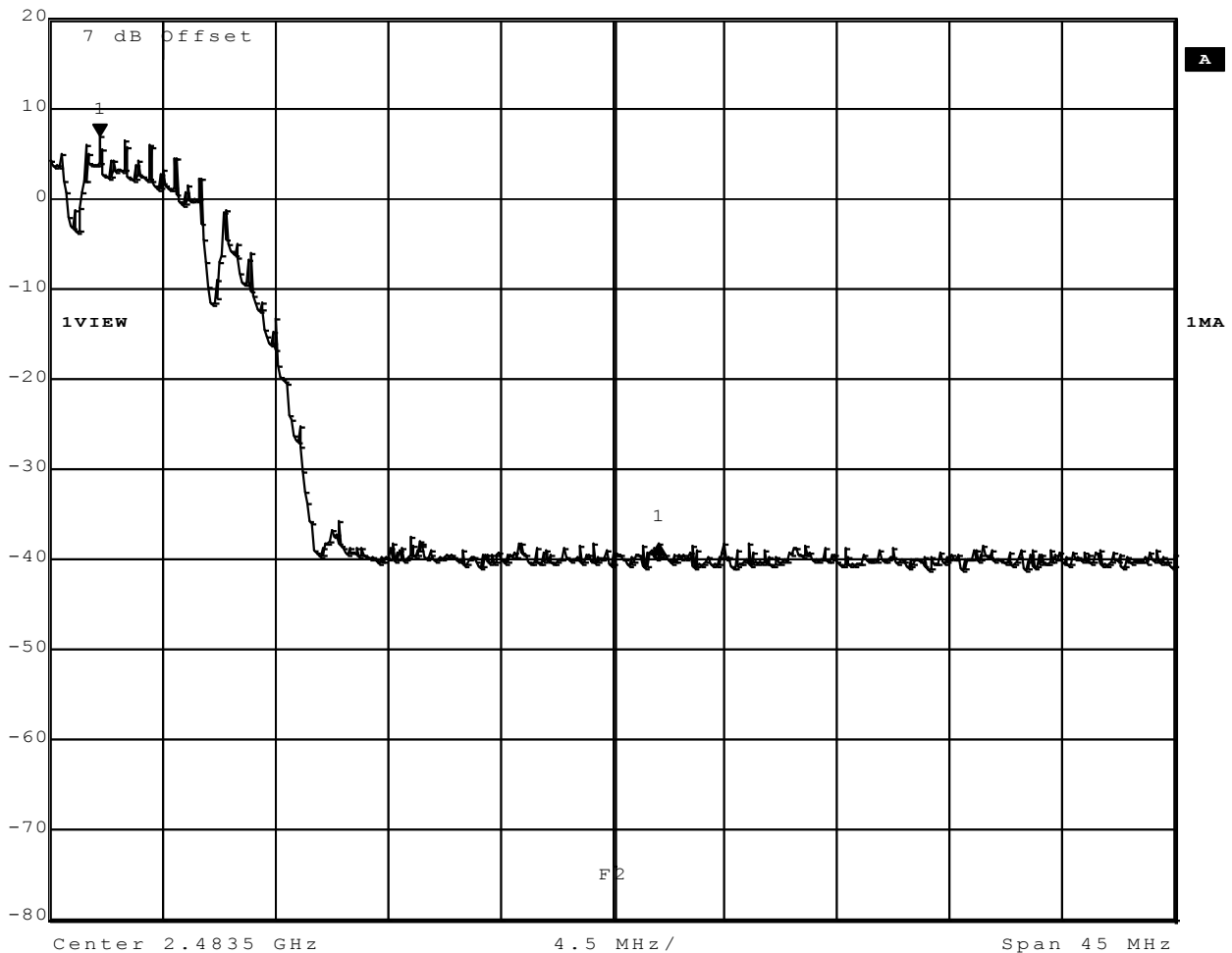
Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 5.DEC.2011 09:21:30

Band-edge compliance – DSSS F_{HIGH}
FCC part 15.247
Band-edge compliance of RF conducted emissions

EUT	WLAN/Bluetooth Module / WiBear SF1 STA
Model	AN00K73534 #1
Approval Holder	lesswire AG / Ord.: G0M-1109-1387
Temperature / Voltage	25°C, Vnom
Test Site / Operator	Eurofins Product Service GmbH, Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 2462 MHz
Comment 3	DSSS, 1Mbit/s, power level 16

	Delta 1 [T1]	RBW	100 kHz	RF Att	40 dB
Ref Lvl	-45.05 dB	VBW	100 kHz		
20 dBm	22.36472946 MHz	SWT	11.5 ms	Unit	dBm




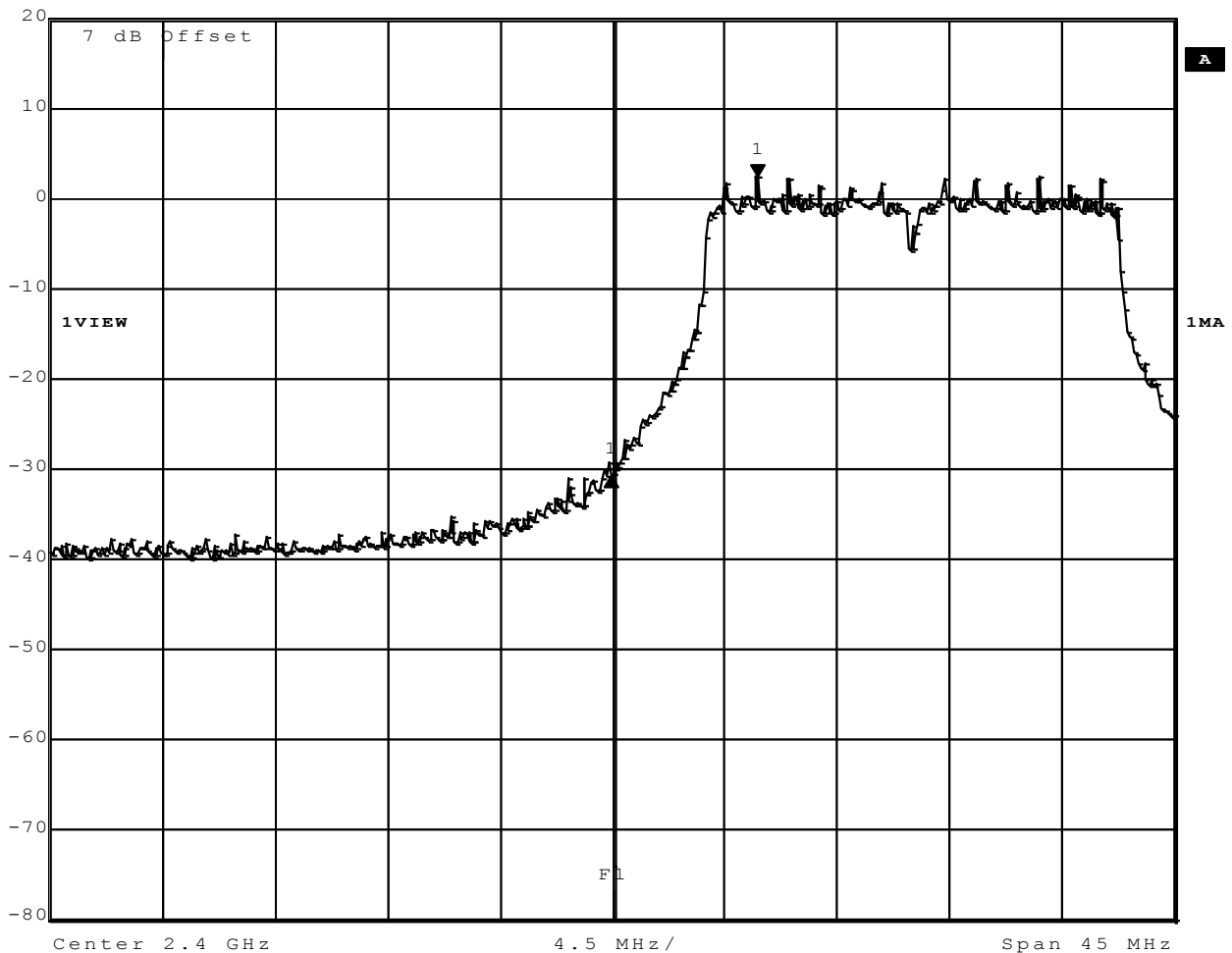
Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 5.DEC.2011 09:27:32

Band-edge compliance – OFDM F_{LOW}
FCC part 15.247
Band-edge compliance of RF conducted emissions

EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification FCC part 15 section 247(c)
 Comment 1 Band-edge compliance
 Comment 2 Channel.: 2412 MHz
 Comment 3 OFDM, 6Mbit/s, power level 15


	Delta 1 [T1]	RBW	100 kHz	RF Att	40 dB
Ref Lvl	-33.36 dB	VBW	100 kHz		
20 dBm	-5.81663327 MHz	SWT	11.5 ms	Unit	dBm

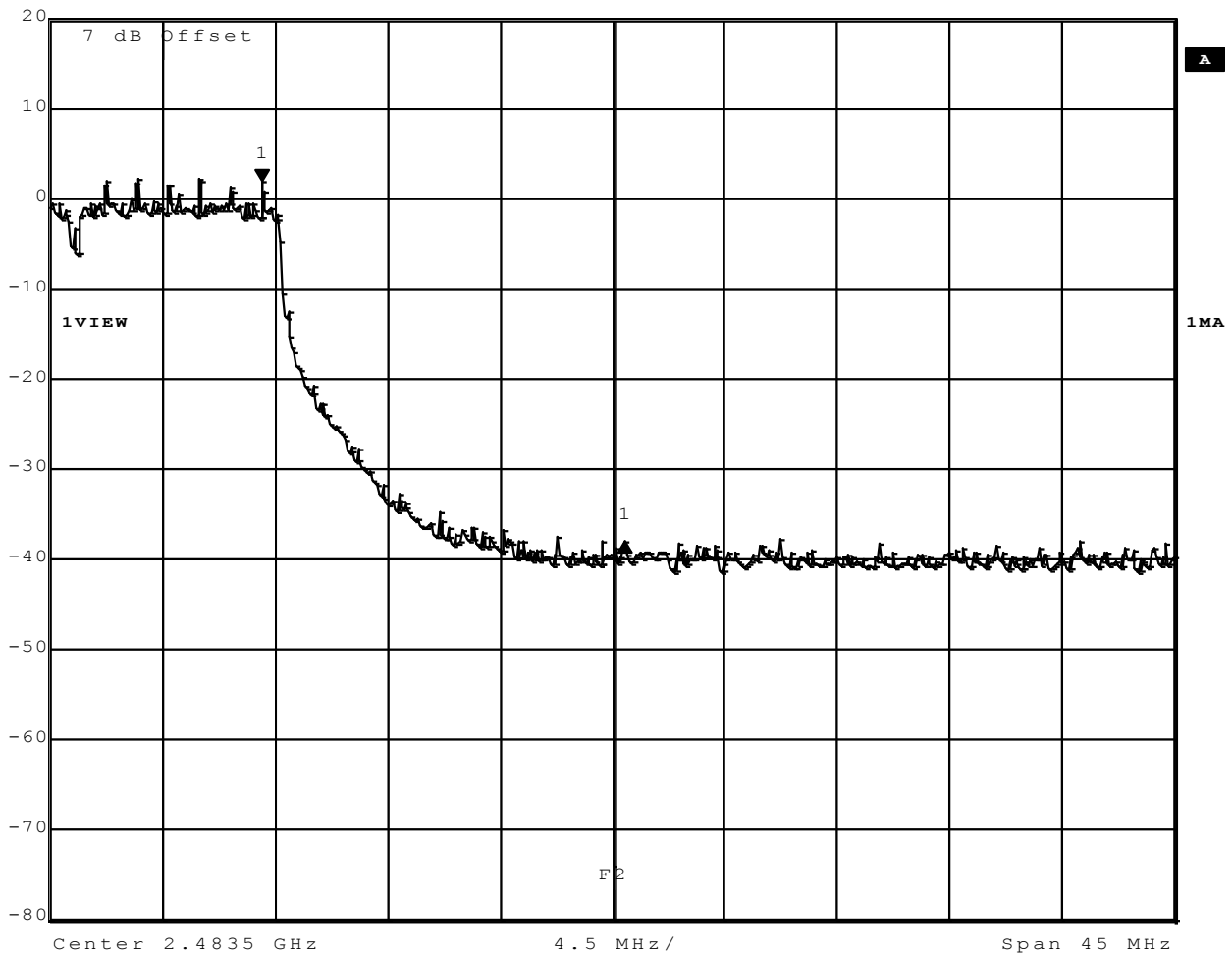


Comment A: Limit: Marker Delta value >20 dB; Result: PASS
 Date: 5.DEC.2011 10:55:15

Band-edge compliance – OFDM F_{HIGH}
FCC part 15.247
Band-edge compliance of RF conducted emissions

EUT	WLAN/Bluetooth Module / WiBear SF1 STA
Model	AN00K73534 #1
Approval Holder	lesswire AG / Ord.: G0M-1109-1387
Temperature / Voltage	25°C, Vnom
Test Site / Operator	Eurofins Product Service GmbH, Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 2462 MHz
Comment 3	OFDM, 6Mbit/s, power level 15

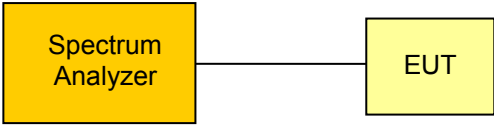
	Delta 1 [T1]	RBW	100 kHz	RF Att	40 dB
	Ref Lvl		-39.98 dB	VBW	100 kHz
	20 dBm		14.51903808 MHz	SWT	11.5 ms
				Unit	dBm



Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 5.DEC.2011 10:59:47

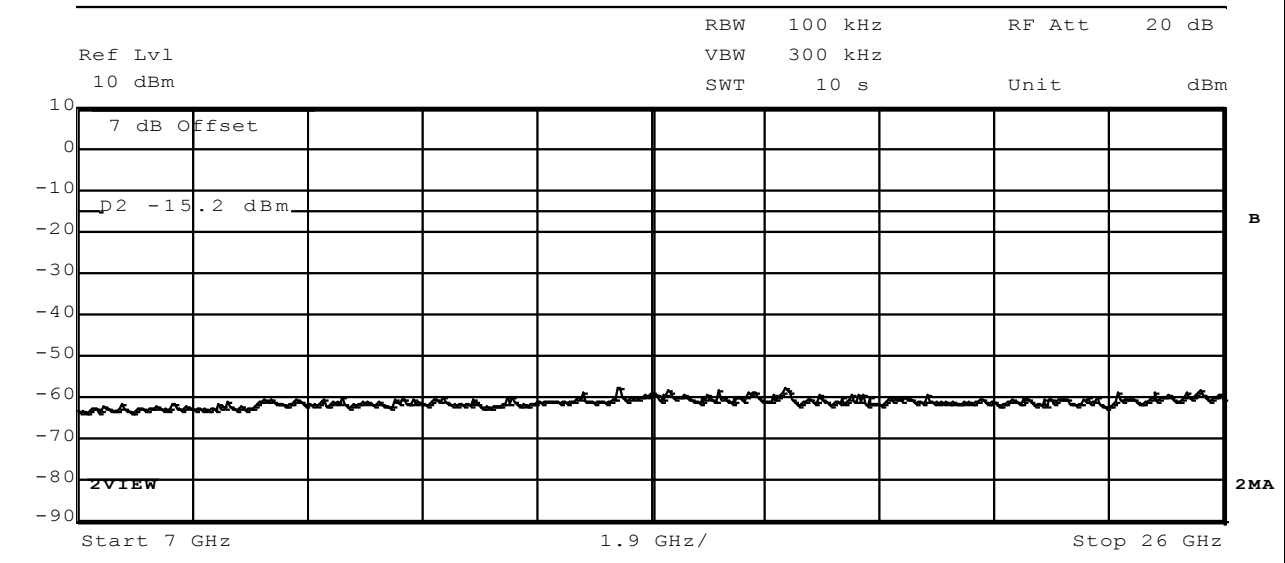
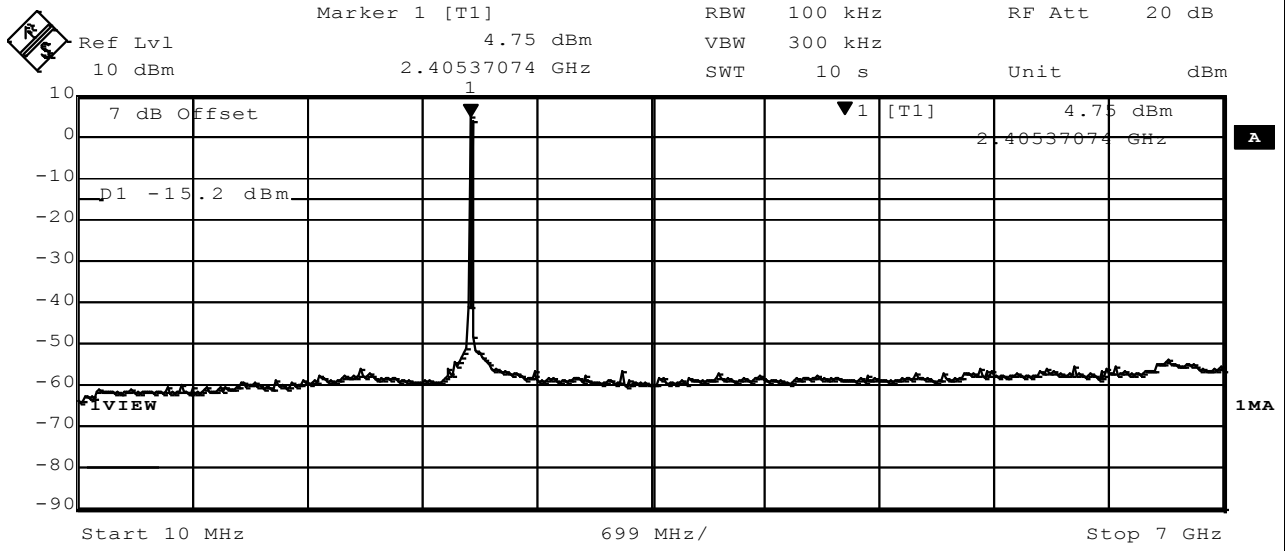
3.4 Test Conditions and Results – Conducted spurious emissions

Conducted spurious emissions acc. FCC 15.247 / IC RSS-210						Verdict: PASS		
EUT requirement rule parts and clause			Reference					
			FCC 15.247(d) / IC RSS-210 A8.5					
Test according to measurement reference			Reference Method					
			FCC KDB Publication No. 558074					
Test frequency range			Tested frequencies					
			10MHz – 10 th Harmonic					
Measurement mode			Peak					
Limits								
Limit				Condition				
≤ -20dB/100kHz				Peak power measurement detector = Peak				
≤ -30dB/100kHz				Peak power measurement detector = RMS				
Test setup								
 <pre> graph LR SA[Spectrum Analyzer] --- EUT[EUT] </pre>								
Test procedure								
<ol style="list-style-type: none"> 1. EUT set to test mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth is set to 100kHz and detector to peak and max hold 4. Markers are set to peak emission levels within frequency band 5. Emission level is determined by second marker on emission peak 6. Attenuation is determined from level difference 								
Test results								
Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Peak power [dBm]	Limit [dBm]	Margin [dB]	Result
No spurious emissions								
Comments:								

Conducted spurious emissions – DSSS F_{LOW}

FCC part 15.247 (d)
Spurious Emissions


EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, Vnom
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification FCC part 15.247 (d)
 Comment 1 Spurious Emissions conducted
 Comment 2 Channel : 2412 MHz
 Comment 3 DSSS / 1Mbit/s / power level 16

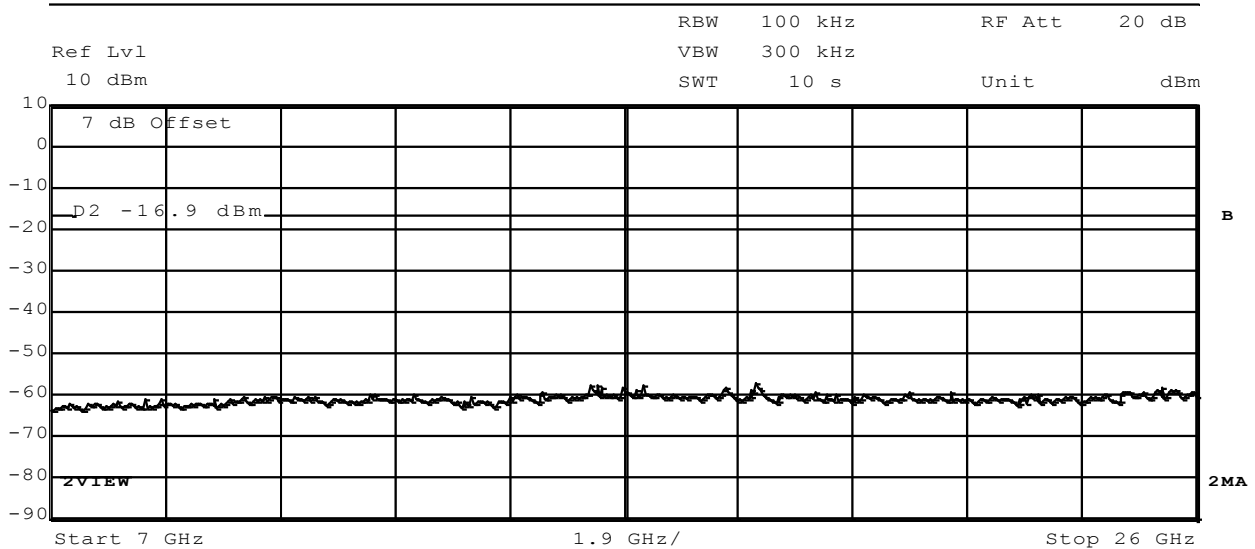
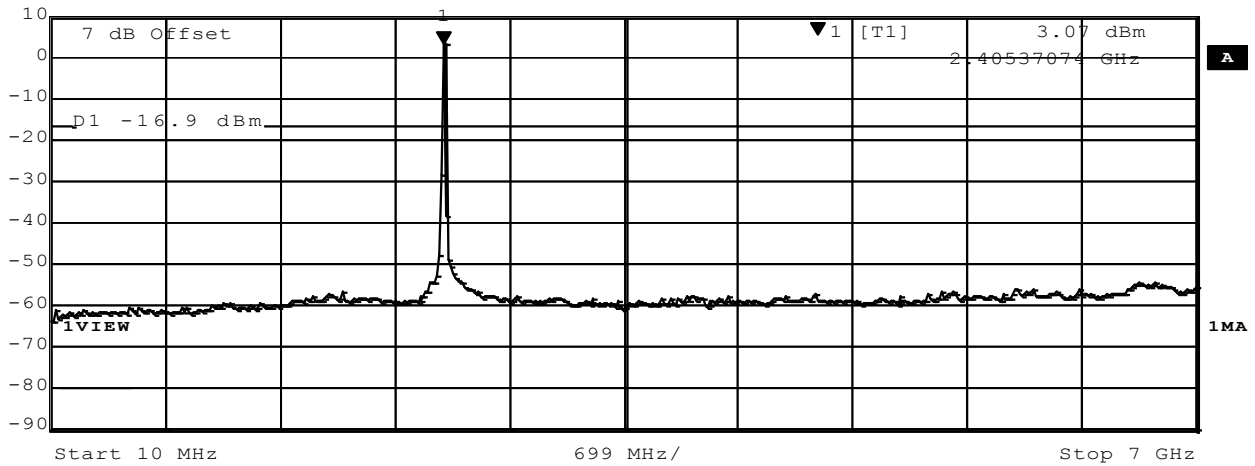


Date: 5.DEC.2011 09:13:04

Conducted spurious emissions – OFDM F_{Low}
Spurious Emissions

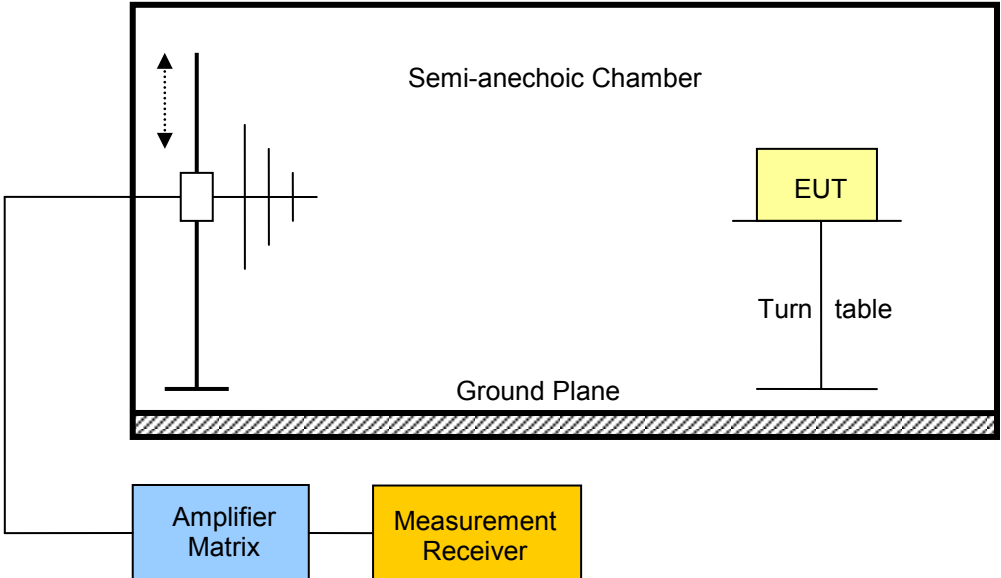
EUT WLAN/Bluetooth Module / WiBear SF1 STA
 Model AN00K73534 #1
 Approval Holder lesswire AG / Ord.: G0M-1109-1387
 Temperature / Voltage 25°C, V_{nom}
 Test Site / Operator Eurofins Product Service GmbH, Mr. Treffke
 Test Specification FCC part 15.247 (d)
 Comment 1 Spurious Emissions conducted
 Comment 2 Channel : 2412 MHz
 Comment 3 OFDM / 6Mbit/s / power level 15

	Ref Lvl	Marker 1 [T1]	RBW	100 kHz	RF Att	20 dB
	10 dBm	3.07 dBm	VBW	300 kHz		
		2.40537074 GHz	SWT	10 s	Unit	dBm



Date: 5.DEC.2011 10:46:27

3.5 Test Conditions and Results – Transmitter radiated emissions

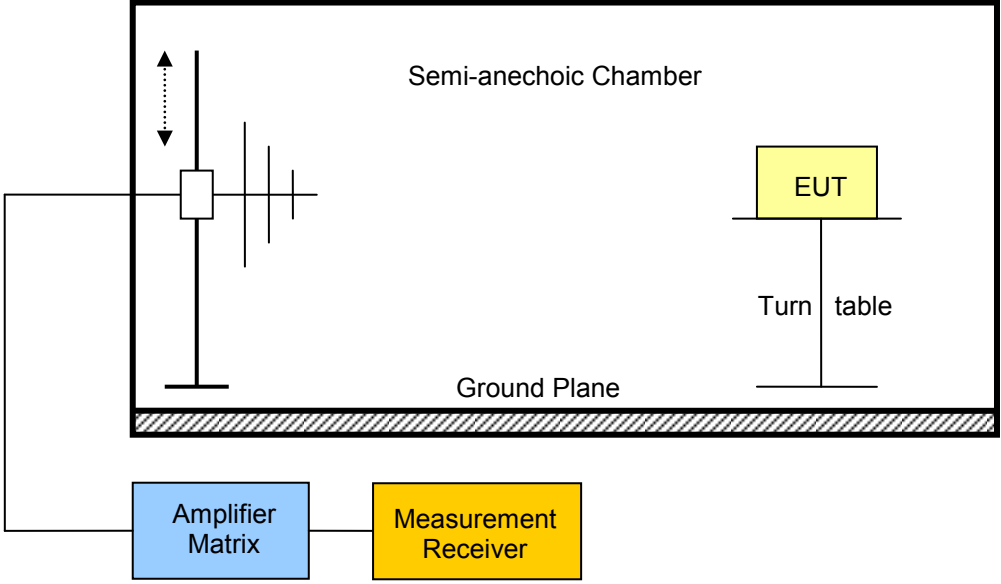
Transmitter radiated emissions acc. FCC 47 CFR 15.247 / IC RSS-210				Verdict: PASS	
Test according referenced standards		Reference Method			
		FCC 15.247(d) / IC RSS-210 A8.5			
Test according to measurement reference		Reference Method			
		FCC KDB Publication No. 558074 / ANSI C63.4			
Test frequency range		Tested frequencies			
		30MHz – 10 th Harmonic			
Limits					
Frequency range [MHz]	Detector	Limit [μ V/m]	Limit [dB μ V/m]	Limit Distance [m]	
30 – 88	Quasi-Peak	100	40	3	
88 – 216	Quasi-Peak	150	43.5	3	
216 – 960	Quasi-Peak	200	46	3	
960 – 1000	Quasi-Peak	500	54	3	
> 1000	Average	500	54	3	
Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)). When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.					
Test setup					
 <p>The diagram illustrates the test setup within a semi-anechoic chamber. The chamber sits on a ground plane. An Equipment Under Test (EUT) is placed on a turntable. A probe is positioned above the EUT, connected to an external Amplifier Matrix and Measurement Receiver. The probe is shown with a vertical double-headed arrow indicating its height and a horizontal line indicating its position relative to the EUT.</p>					

Test procedure									
<ol style="list-style-type: none"> EUT set to test mode (Communication tester is used if needed) Span it set according to measurement range Resolution bandwidth below 1GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1MHz with peak/average detector is used above 1GHz Markers are set to peak emission levels within restricted bands 									
Test results – External Antenna									
Channel	Frequency [MHz]	Mode	Emission [GHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Limit dist. [m]*	Margin [dB]
F _{LOW}	2412	DSSS	2.389	64.92	pk	ver	74	3	-09.08
F _{LOW}	2412	DSSS	2.389	42.85	av	ver	54	3	-11.15
F _{MID}	2437	DSSS	2.389	56.63	pk	ver	74	3	-17.37
F _{MID}	2437	DSSS	2.389	41.88	av	ver	54	3	-12.12
F _{HIGH}	2462	DSSS	2.484	65.10	pk	ver	74	3	-08.90
F _{HIGH}	2462	DSSS	2.484	46.75	av	ver	54	3	-07.25
F _{LOW}	2412	OFDM	2.389	68.80	p	hor	74	3	-05.20
F _{LOW}	2412	OFDM	2.389	35.36	av	hor	54	3	-18.64
F _{LOW}	2412	OFDM	2.489	55.06	p	ver	74	3	-18.94
F _{LOW}	2412	OFDM	2.489	37.53	av	ver	54	3	-16.47
F _{LOW}	2412	OFDM	2.389	66.54	p	ver	74	3	-07.46
F _{LOW}	2412	OFDM	2.389	48.74	av	ver	54	3	-05.26
F _{LOW}	2412	OFDM	2.389	68.80	p	hor	74	3	-05.20
F _{MID}	2437	OFDM	2.389	57.44	p	ver	74	3	-16.56
F _{MID}	2437	OFDM	2.389	40.89	av	ver	54	3	-13.11
F _{MID}	2437	OFDM	2.484	58.64	p	ver	74	3	-15.36
F _{MID}	2437	OFDM	2.484	41.54	av	ver	54	3	-12.46
F _{HIGH}	2462	OFDM	2.484	59.61	p	hor	74	3	-14.39
F _{HIGH}	2462	OFDM	2.484	42.08	av	hor	54	3	-11.92
F _{HIGH}	2462	OFDM	2.366	54.12	p	ver	74	3	-19.88
F _{HIGH}	2462	OFDM	2.366	39.45	av	ver	54	3	-14.55
F _{HIGH}	2462	OFDM	2.484	71.50	p	ver	74	3	-02.50
F _{HIGH}	2462	OFDM	2.484	50.02	av	ver	54	3	-03.98
Comments: * Physical distance between EUT and measurement antenna.									

Test results – Internal Antenna									
Channel	Frequency [MHz]	Mode	Emission [GHz]	Level [db μ V/m]	Det.	Pol.	Limit [db μ V/m]	Limit dist. [m]*	Margin [dB]
F _{LOW}	2412	DSSS	2.390	67.87	pk	hor	74	3	-06.13
F _{LOW}	2412	DSSS	2.390	44.61	av	hor	54	3	-09.39
F _{LOW}	2412	DSSS	2.389	57.78	pk	ver	74	3	-16.22
F _{LOW}	2412	DSSS	2.389	38.40	av	ver	54	3	-15.60
F _{MID}	2437	DSSS	2.393	62.89	pk	hor	74	3	-11.11
F _{MID}	2437	DSSS	2.393	44.15	av	hor	54	3	-09.85
F _{LOW}	2412	DSSS	2.352	56.37	pk	hor	74	3	-17.63
F _{LOW}	2412	DSSS	2.352	40.64	av	hor	54	3	-13.36
F _{LOW}	2412	DSSS	2.484	61.53	pk	hor	74	3	-12.47
F _{LOW}	2412	DSSS	2.484	40.73	av	hor	54	3	-13.27
F _{LOW}	2412	DSSS	2.484	54.26	pk	ver	74	3	-19.74
F _{LOW}	2412	DSSS	2.484	34.37	av	ver	54	3	-19.63
F _{LOW}	2412	OFDM	2.389	62.61	pk	hor	74	3	-11.39
F _{MID}	2437	OFDM	2.389	49.58	av	hor	54	3	-04.42
F _{MID}	2437	OFDM	2.389	62.40	pk	ver	74	3	-11.60
F _{MID}	2437	OFDM	2.389	40.29	av	ver	54	3	-13.71
F _{MID}	2437	OFDM	2.389	60.04	pk	hor	74	3	-13.96
F _{MID}	2437	OFDM	2.389	41.67	av	hor	54	3	-12.33
F _{MID}	2437	OFDM	2.484	58.85	pk	hor	74	3	-15.15
F _{MID}	2437	OFDM	2.484	35.96	av	hor	54	3	-18.04
F _{MID}	2437	OFDM	2.389	54.98	pk	ver	74	3	-19.02
F _{MID}	2437	OFDM	2.389	34.99	av	ver	54	3	-19.01
F _{HIGH}	2462	OFDM	2.352	56.97	pk	hor	74	3	-17.03
F _{HIGH}	2462	OFDM	2.352	41.98	av	hor	54	3	-12.02
F _{HIGH}	2462	OFDM	2.484	69.64	pk	hor	74	3	-04.36
F _{HIGH}	2462	OFDM	2.484	46.24	av	hor	54	3	-07.76
F _{HIGH}	2462	OFDM	2.484	60.76	pk	ver	74	3	-13.24
F _{HIGH}	2462	OFDM	2.484	40.22	av	ver	54	3	-13.78

Comments: * Physical distance between EUT and measurement antenna.

3.6 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. IC RSS-210			Verdict: PASS	
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30MHz – 3 th Harmonic			
EUT test mode	Receive			
Limits				
Frequency range [MHz]	Detector	Limit [μ V/m]	Limit [dB μ V/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
Test setup				
 <p>The diagram illustrates the test setup within a Semi-anechoic Chamber. A Ground Plane is located at the bottom. An Amplifier Matrix (blue box) is connected to a Measurement Receiver (yellow box) outside the chamber. The Amplifier Matrix is also connected to a probe antenna inside the chamber. The probe antenna is positioned vertically, with a dashed double-headed arrow indicating its vertical movement. The EUT (Equipment Under Test, yellow box) is placed on a Turn table inside the chamber. The chamber walls are shown with a hatched pattern, representing the absorbers.</p>				

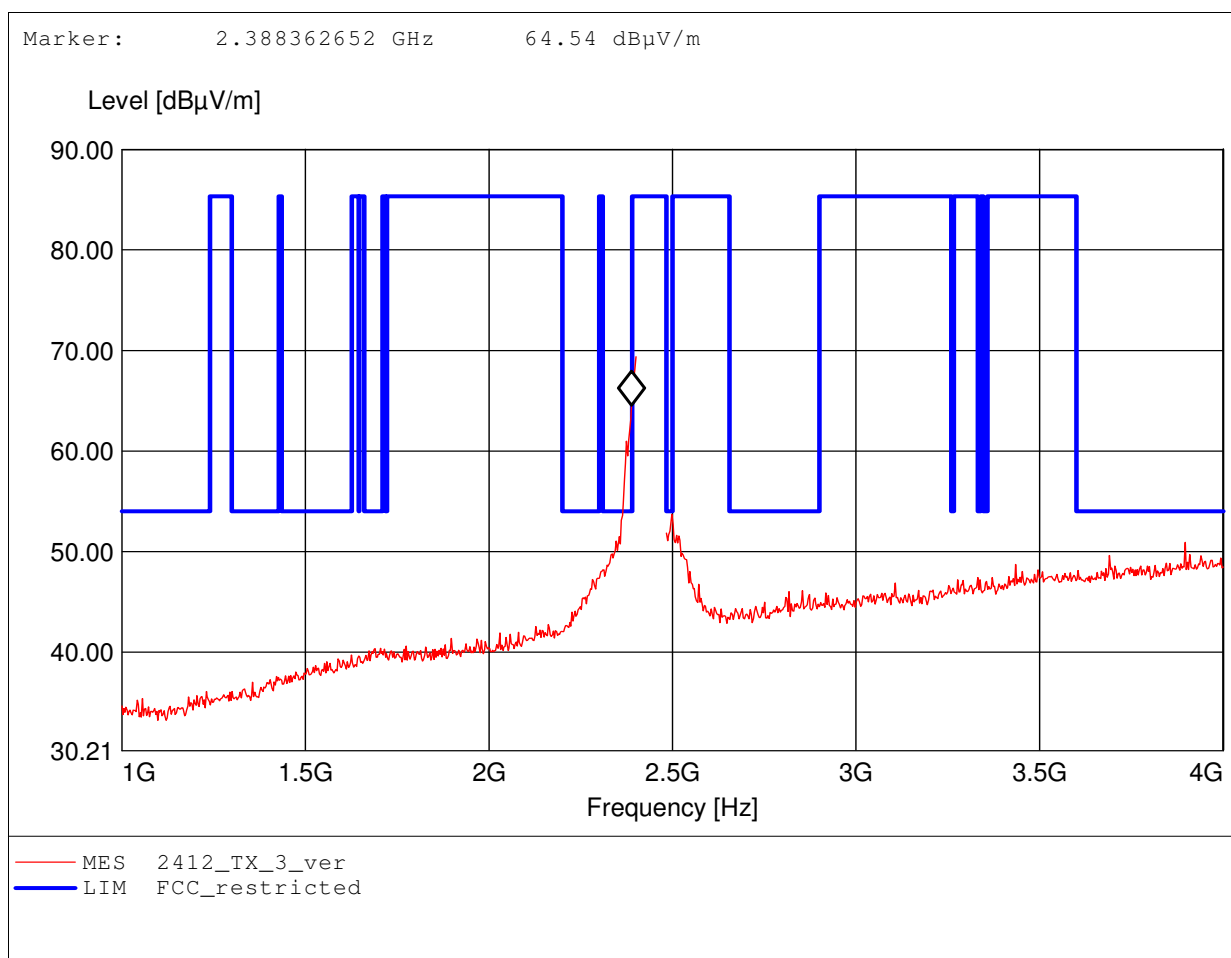
Test procedure						
<ol style="list-style-type: none"> EUT set to receive mode (Communication tester is used if needed) Span it set according to measurement range Resolution bandwidth below 1GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1MHz with peak/average detector is used above 1GHz Markers are set to peak emission levels 						
Test results - Antenna external						
Channel	Frequency [MHz]	Emission Level [dB μ V/m]	Emission Level [μ V/m]	Det.	Limit [μ V/m]	Margin [μ V/m]
F _{MID}	191.824	31.75	38.68	pk	150	-111.32
F _{MID}	189.439	31.69	38.41	pk	150	-111.59
F _{MID}	990.381	23.66	15.24	pk	500	-484.76
F _{MID}	483.768	29.33	29.28	pk	200	-170.72
F _{MID}	3994.000	40.24	102.80	pk	500	-397.20
F _{MID}	3874.000	40.79	109.52	pk	500	-390.48
F _{MID}	7904.000	41.14	114.02	pk	500	-385.98
F _{MID}	7928.000	41.06	112.98	pk	500	-387.02
F _{MID}	11880.00	45.64	191.43	pk	500	-308.57
F _{MID}	11856.00	45.13	180.51	pk	500	-319.49
Test results - Antenna internal						
Channel	Frequency [MHz]	Emission Level [dB μ V/m]	Emission Level [μ V/m]	Det.	Limit [μ V/m]	Margin [μ V/m]
F _{MID}	185.691	31.13	36.02	pk	150	-113.98
F _{MID}	200.000	31.38	37.07	pk	150	-112.93
F _{MID}	993.587	23.27	14.57	pk	500	-485.43
F _{MID}	483.768	27.10	22.65	pk	200	-177.35
F _{MID}	3886.000	40.51	106.05	pk	500	-393.95
F _{MID}	3874.000	40.98	111.94	pk	500	-388.06
F _{MID}	7743.000	41.09	113.37	pk	500	-386.63
F _{MID}	7735.000	41.71	121.76	pk	500	-378.24
F _{MID}	11671.00	45.03	178.44	pk	500	-321.56
F _{MID}	11679.00	44.25	163.12	pk	500	-336.88
Comments: * Physical distance between EUT and measurement antenna. ** Emission level corresponds to ambient noise floor						

ANNEX A Transmitter radiated spurious emissions

Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

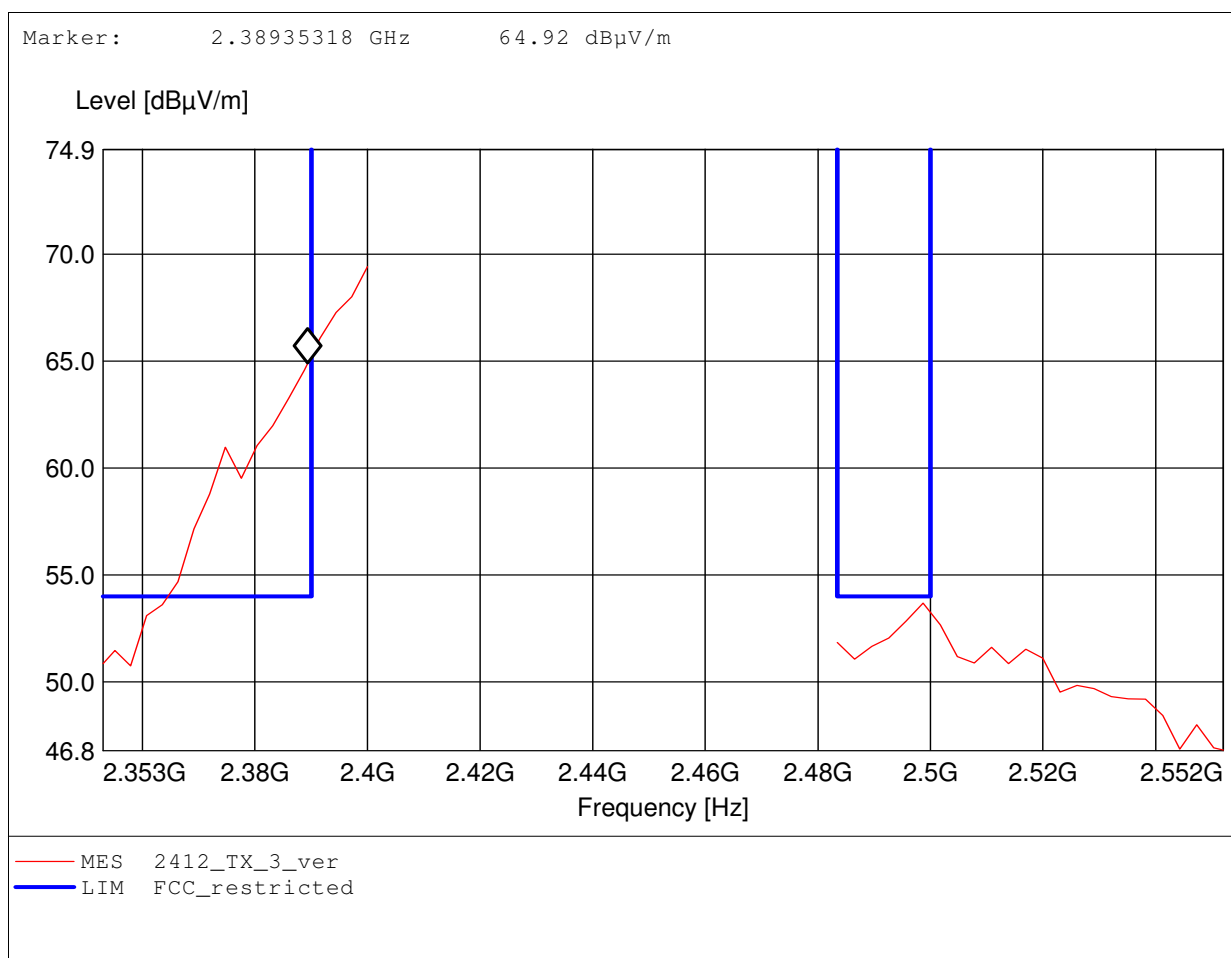
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 69.41dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

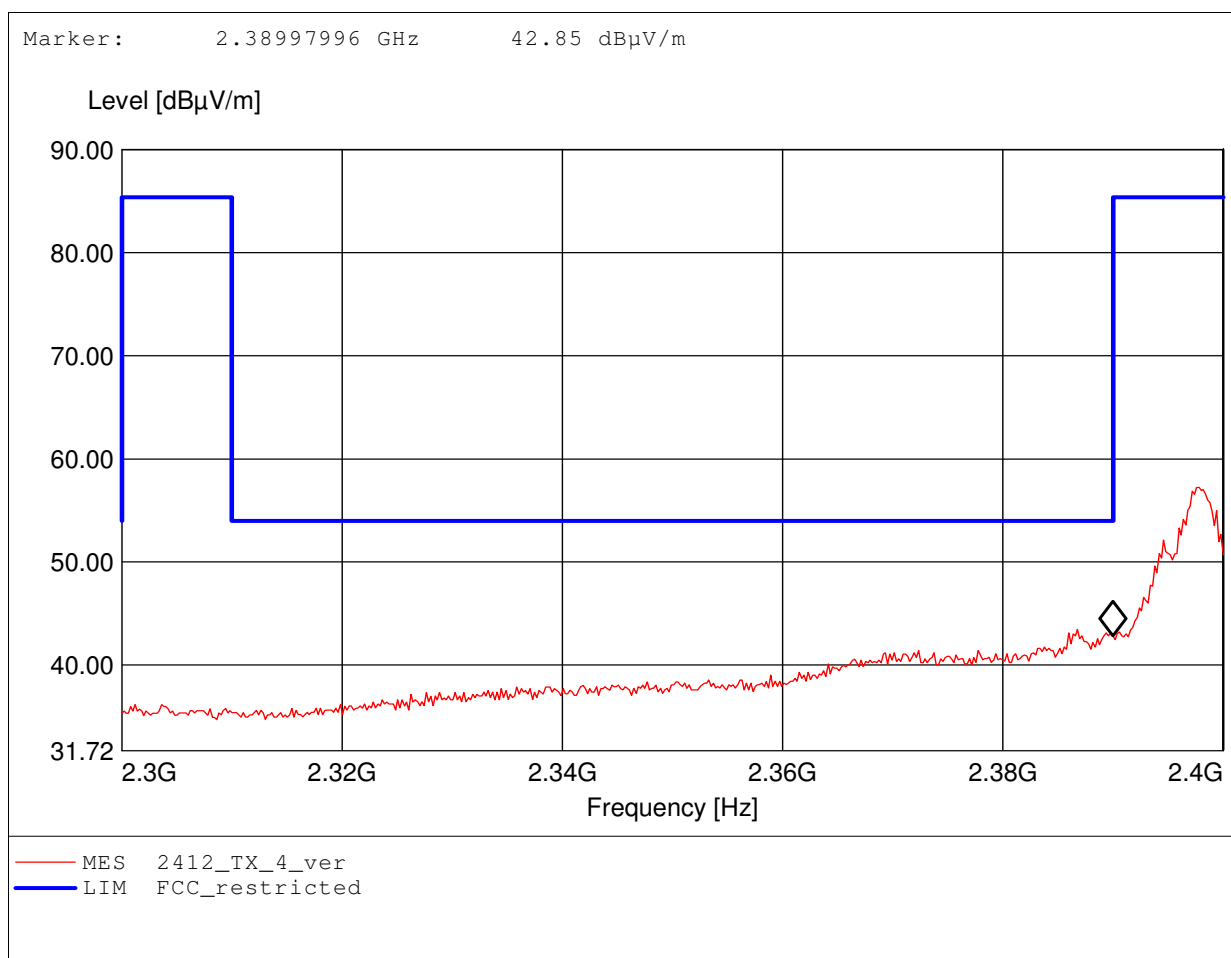
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 69.41dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

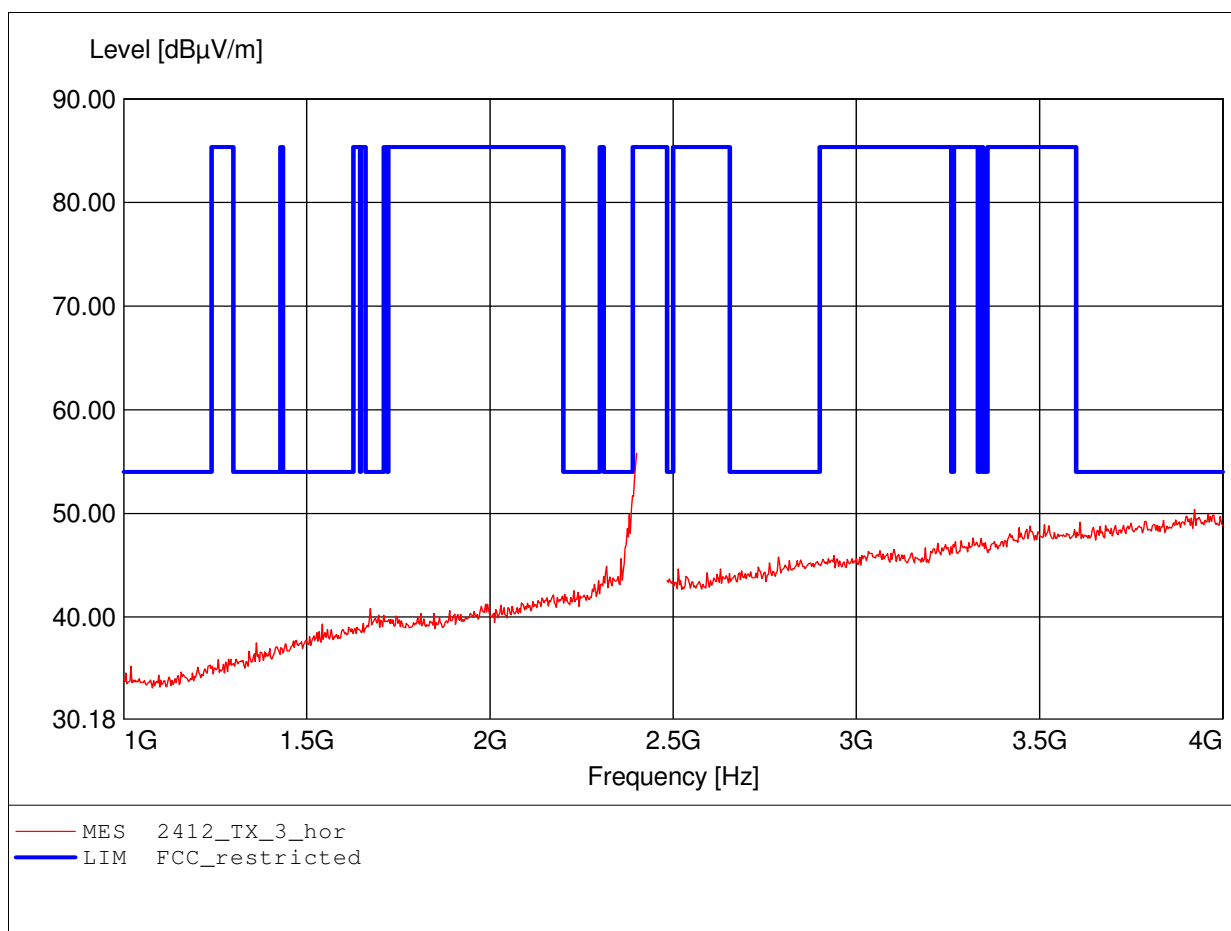
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.398GHz, Emax: 57.27dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

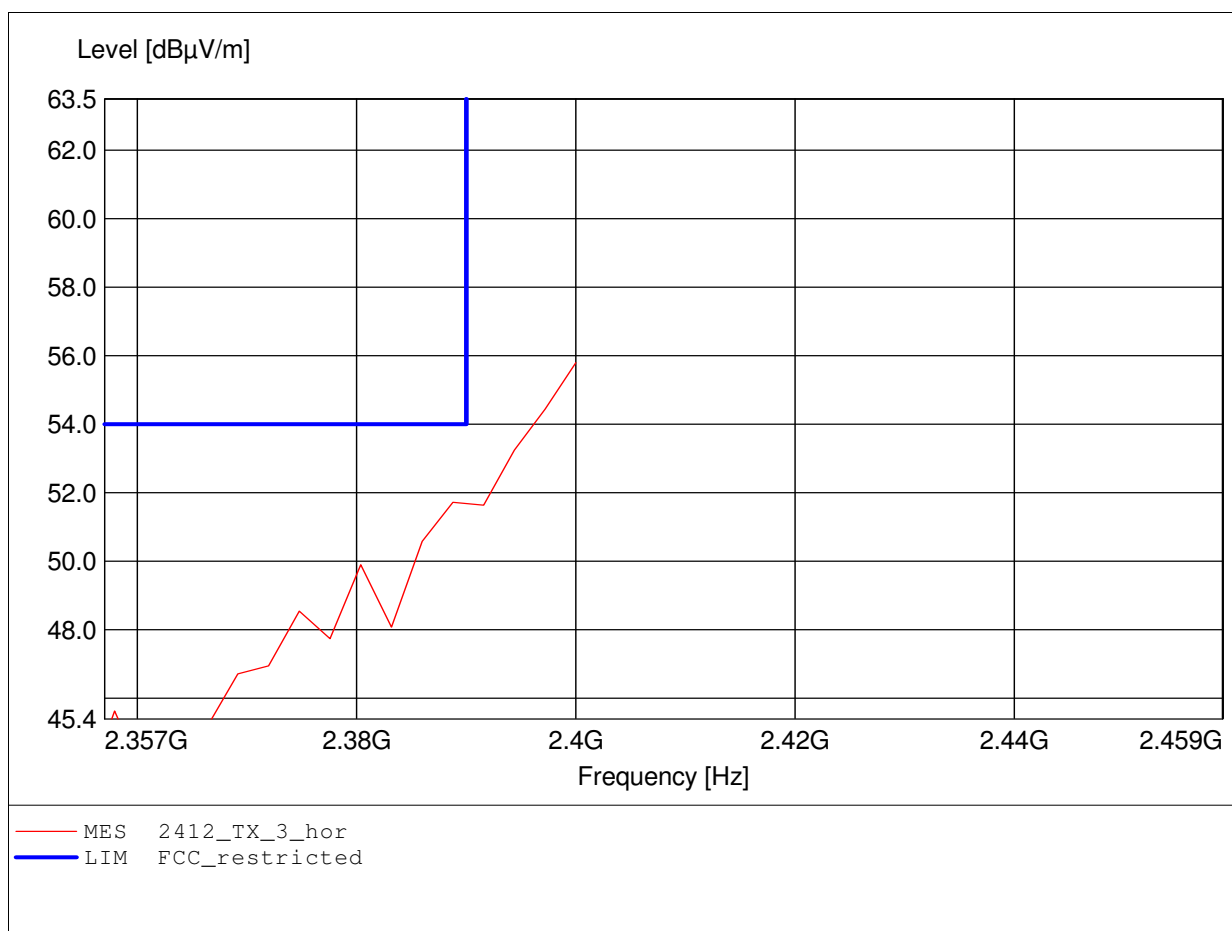
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EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 55.80dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

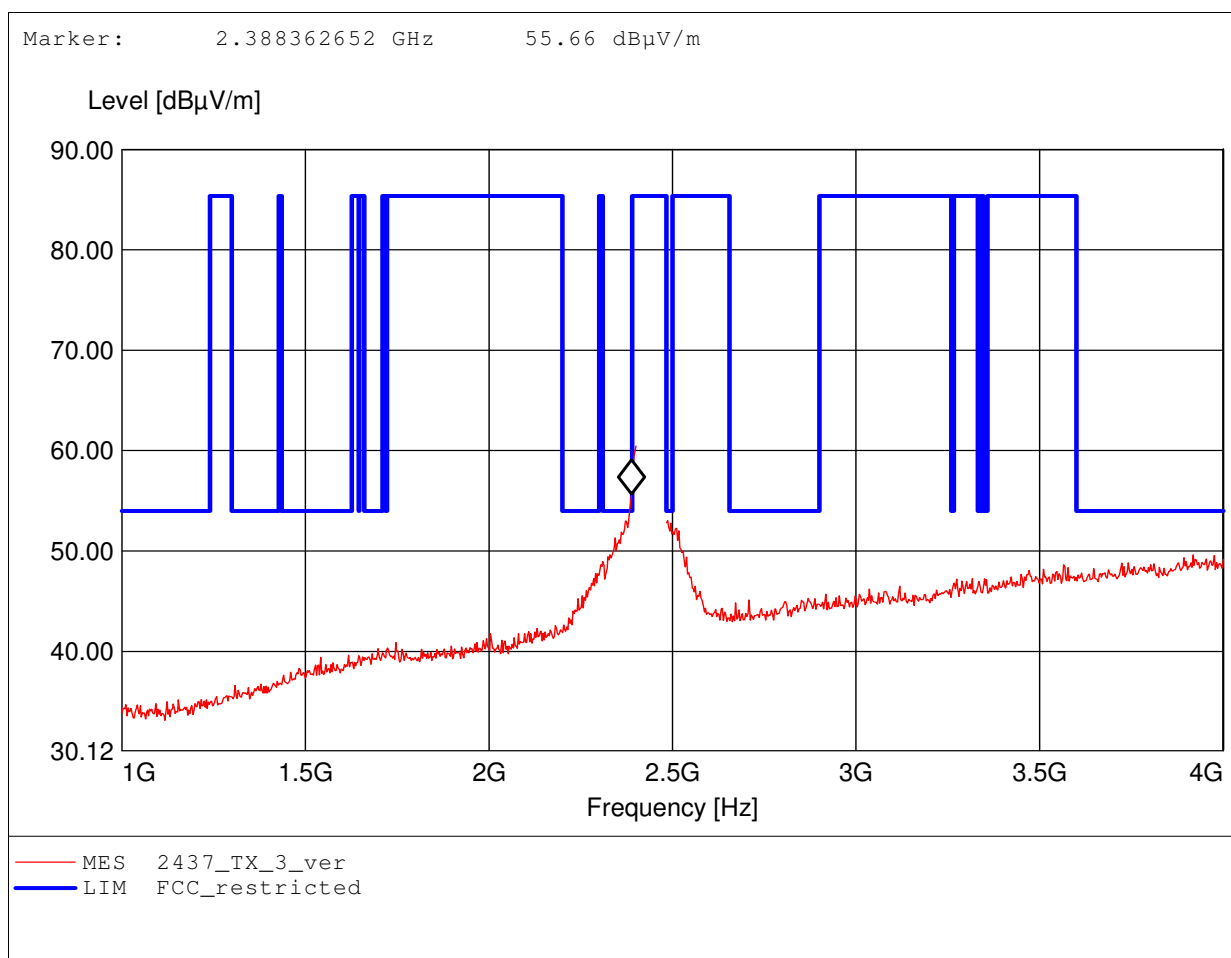
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 55.80dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

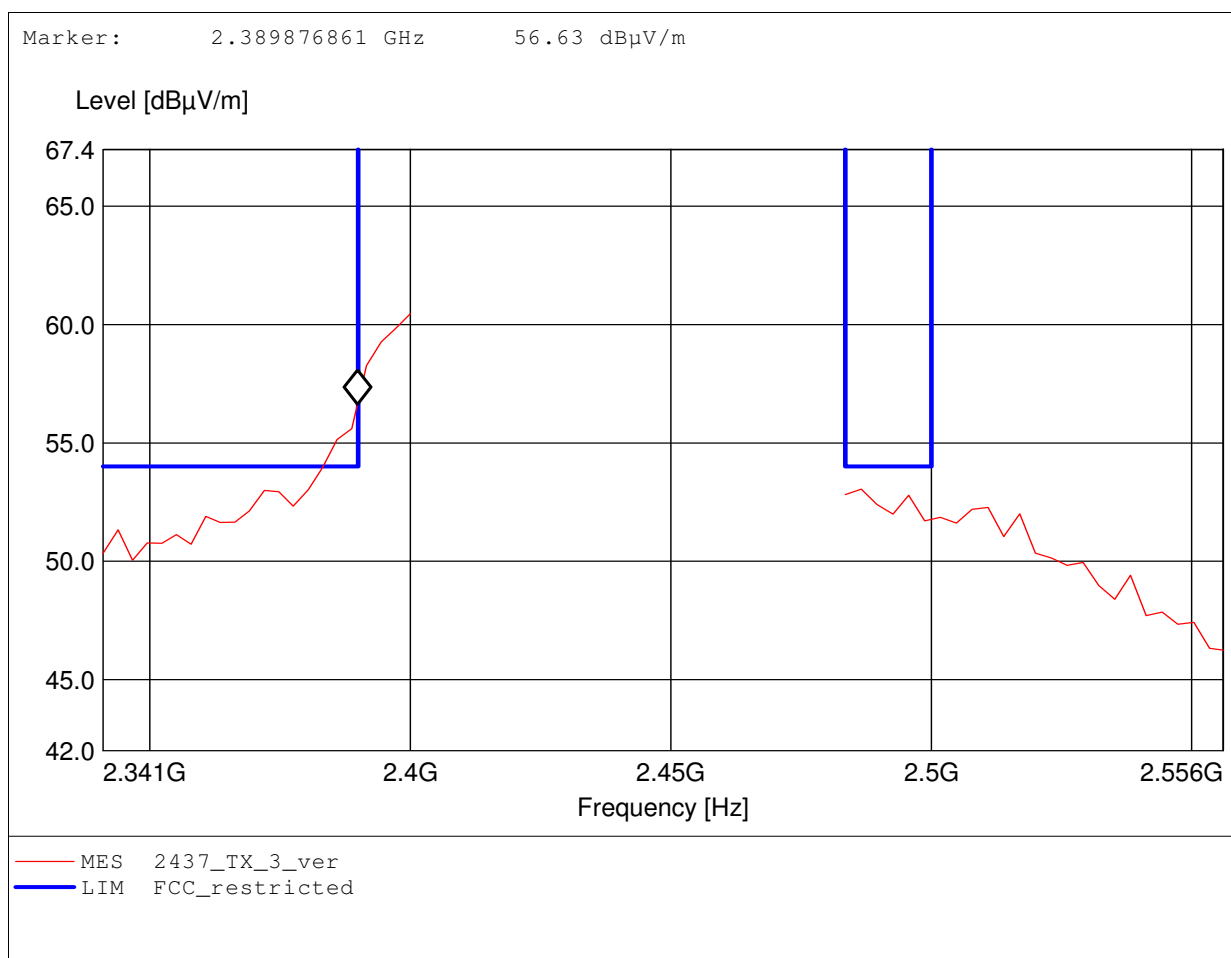
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 60.45dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

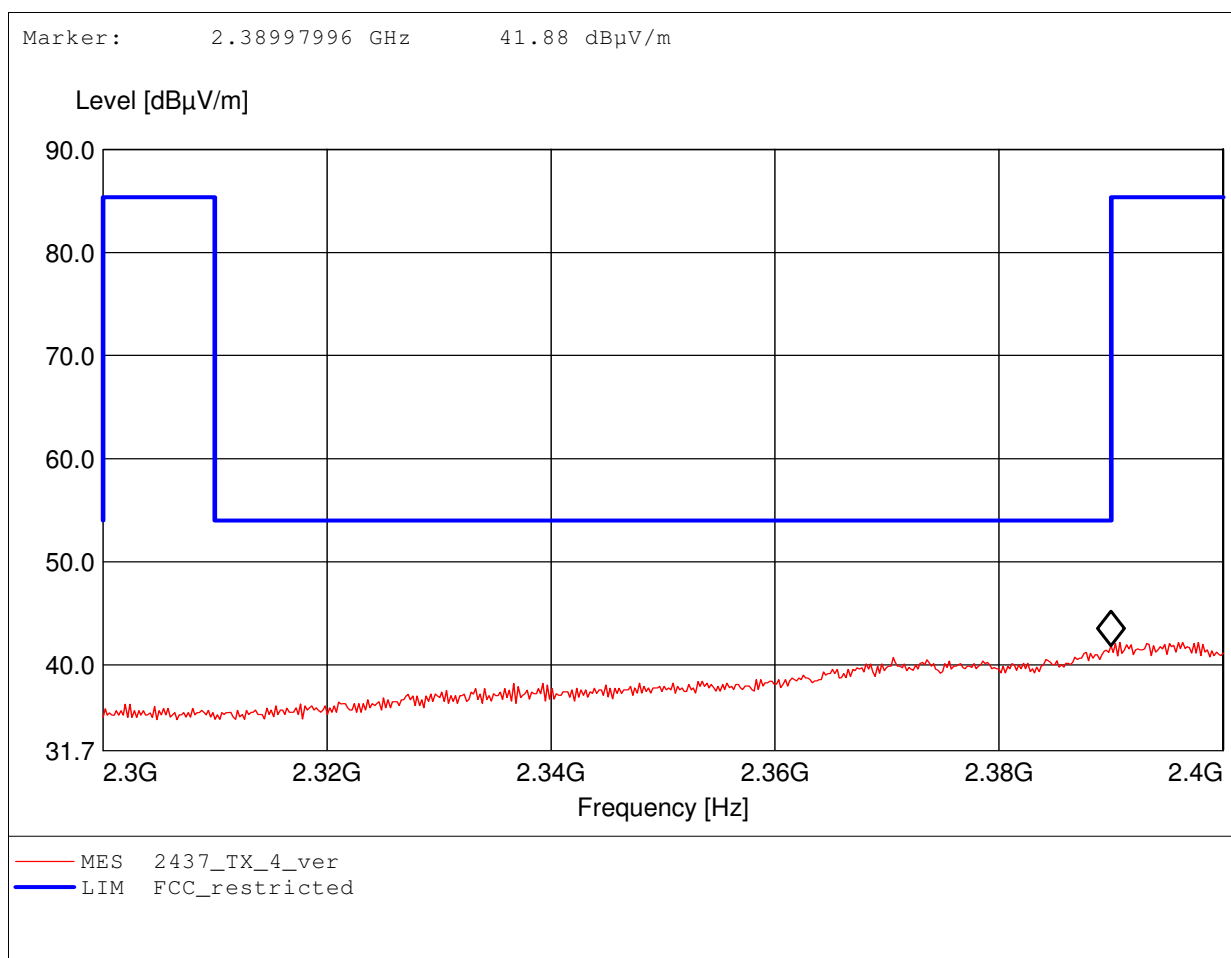
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 60.45dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

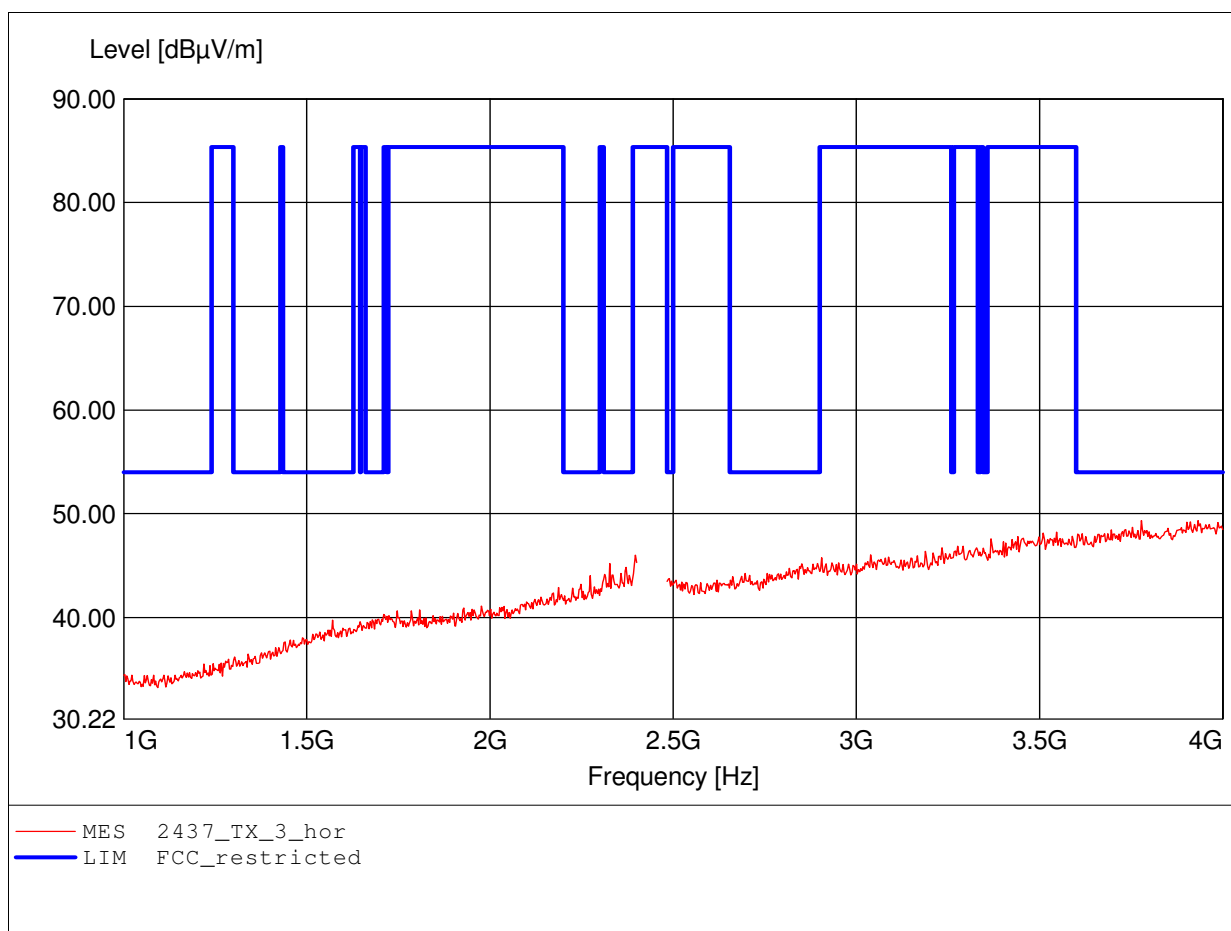
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.398GHz, Emax: 42.20dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

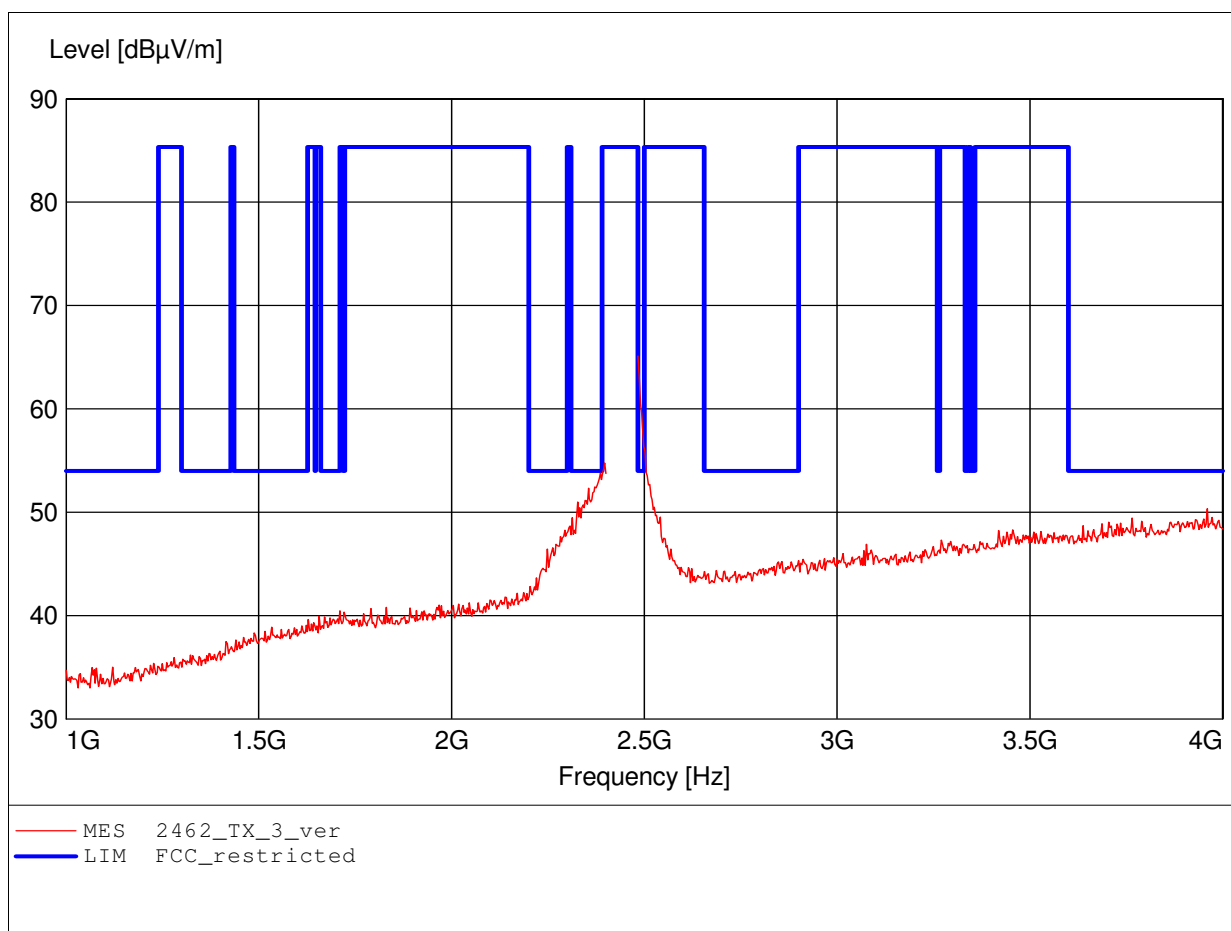
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 3.778GHz, Emax: 49.35dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

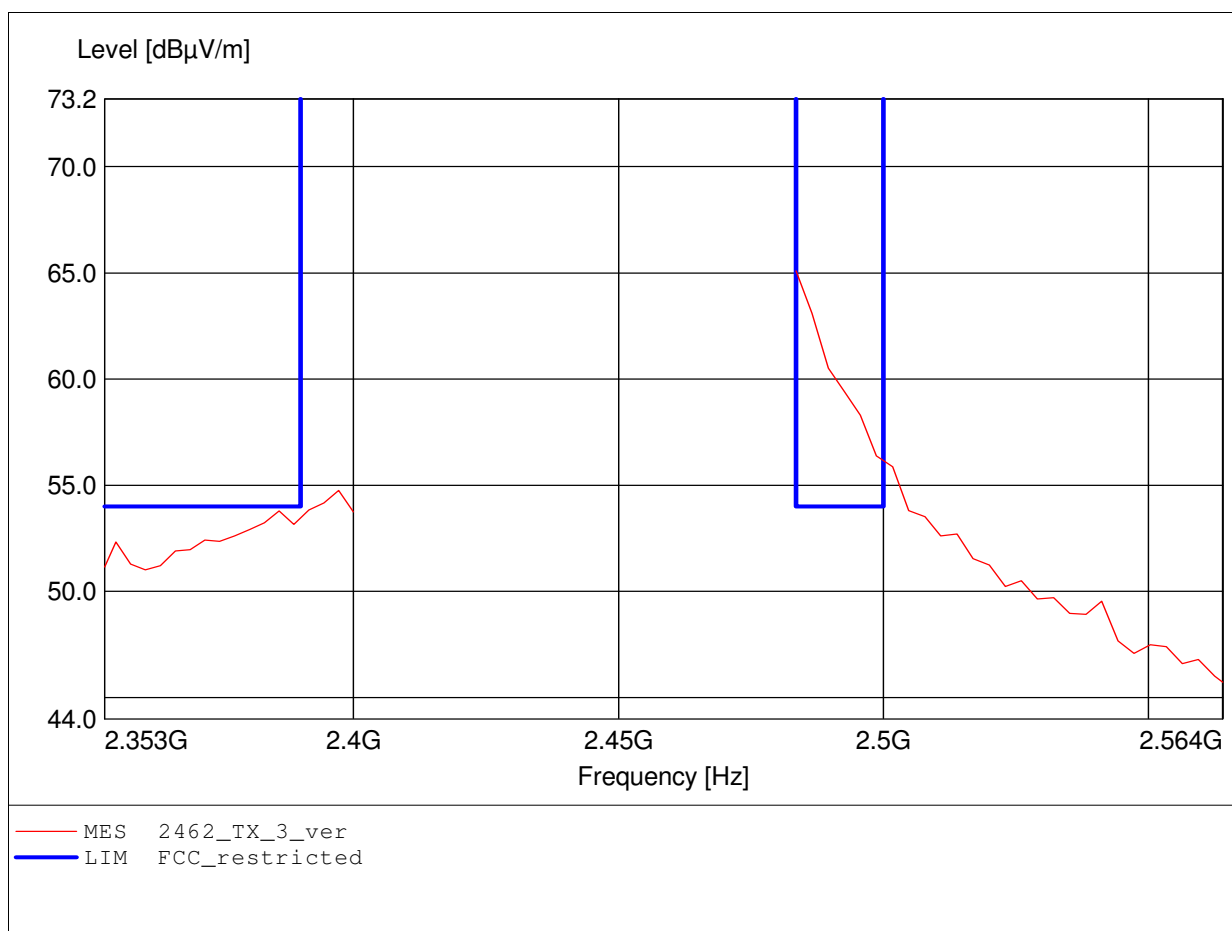
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 65.10dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

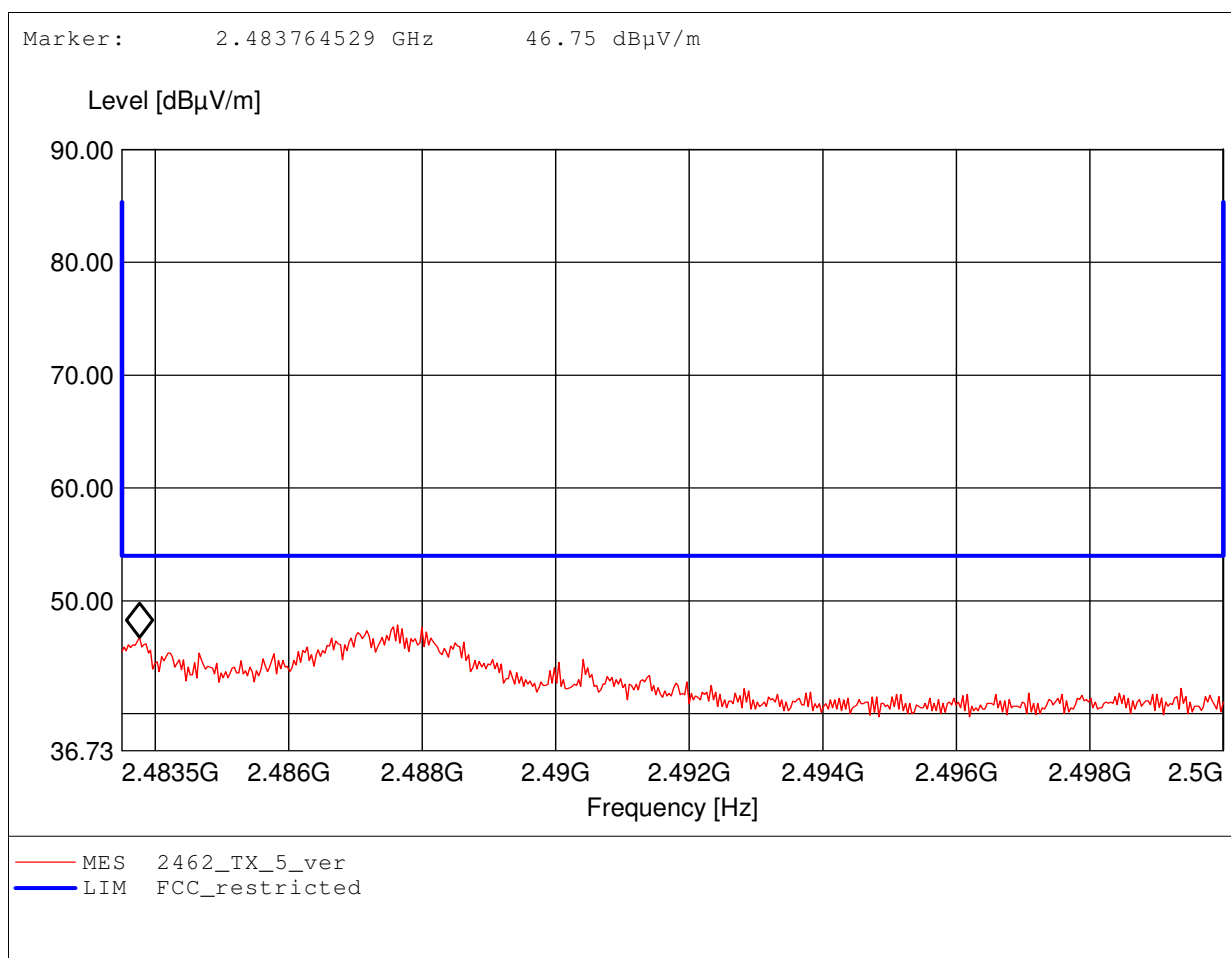
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 65.10dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

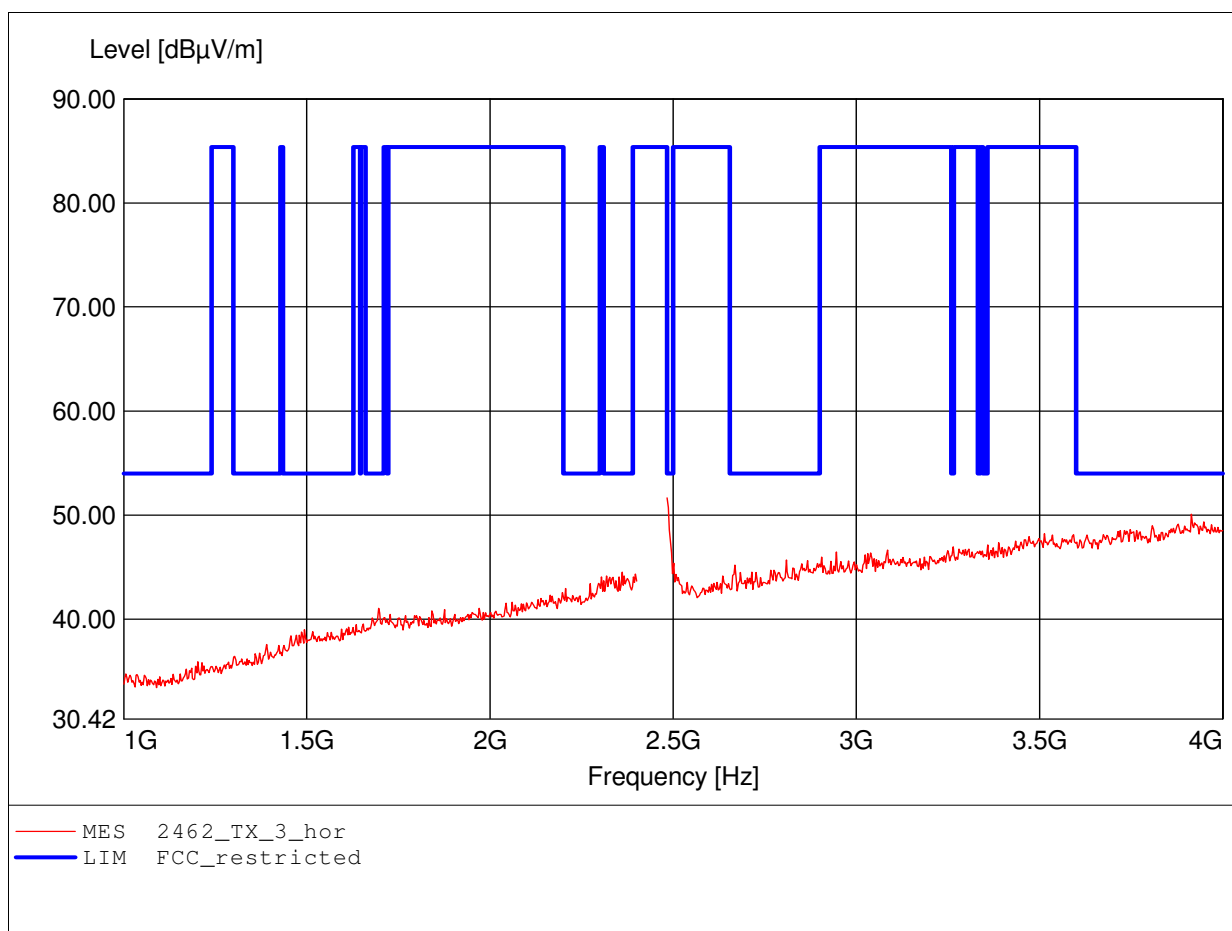
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.488GHz, Emax: 47.85dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

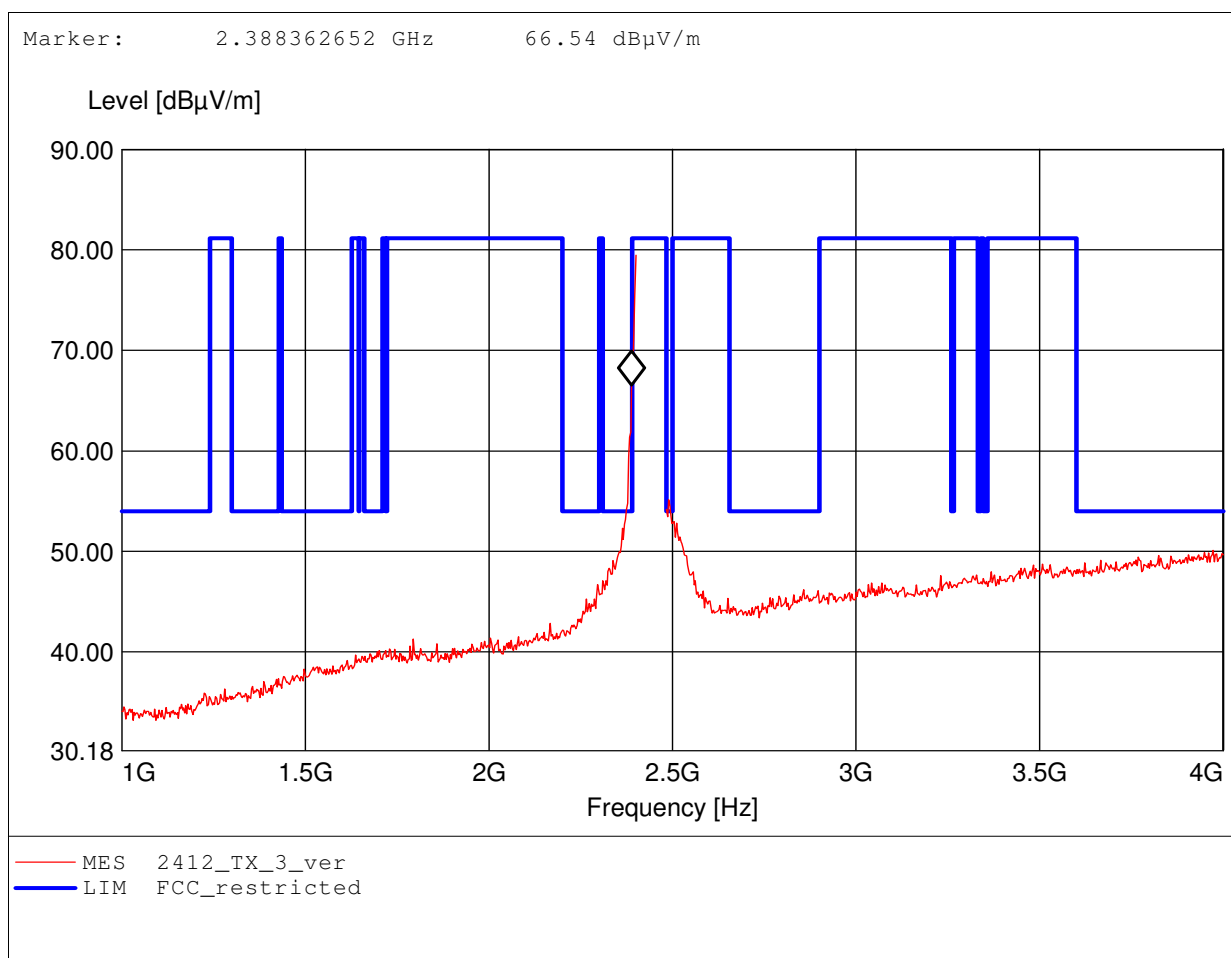
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 51.65dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

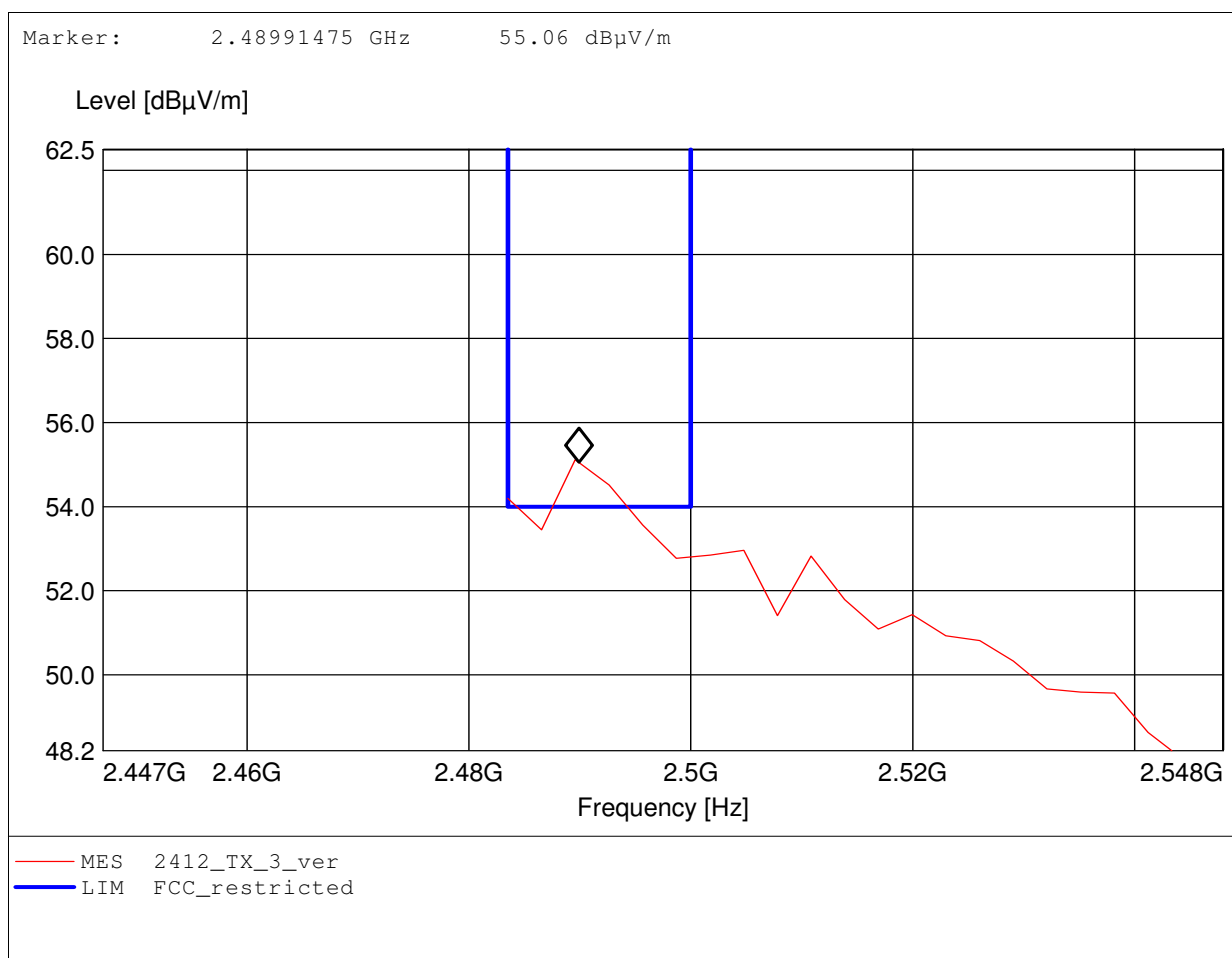
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 79.48dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

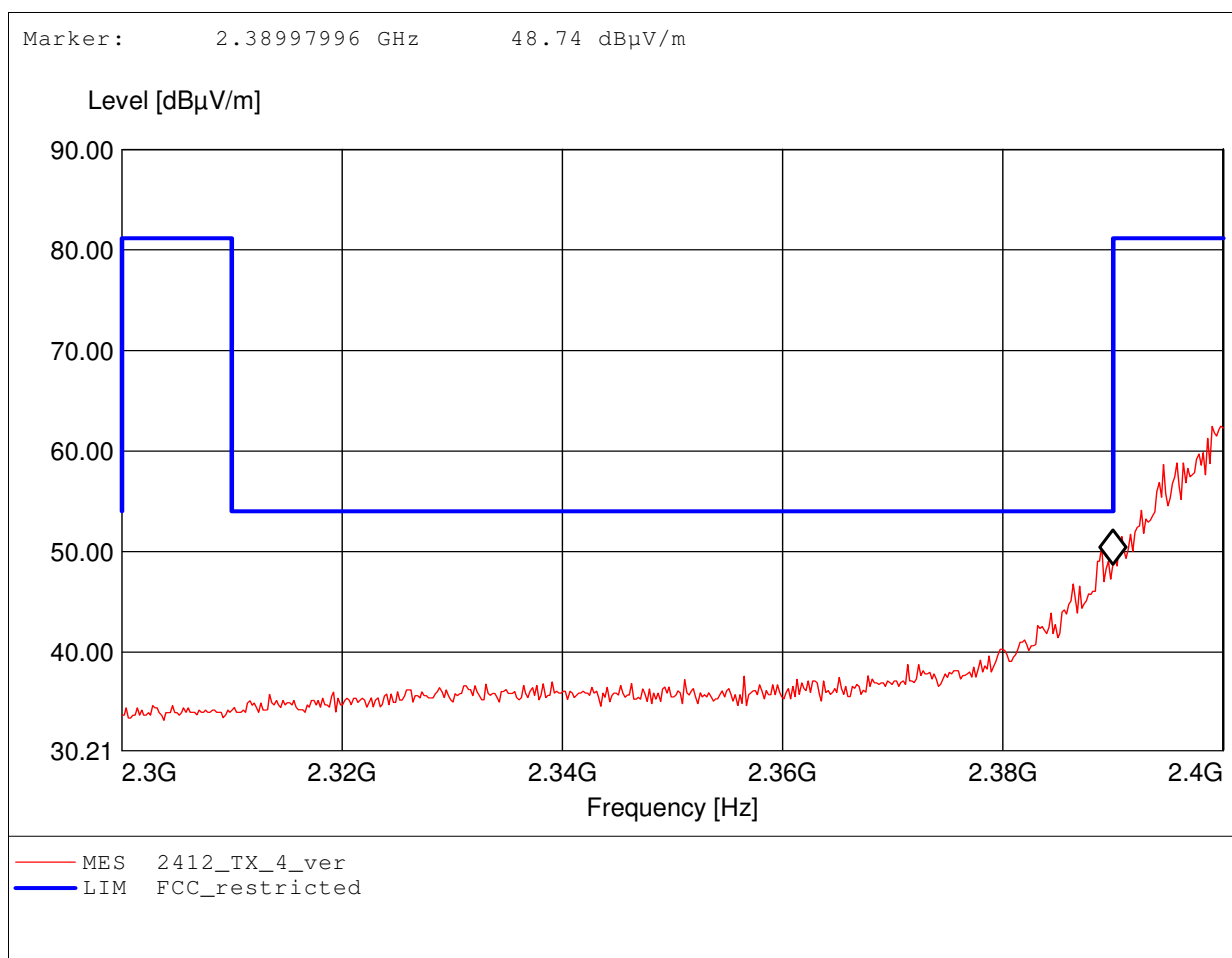
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 79.48dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

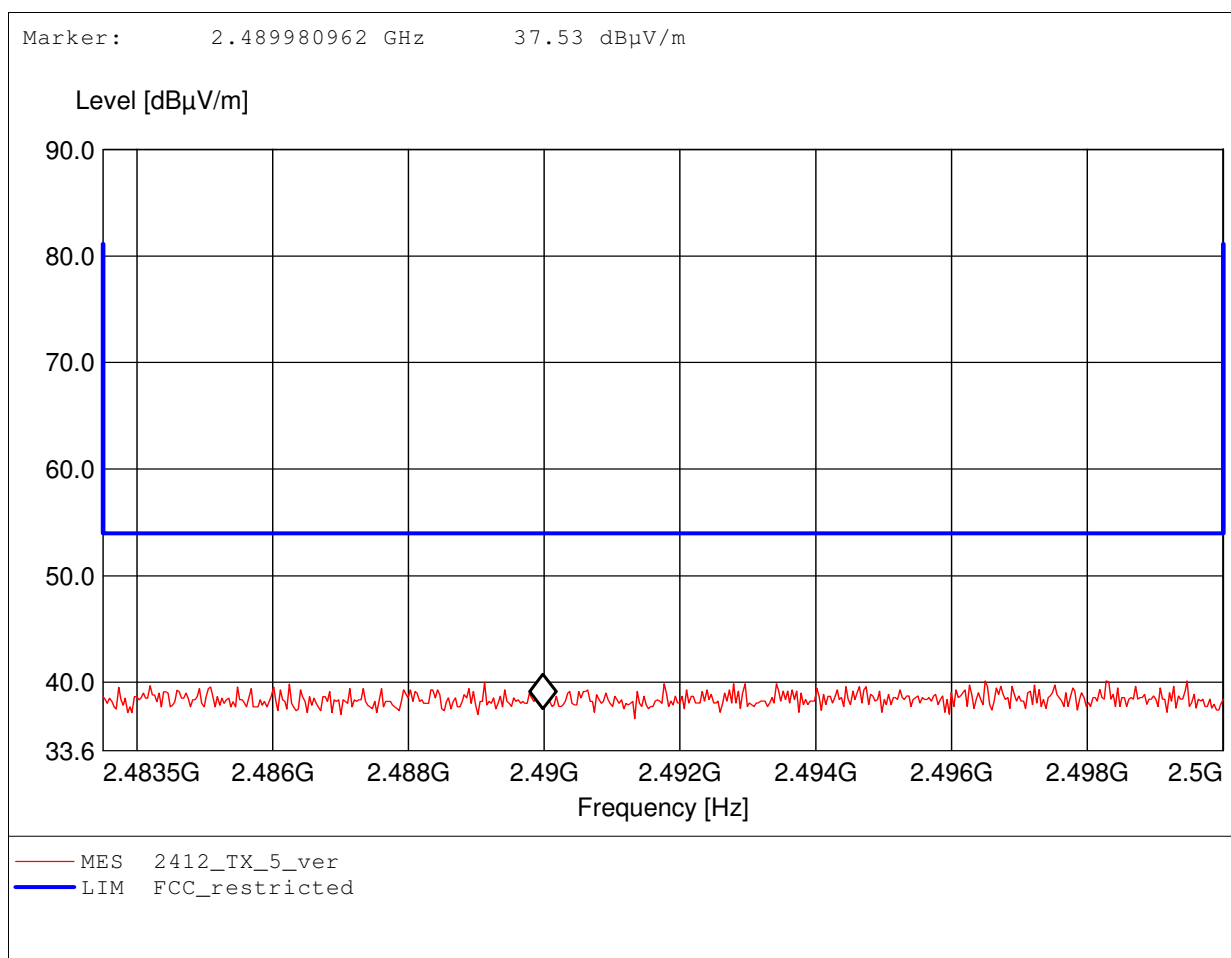
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.400GHz, Emax: 62.48dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

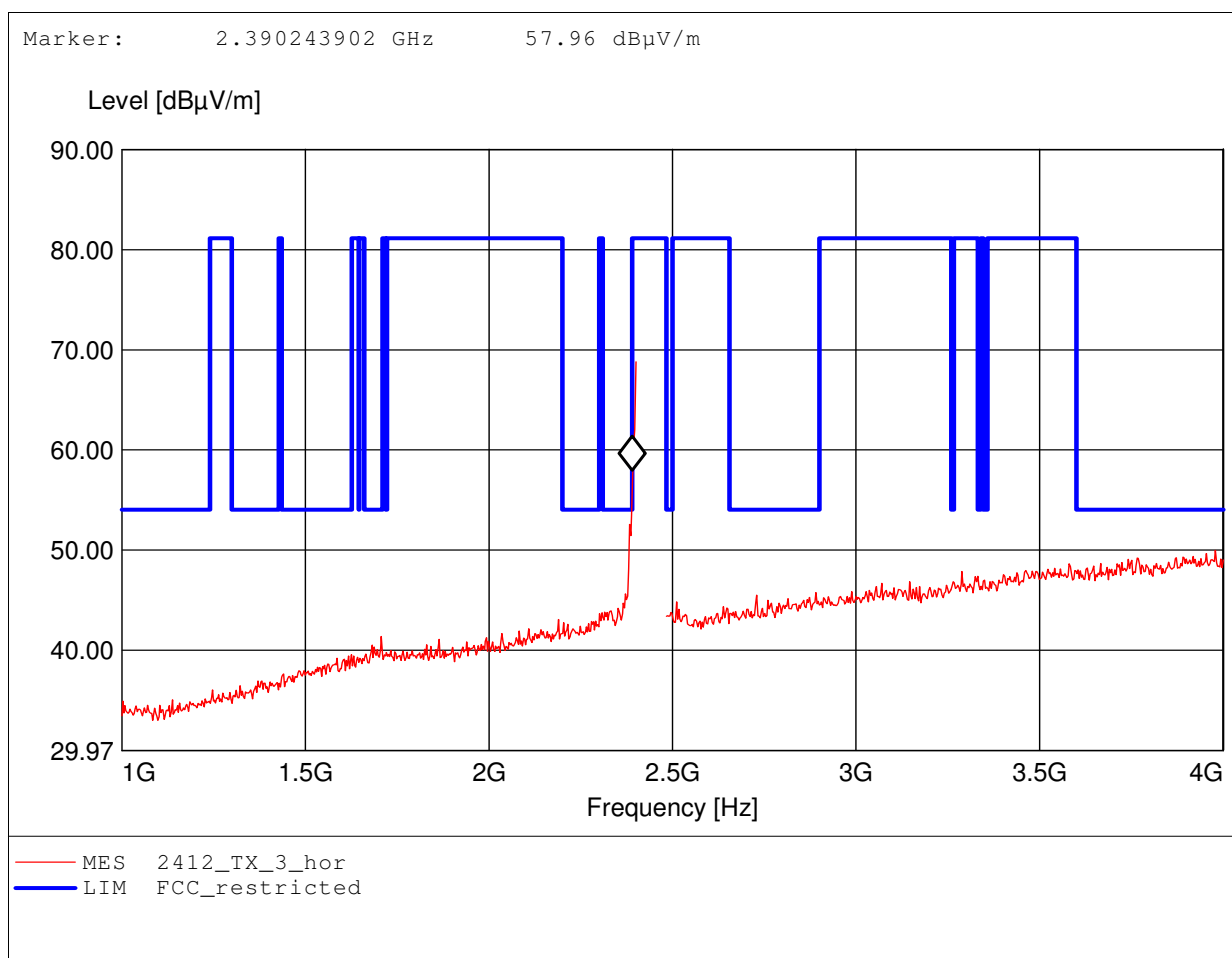
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.499GHz, Emax: 40.16dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

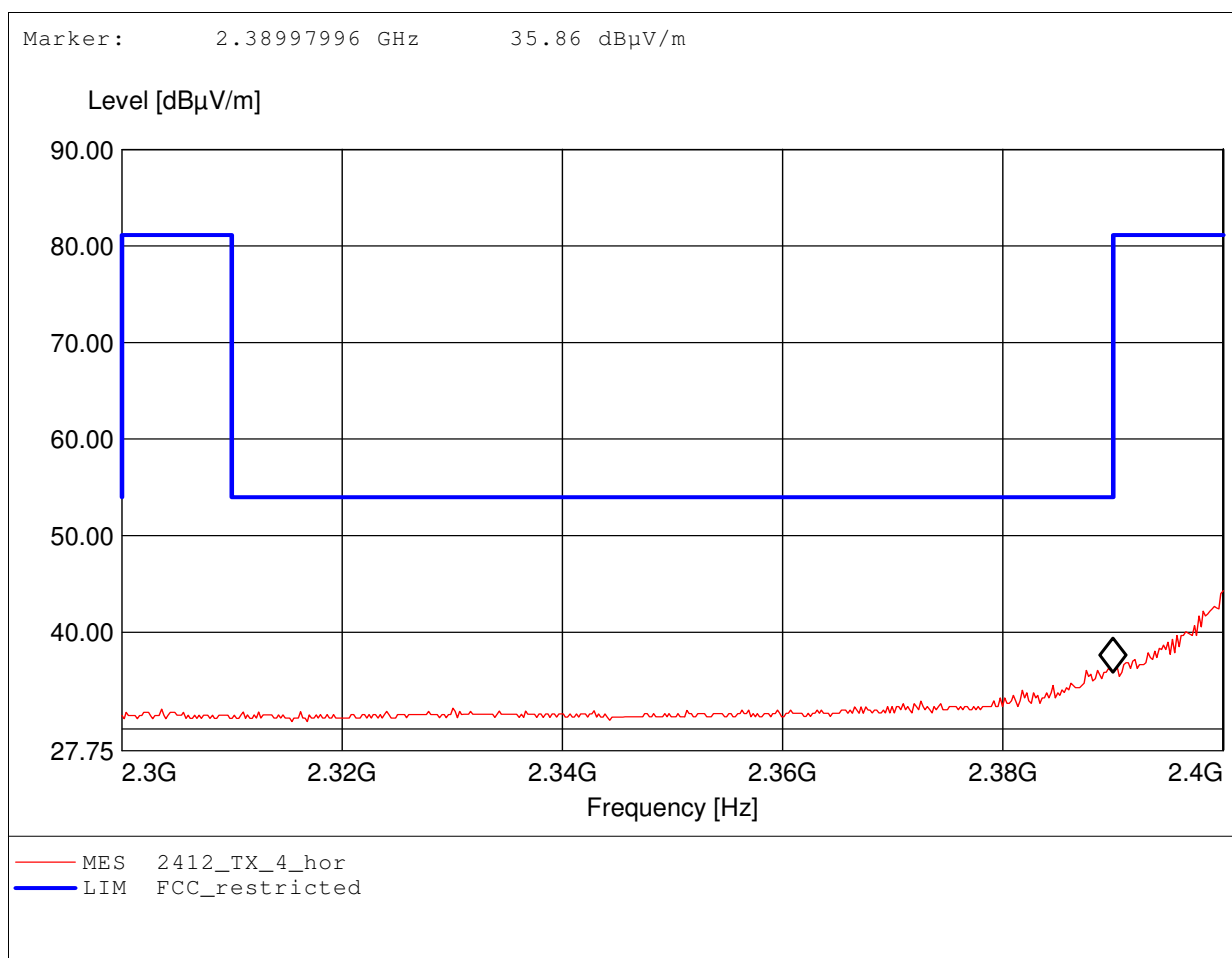
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 68.80dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

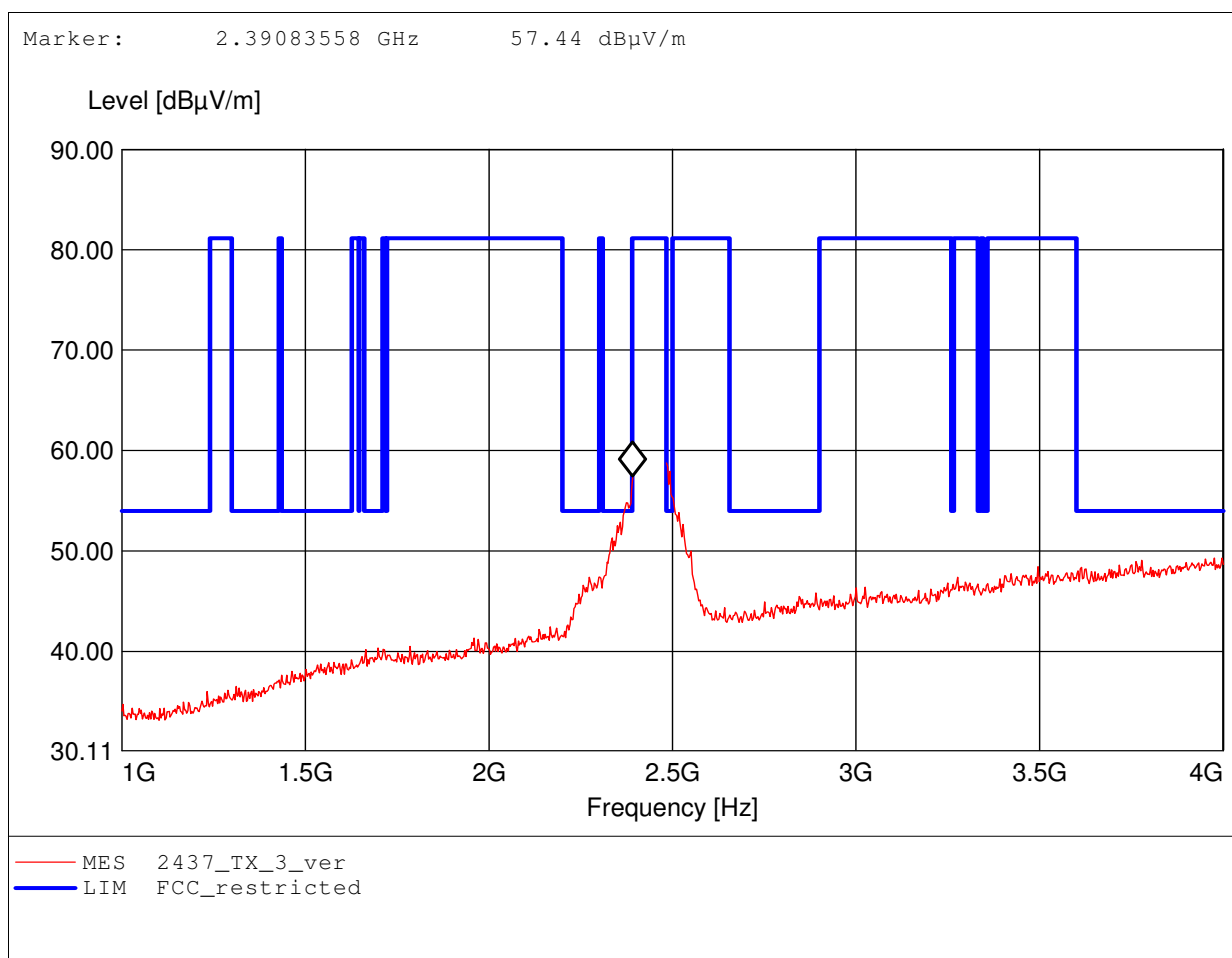
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.400GHz, Emax: 44.32dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

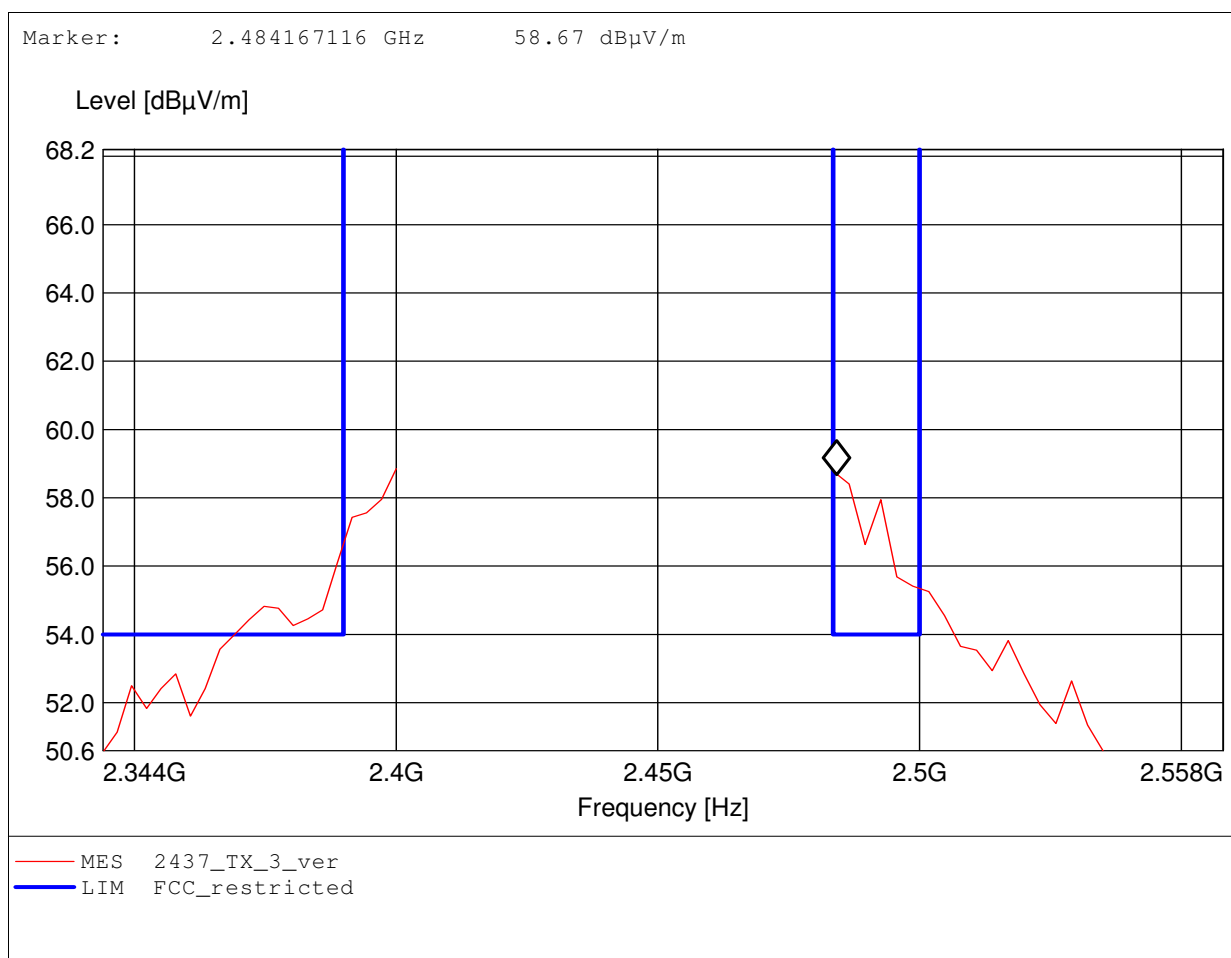
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 58.85dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

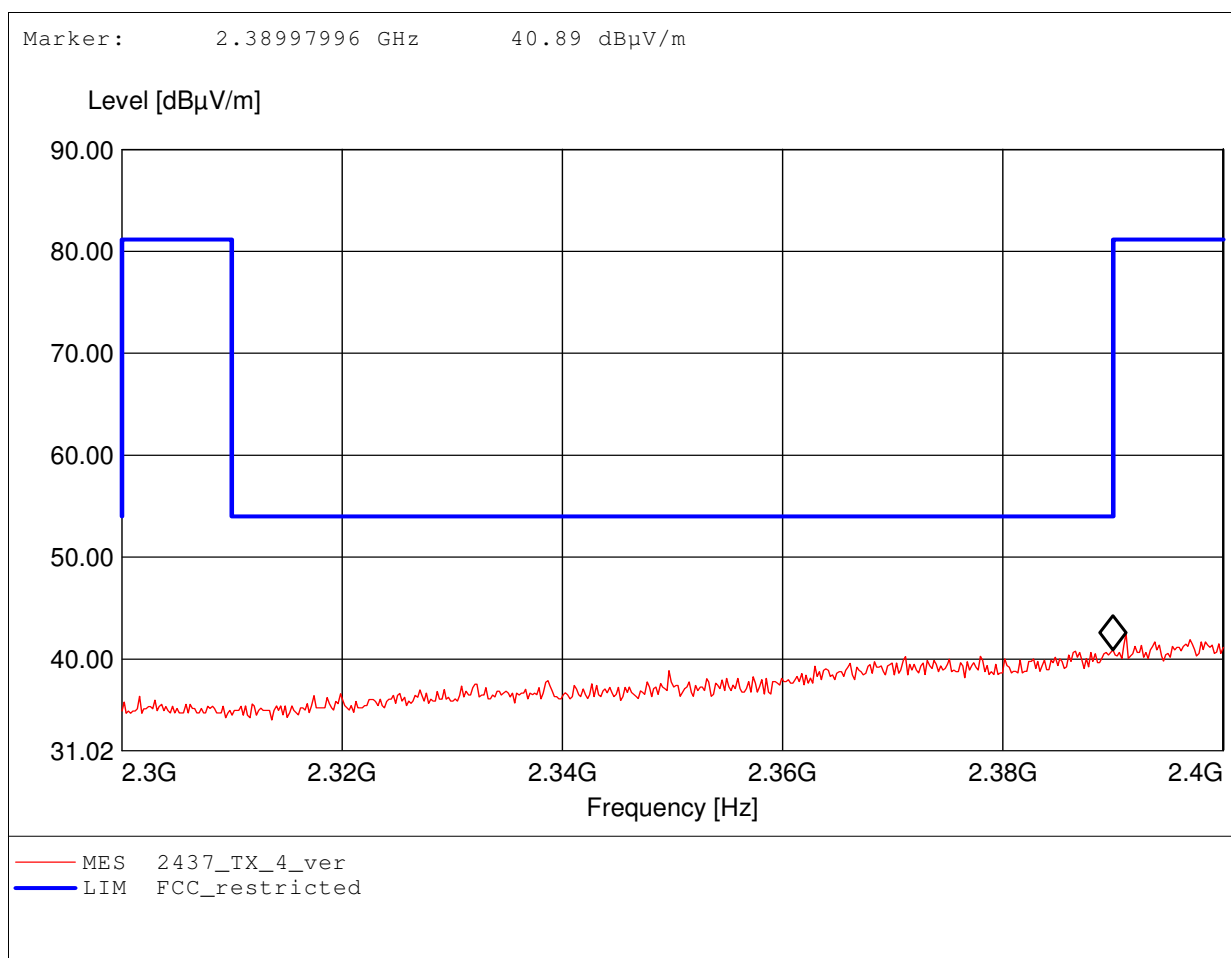
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 58.85dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

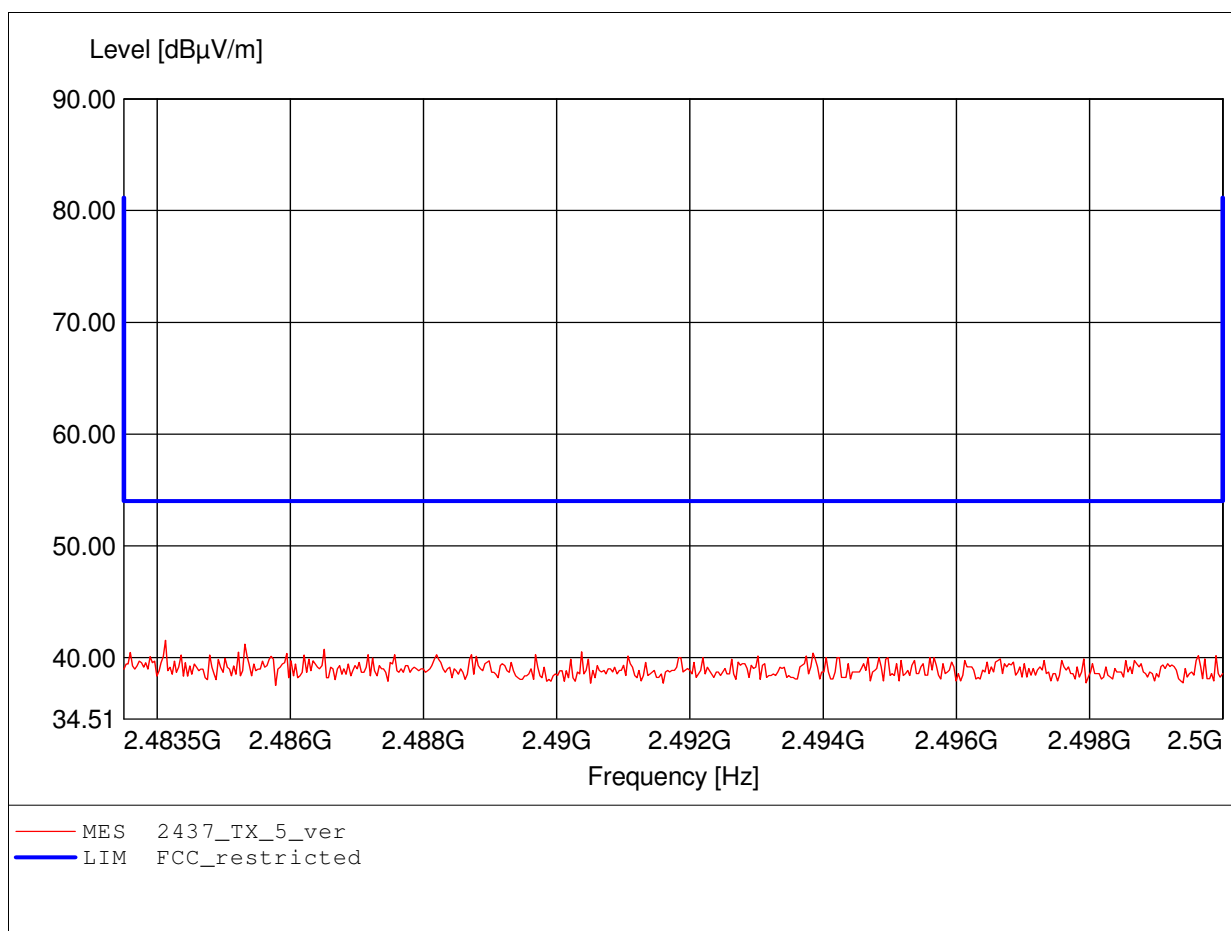
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.391GHz, Emax: 42.48dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

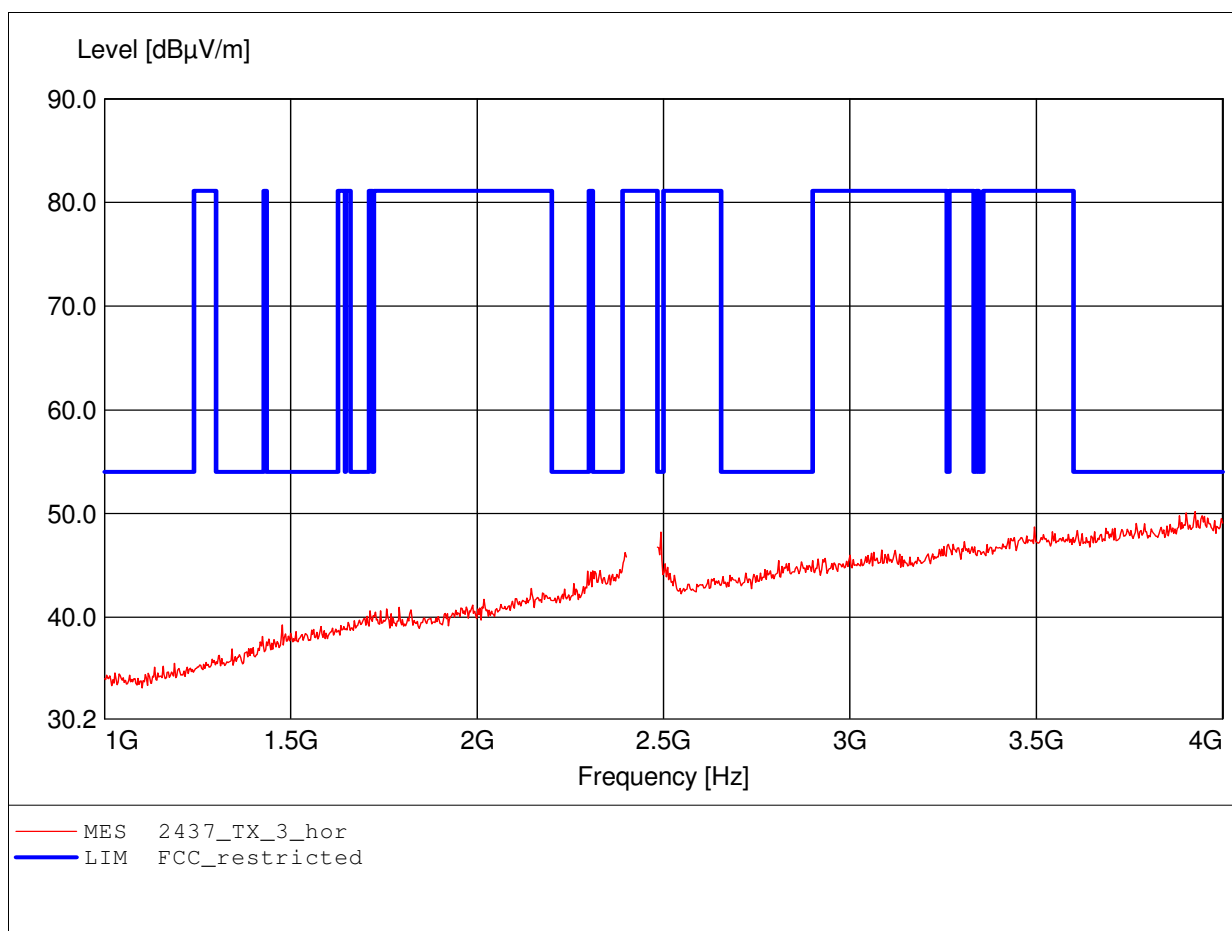
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.484GHz, Emax: 41.54dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

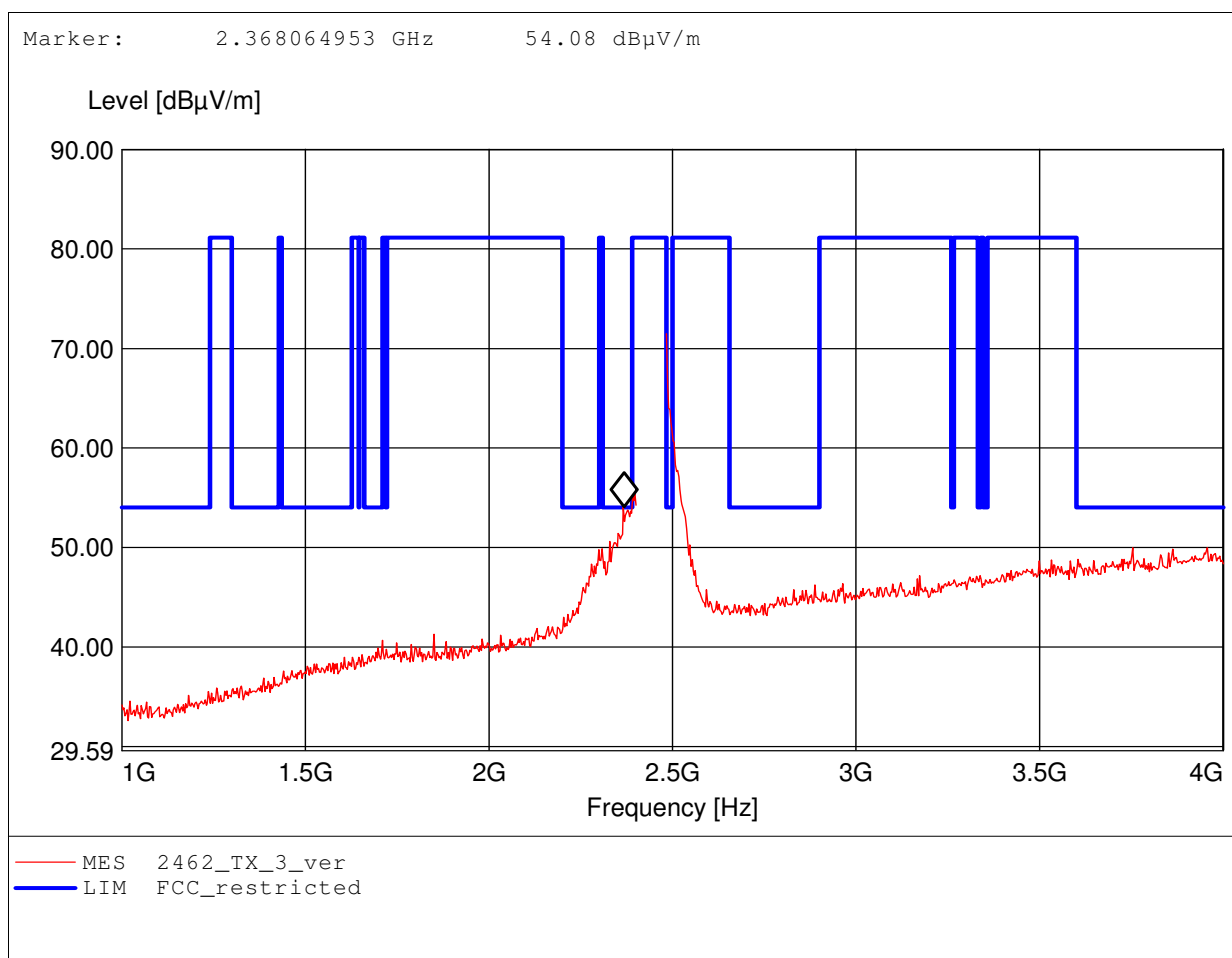
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 3.927GHz, Emax: 50.18dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

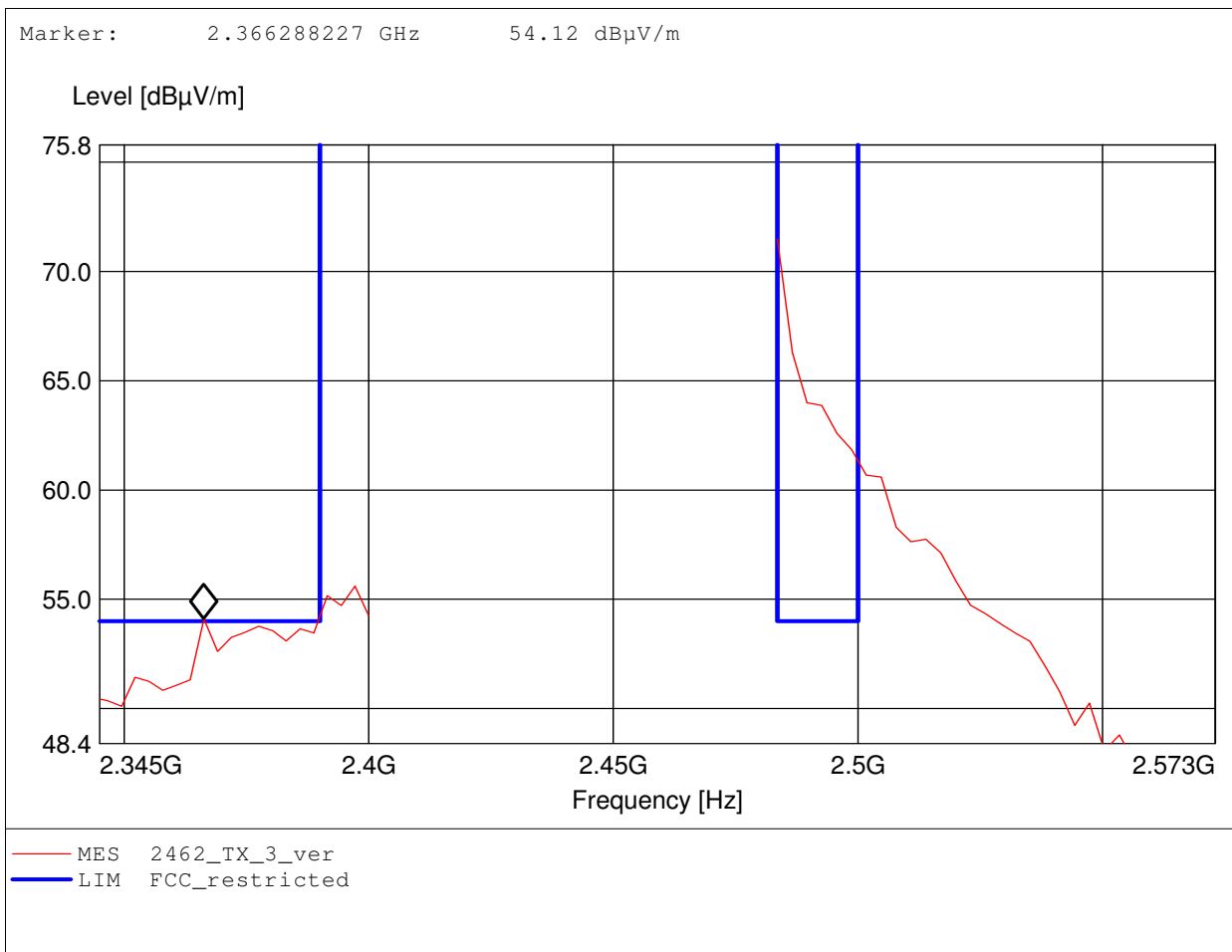
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 71.50dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

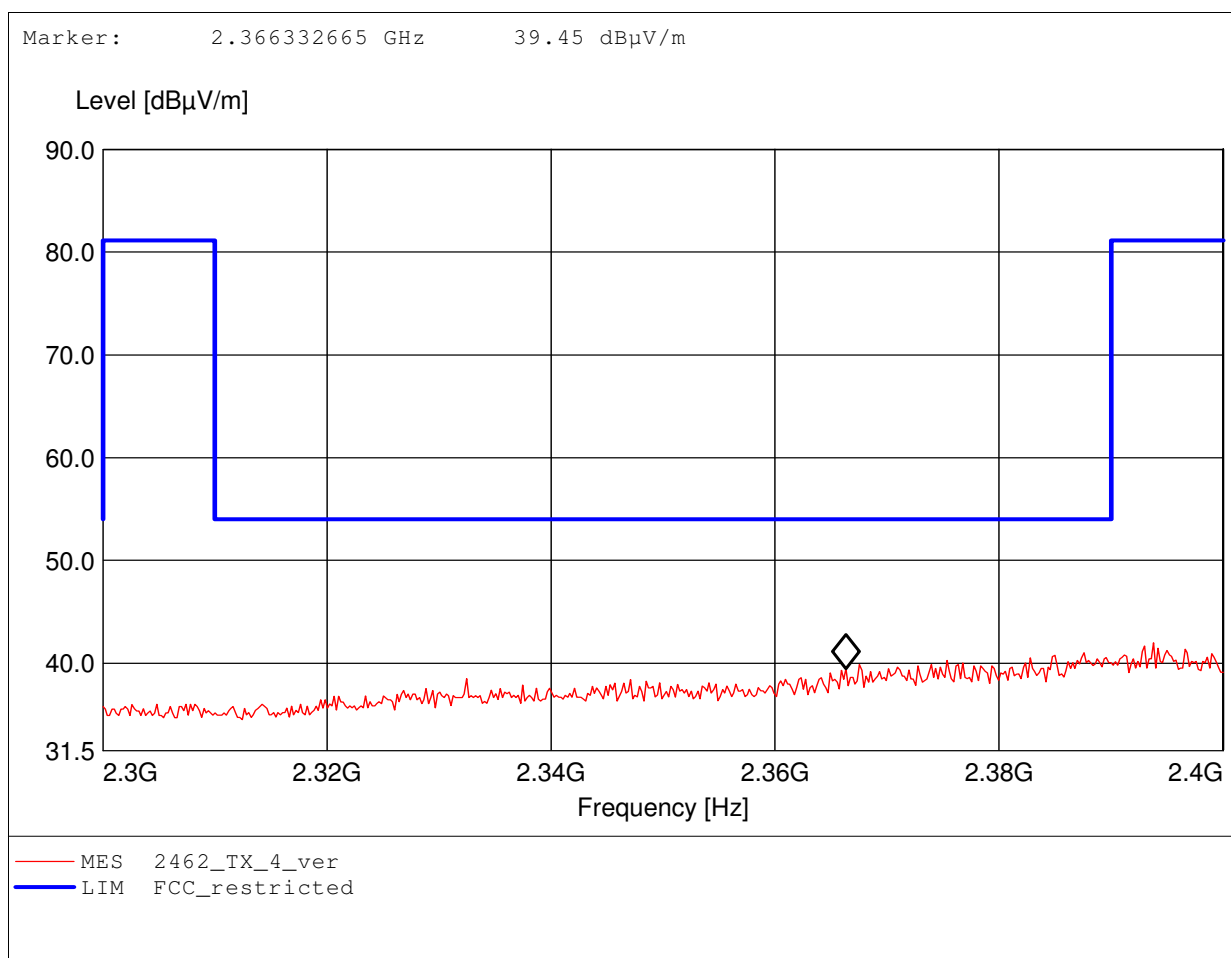
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 71.50dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

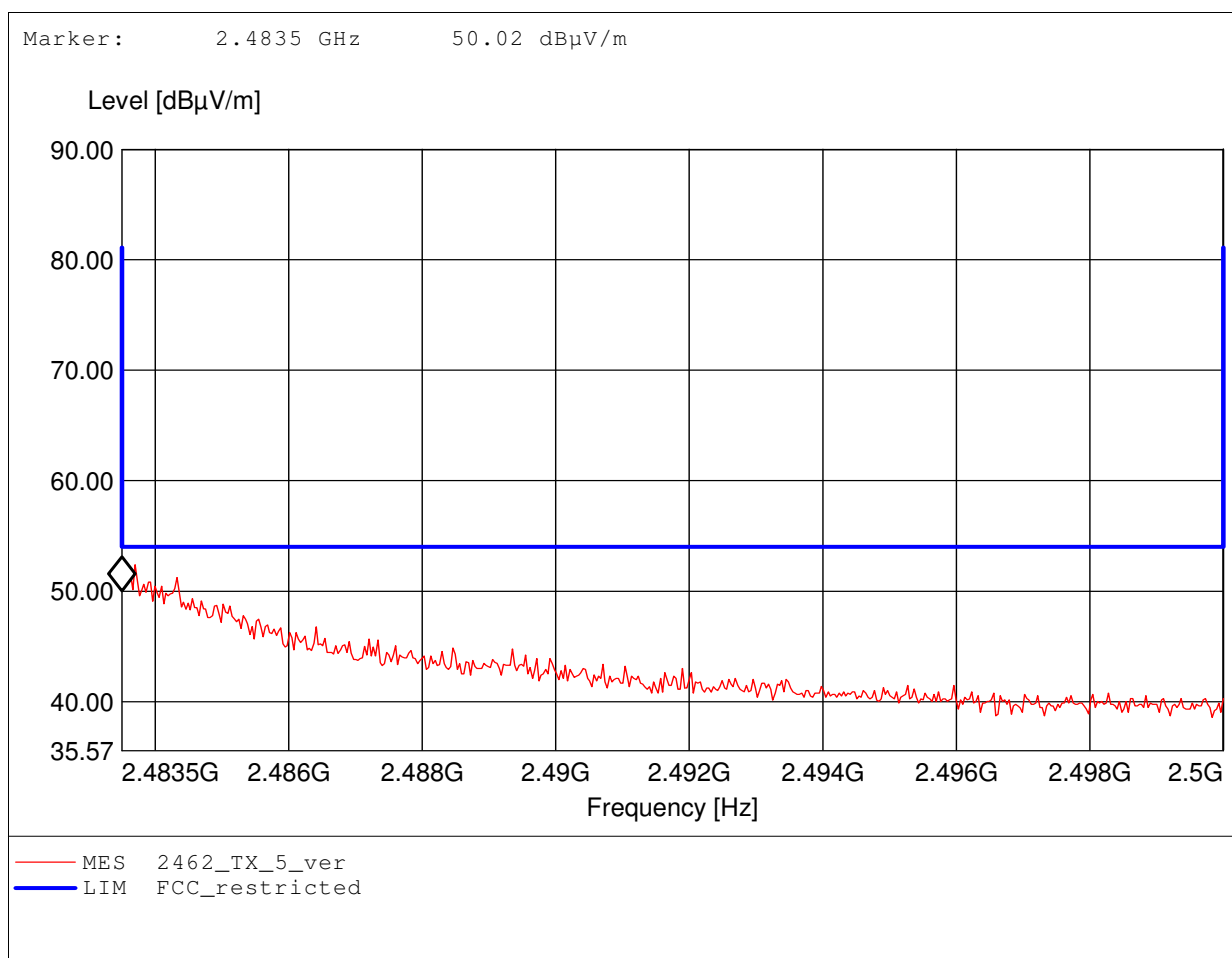
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.394GHz, Emax: 41.99dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

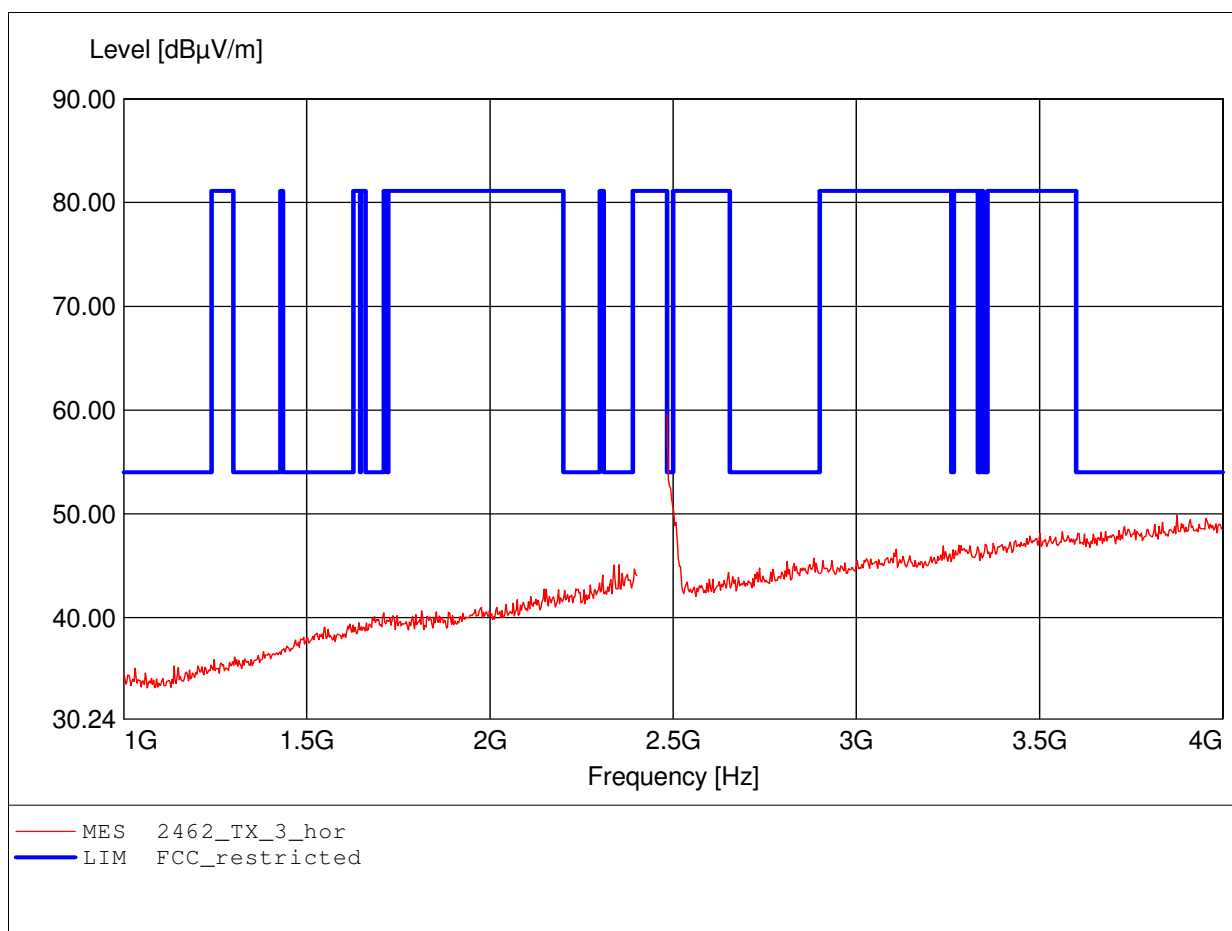
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.484GHz, Emax: 52.39dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

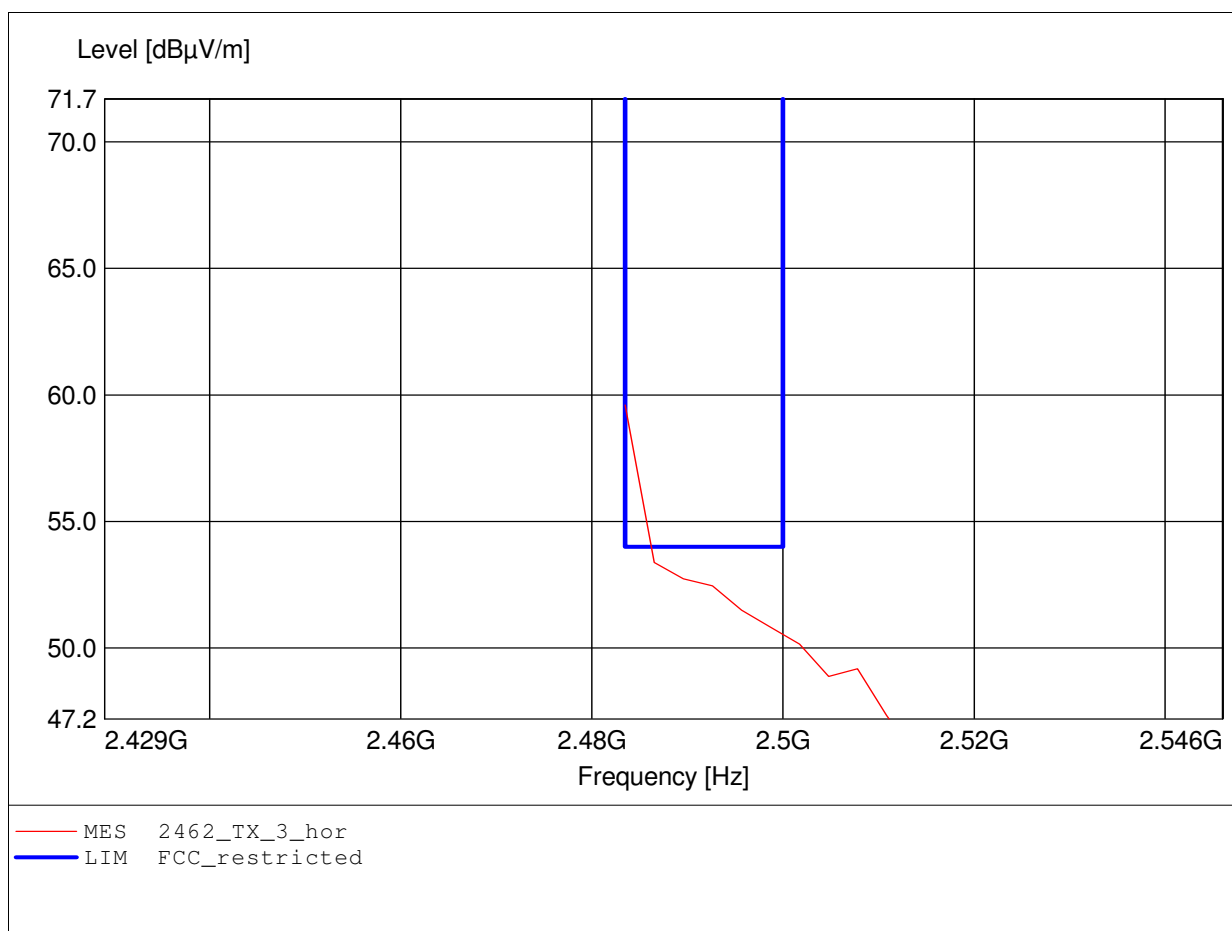
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 59.61dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

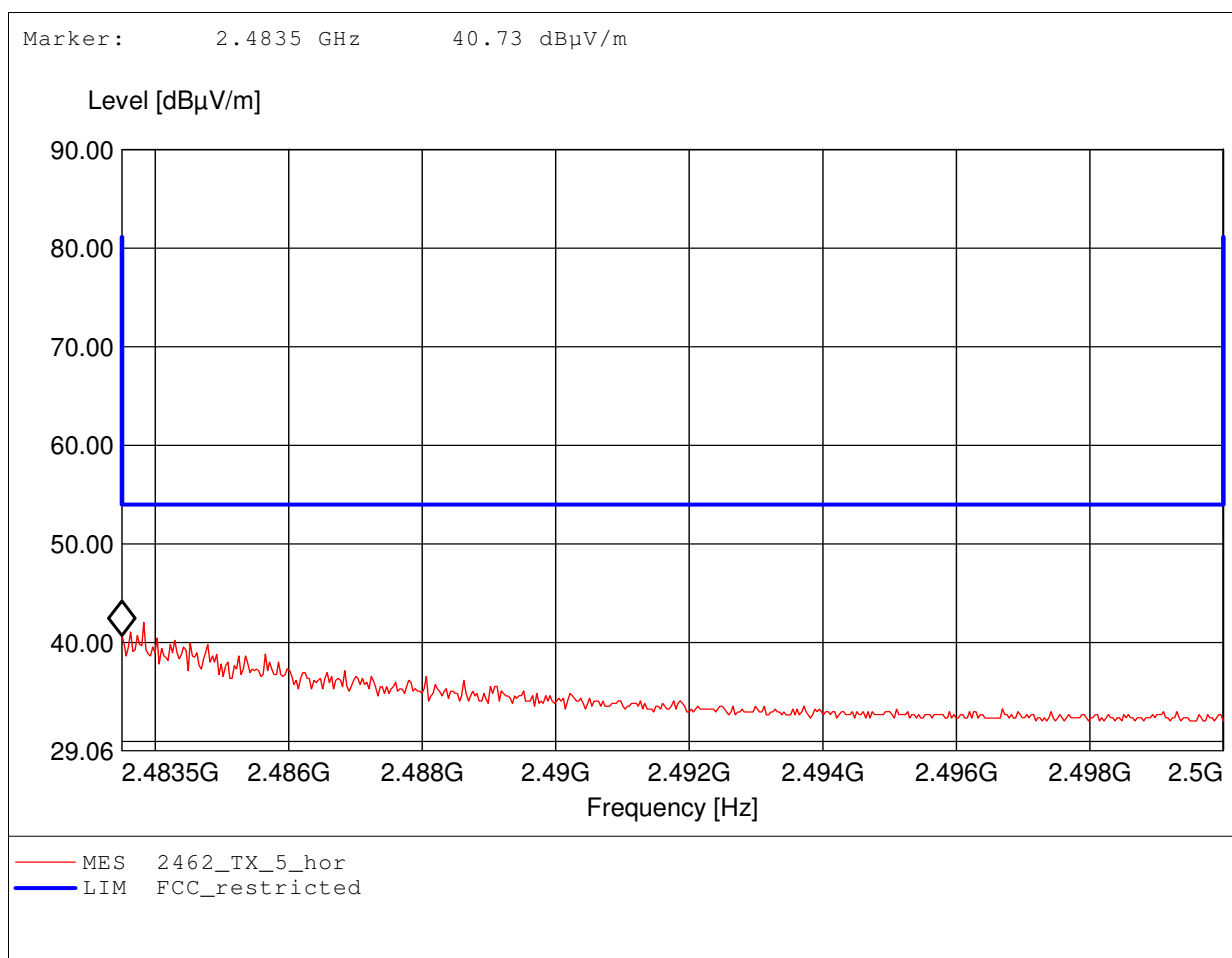
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 59.61dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

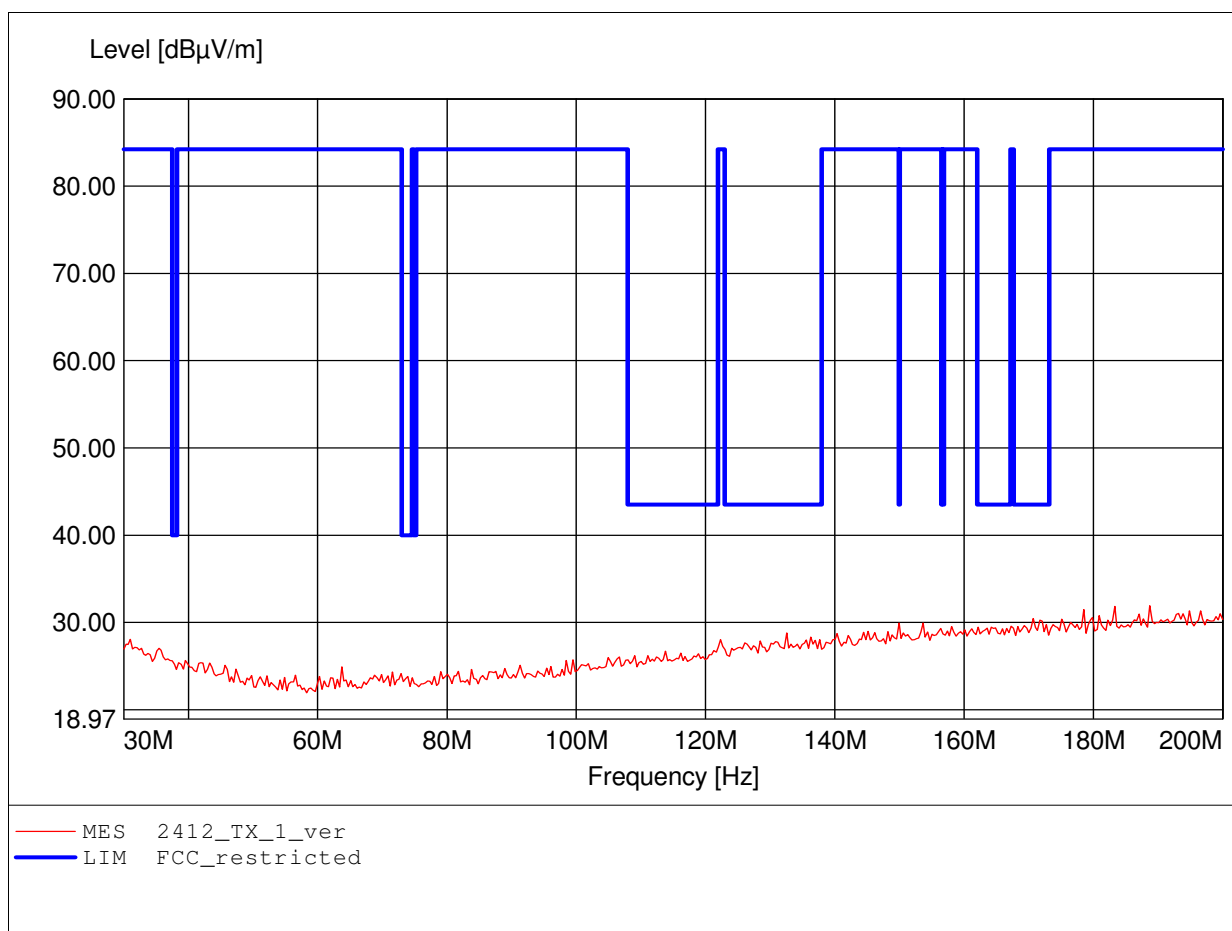
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.484GHz, Emax: 42.08dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

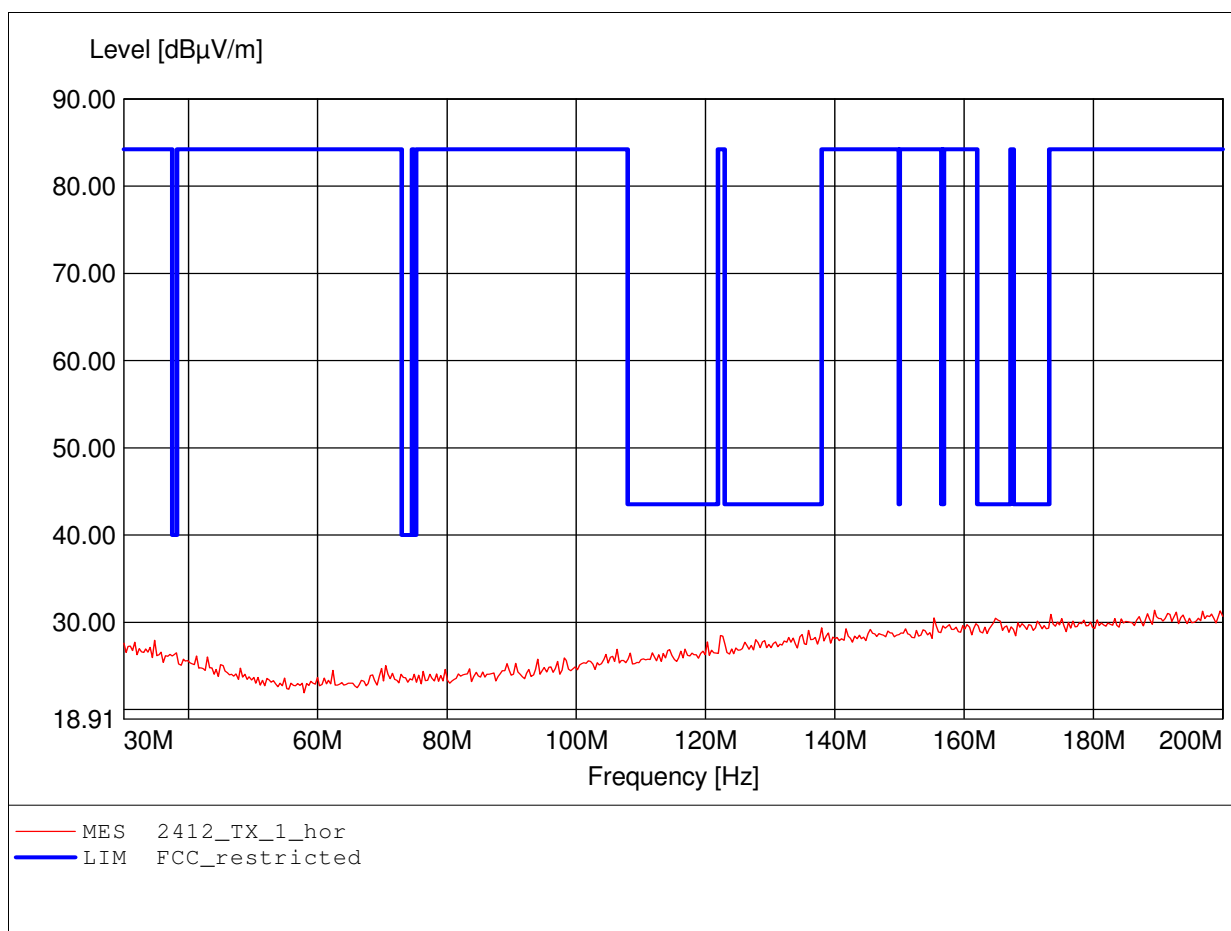
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq: 188.758MHz, Emax: 31.93dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

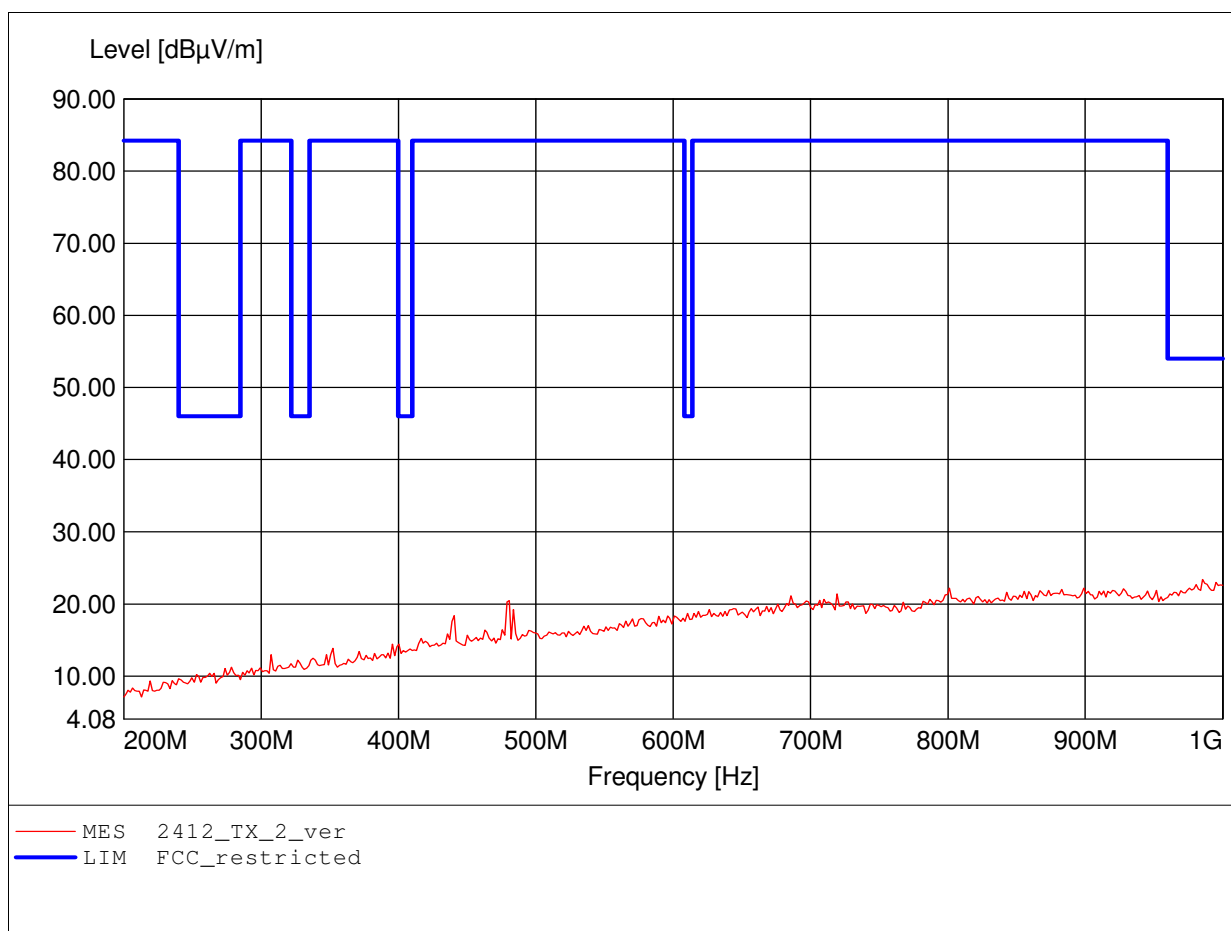
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq: 189.439MHz, Emax: 31.35dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

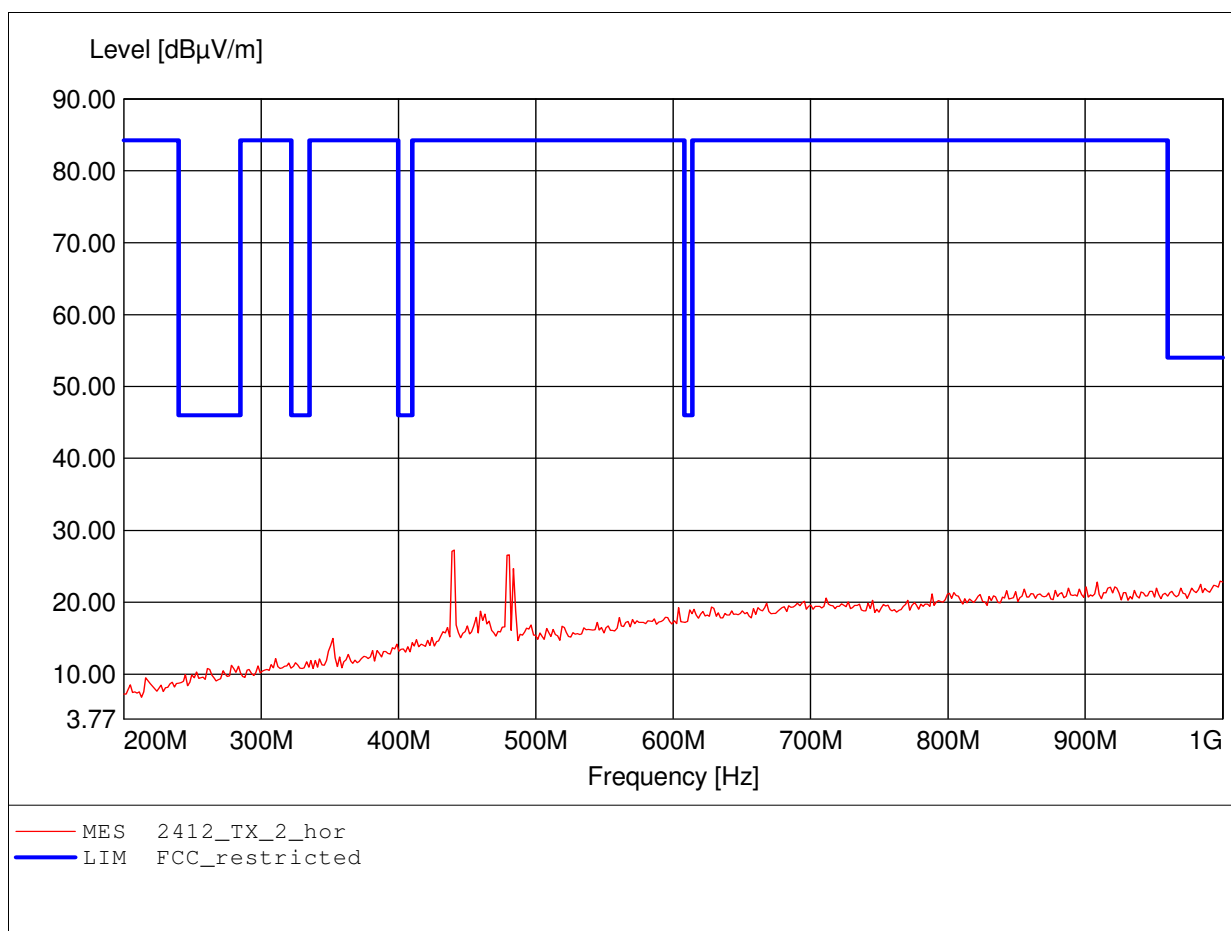
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Comment 2: Freq: 985.571MHz, Emax: 23.39dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

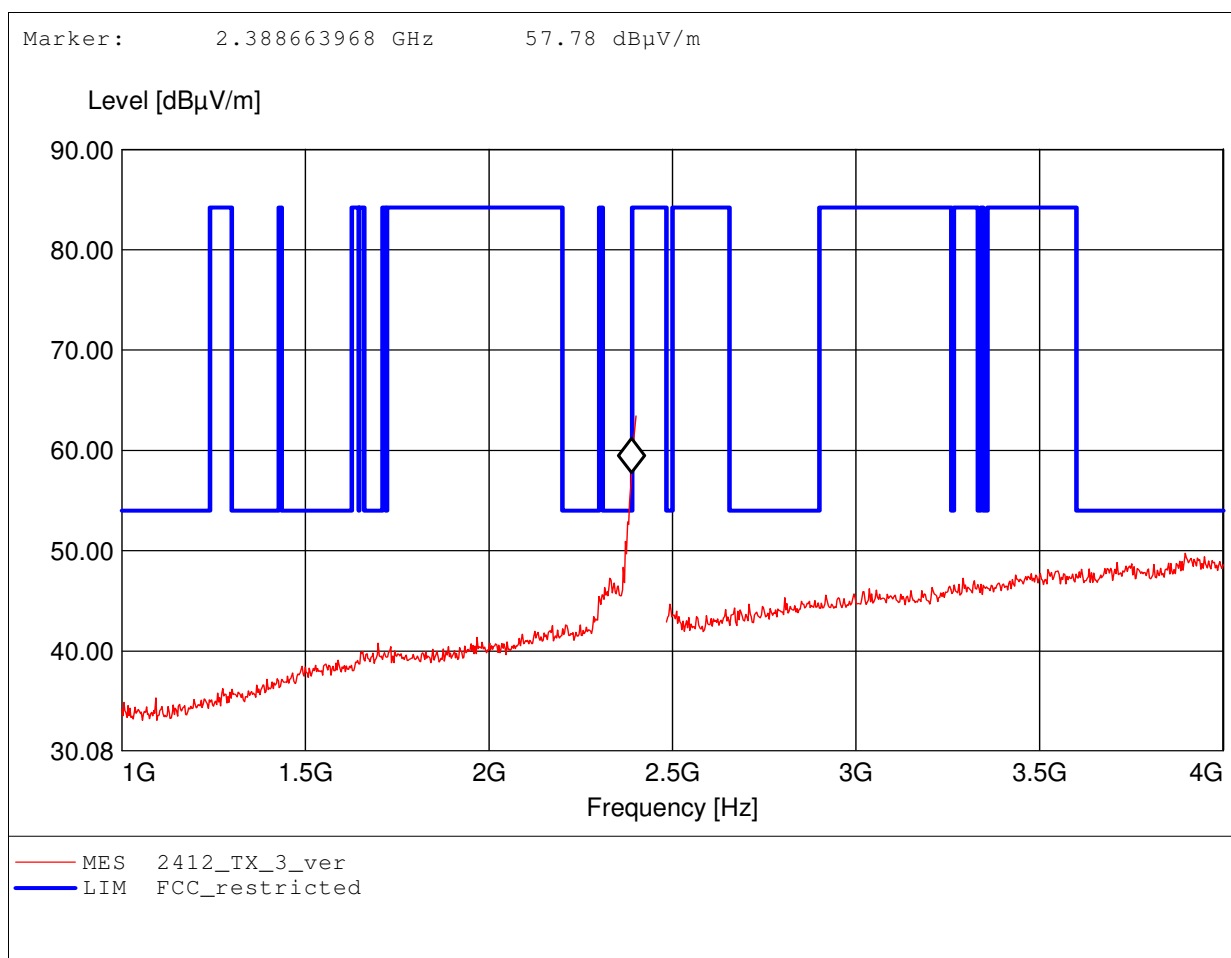
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Comment 2: Freq: 440.481MHz, Emax: 27.26dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

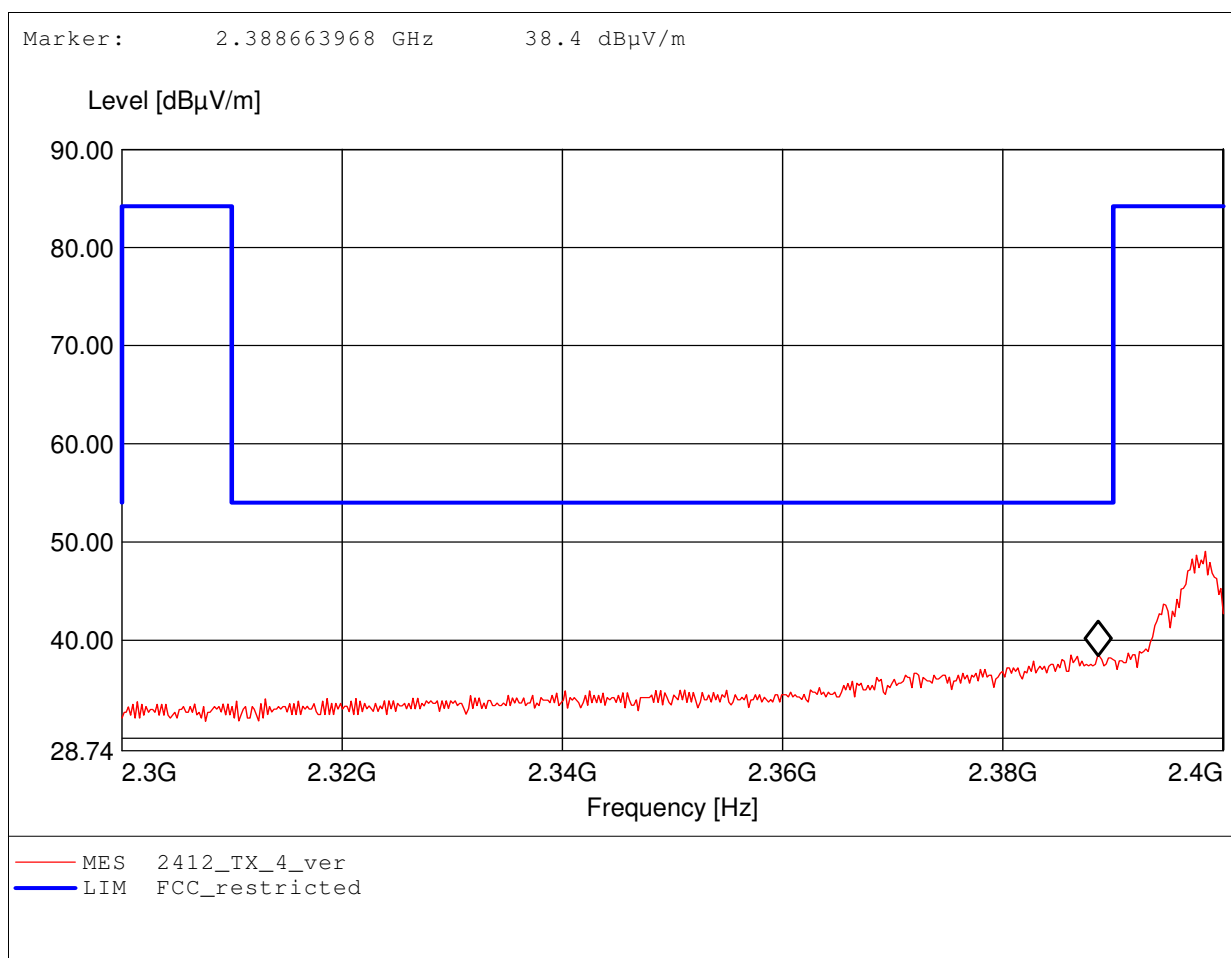
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 63.43dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

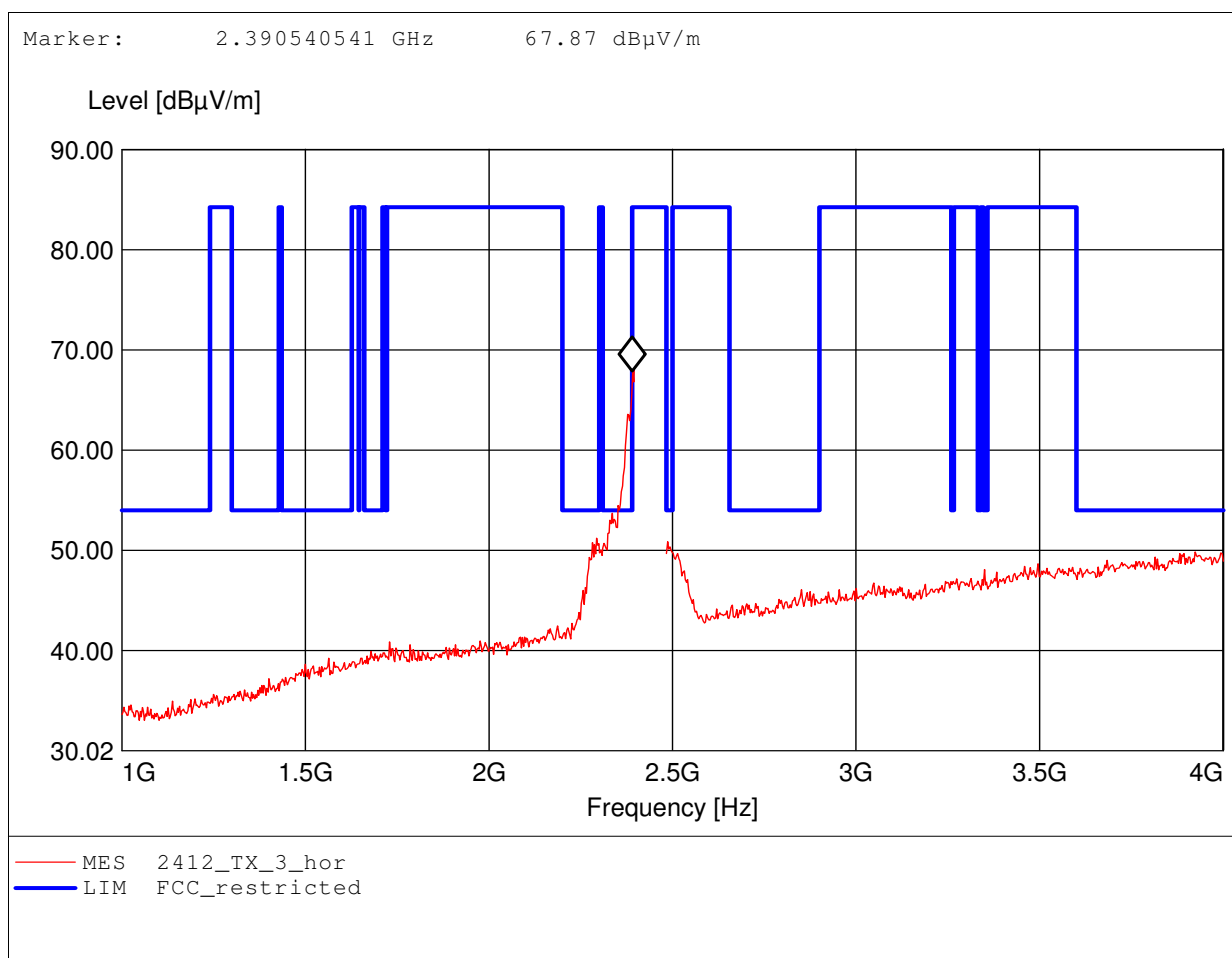
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.398GHz, Emax: 49.03dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

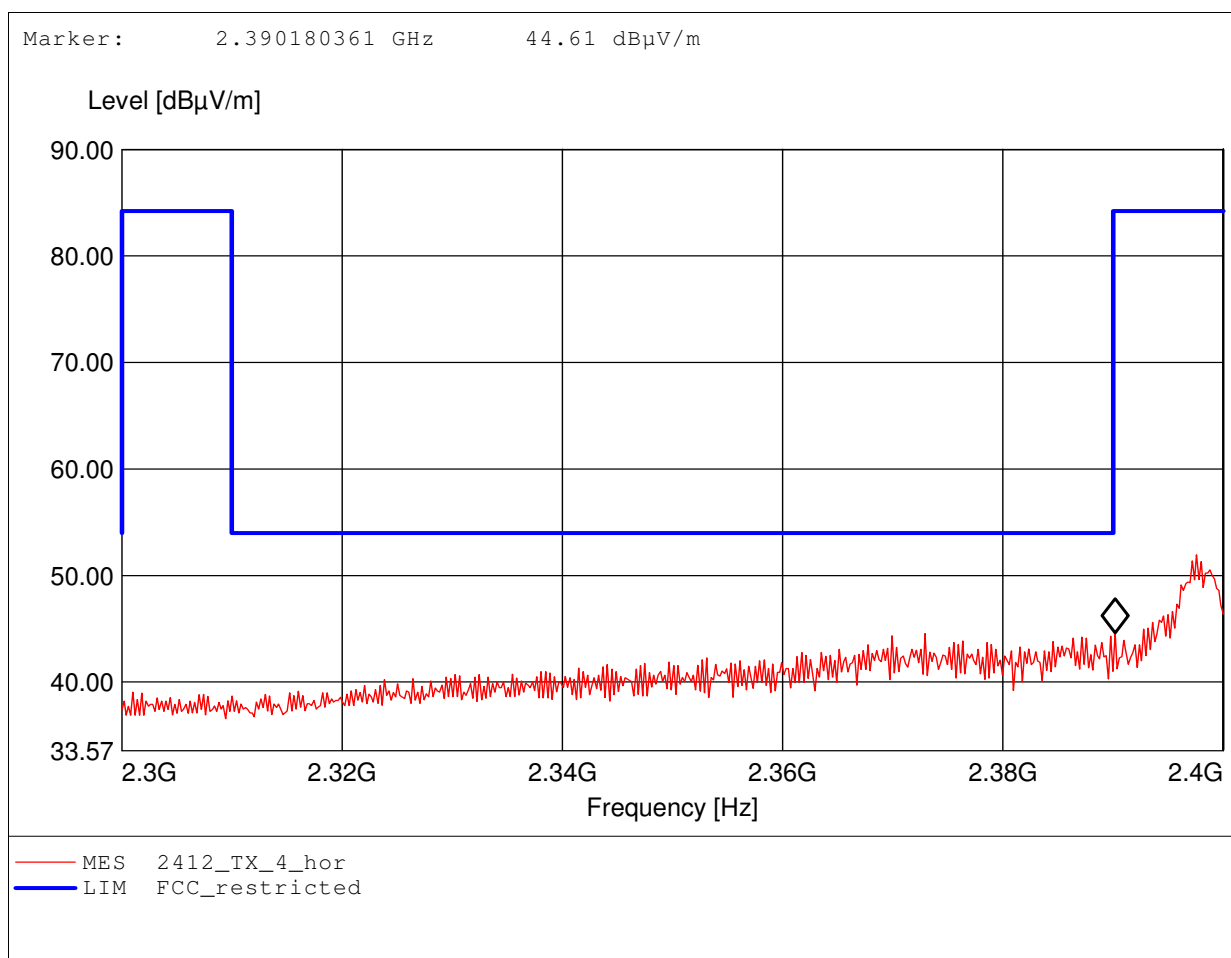
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 70.65dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

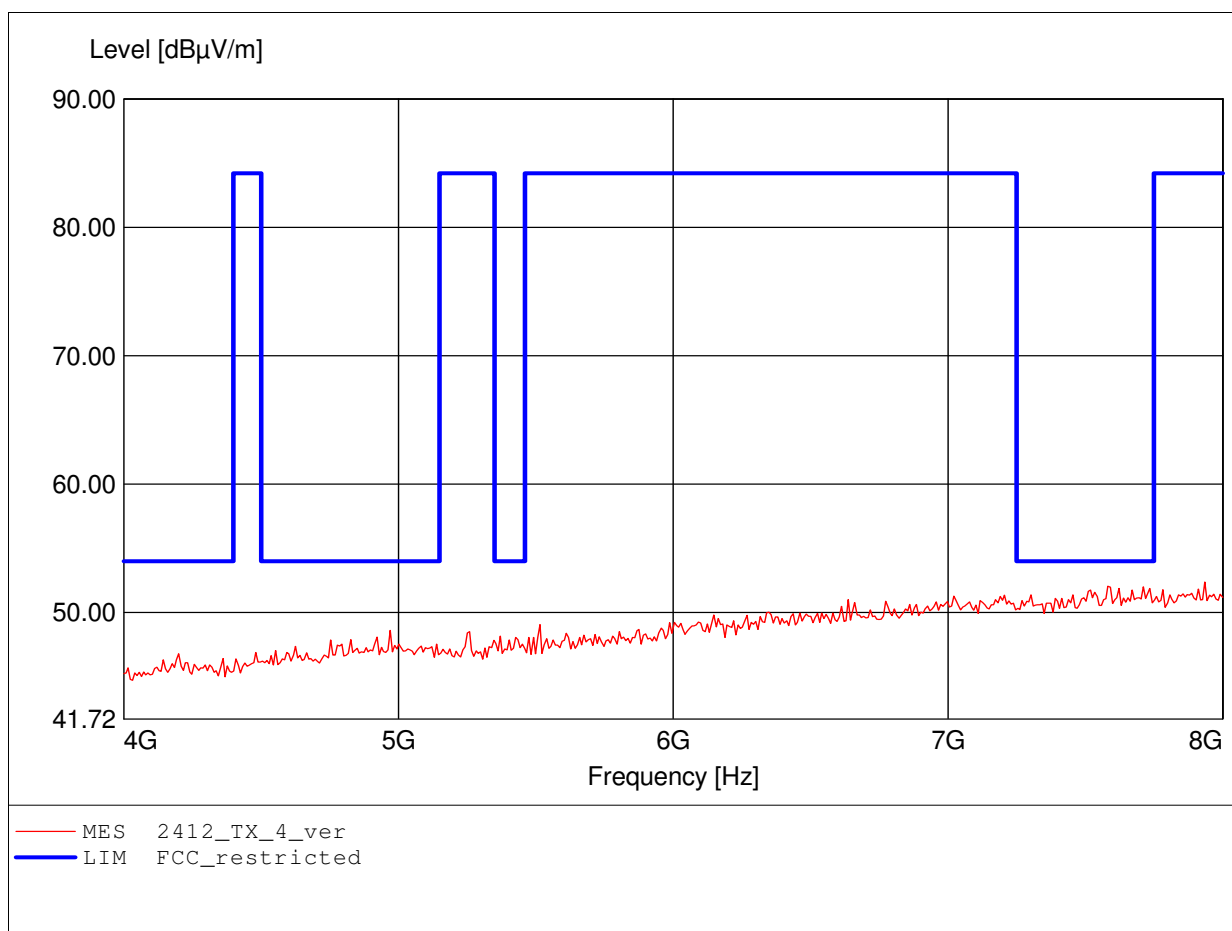
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.398GHz, Emax: 51.94dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

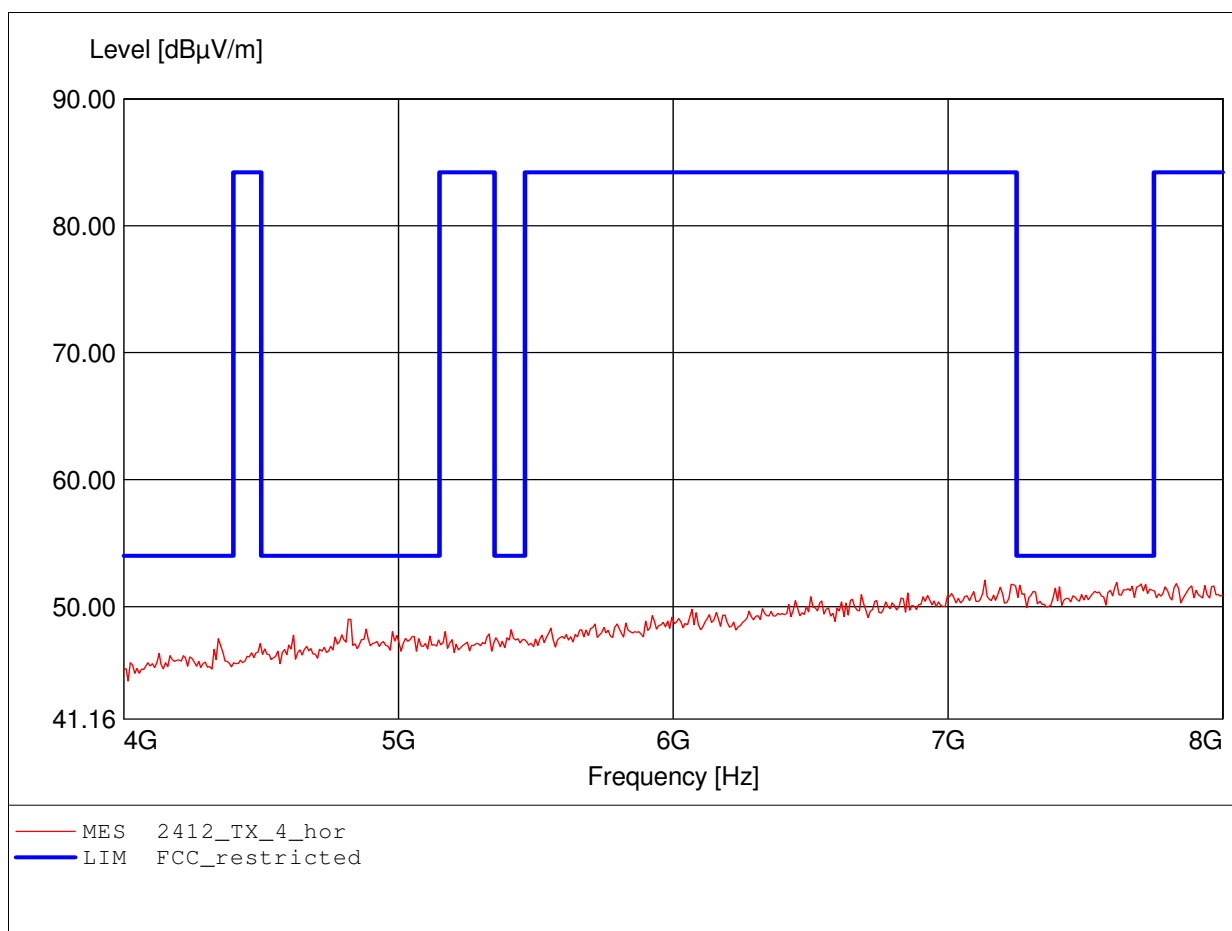
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.936GHz, Emax: 52.38dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

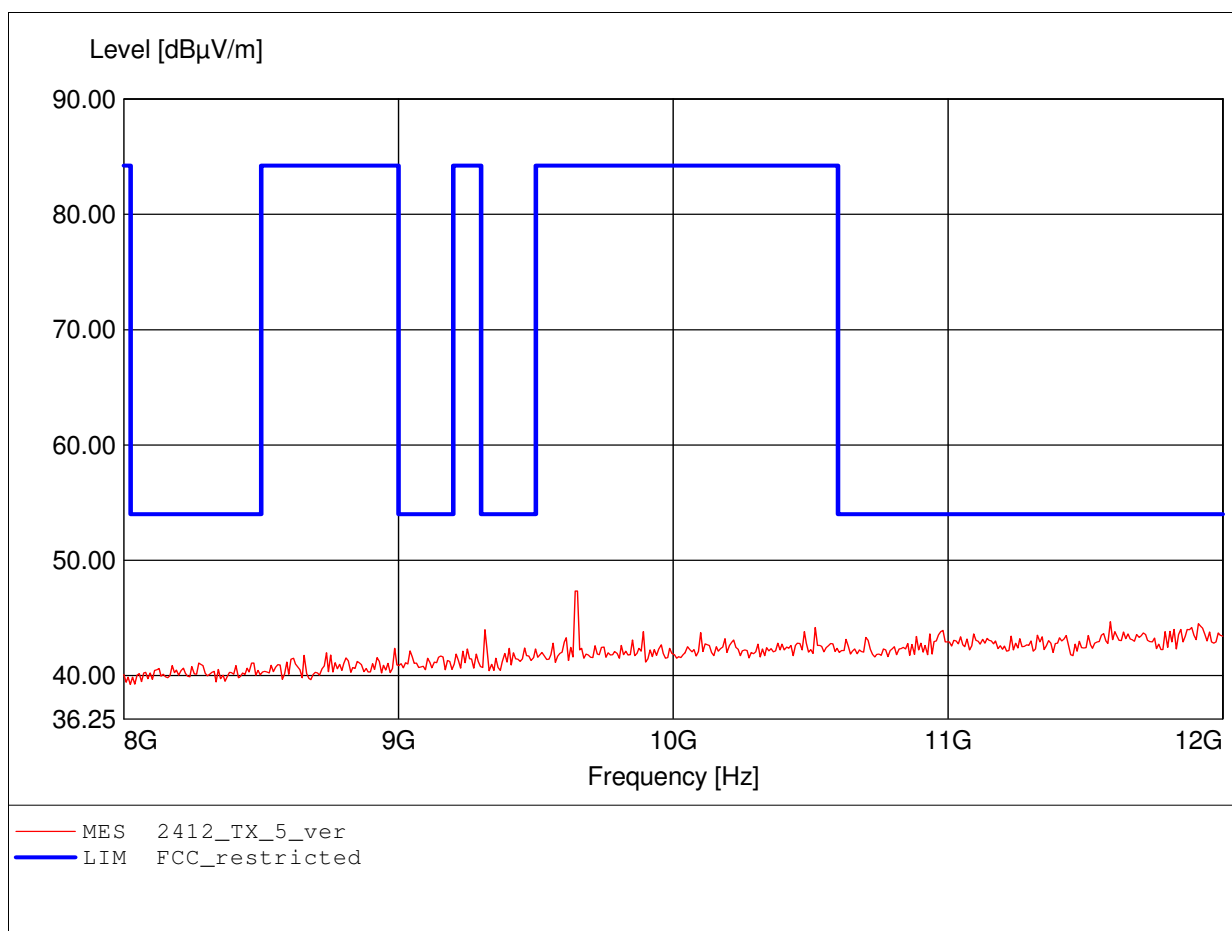
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.134GHz, Emax: 52.11dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

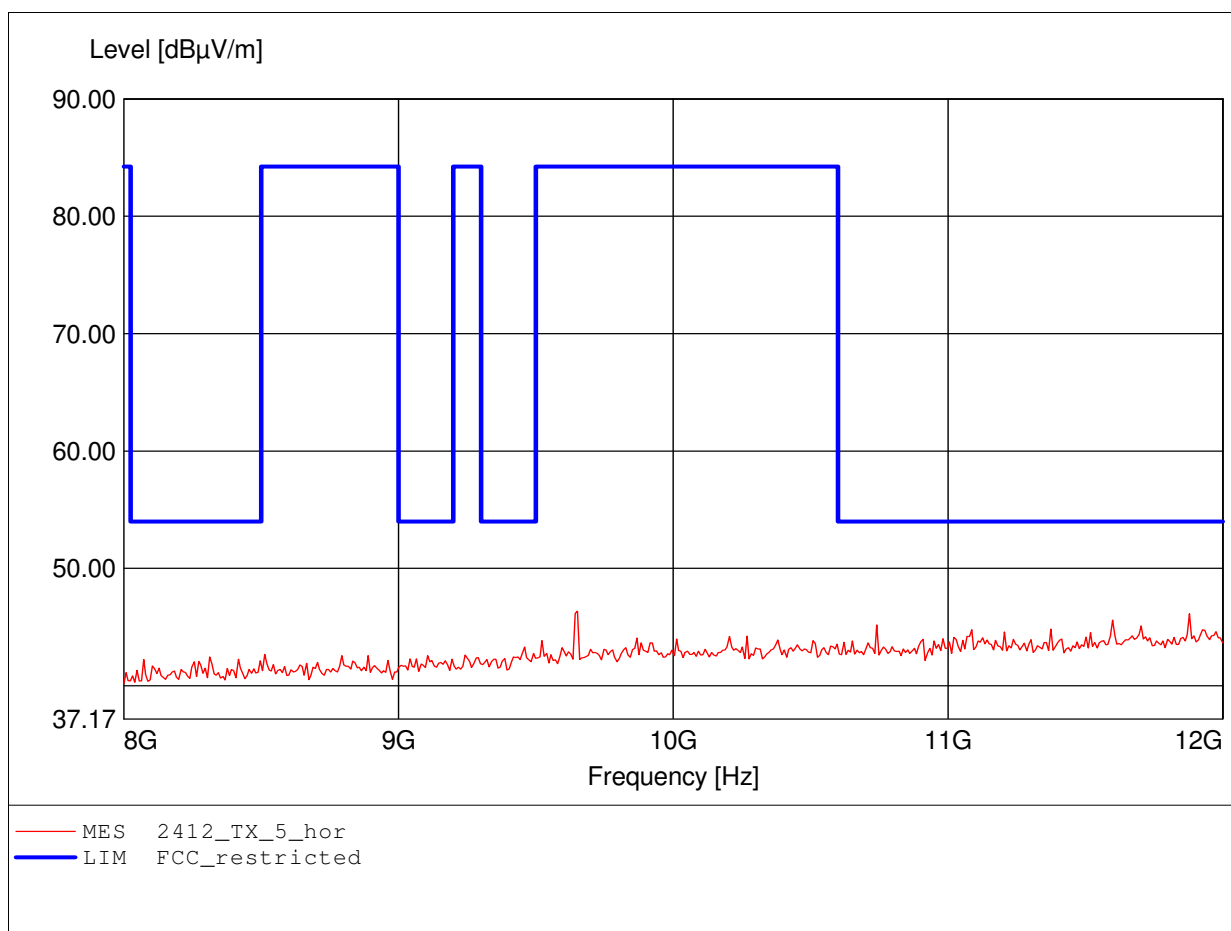
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 9.651GHz, Emax: 47.34dB μ V/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

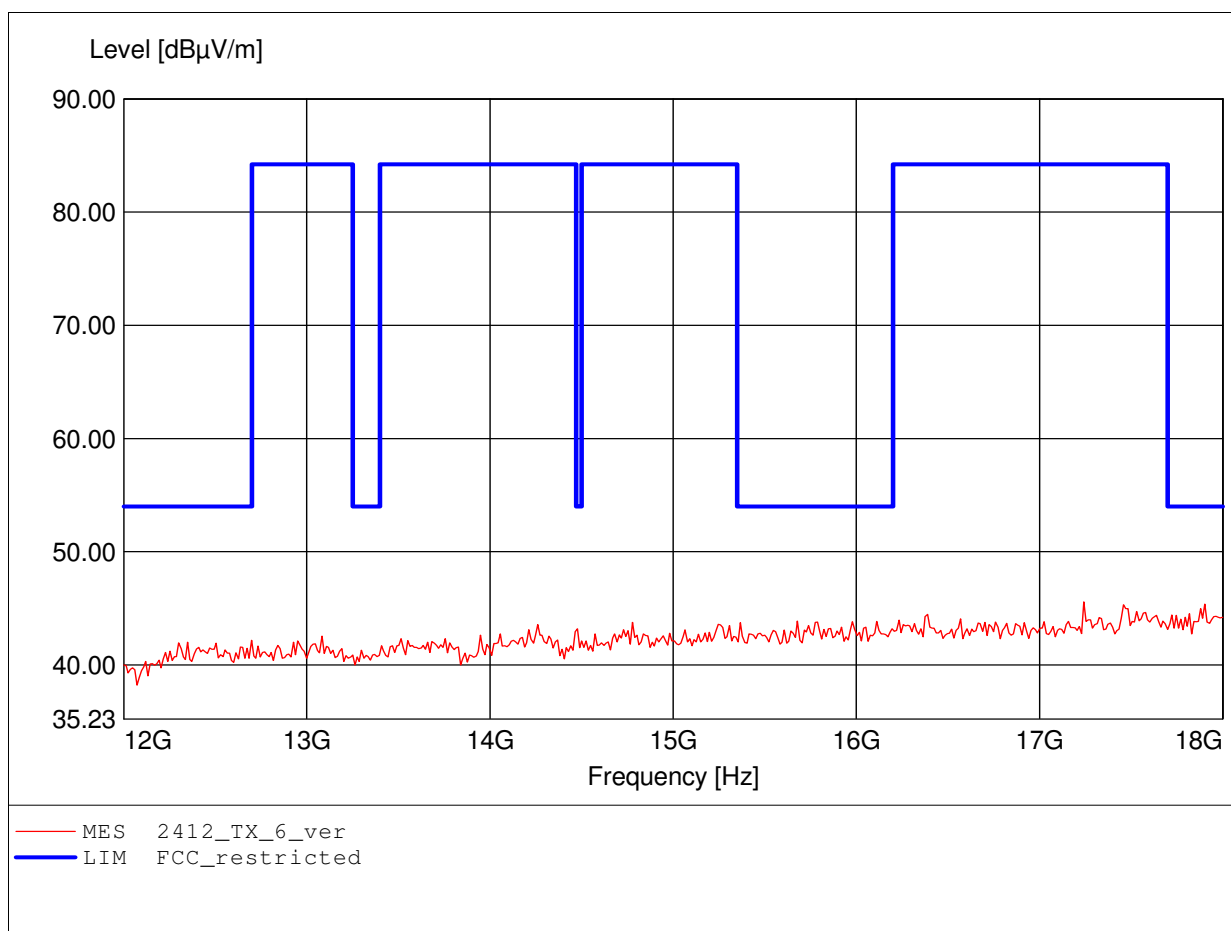
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 9.651GHz, Emax: 46.33dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

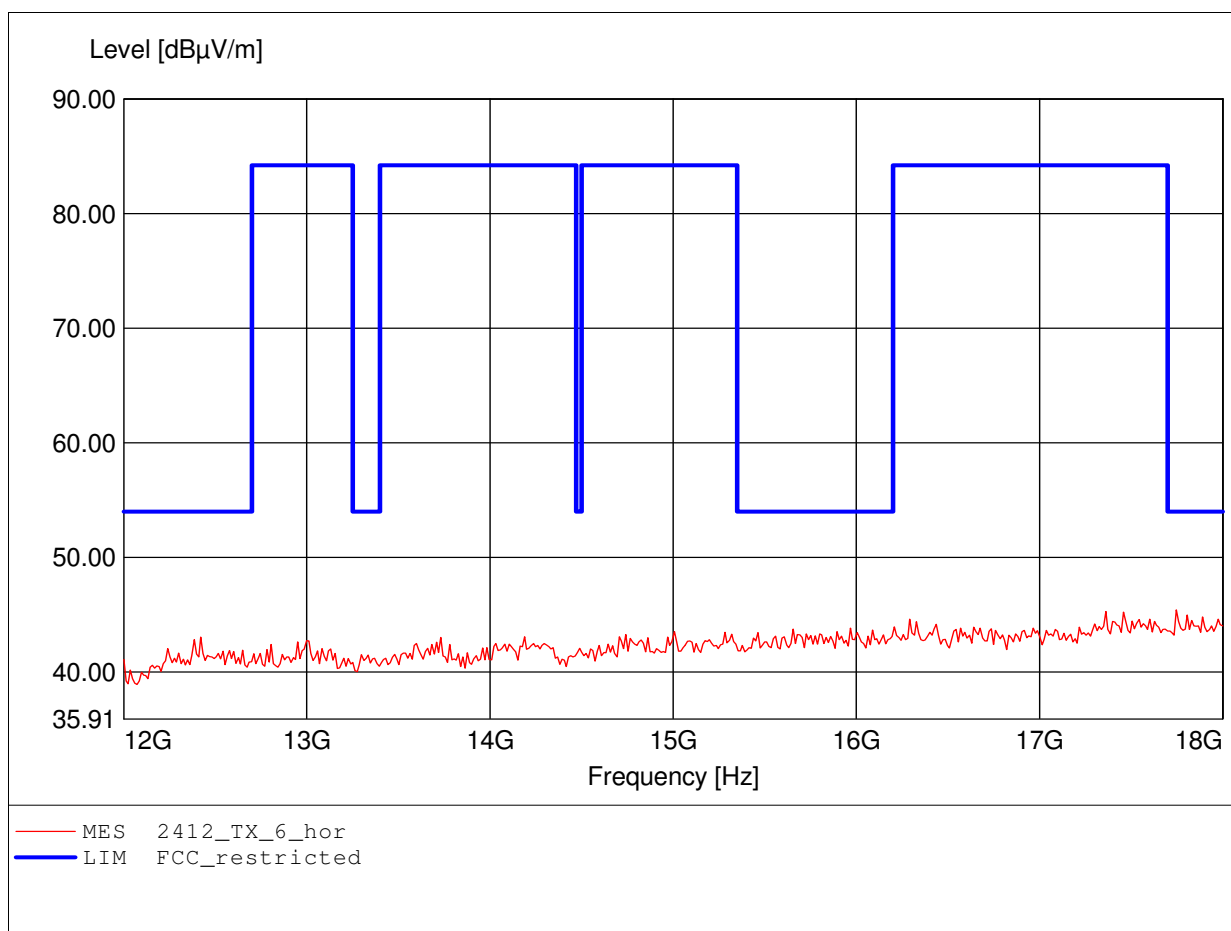
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 17.242GHz, Emax: 45.57dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

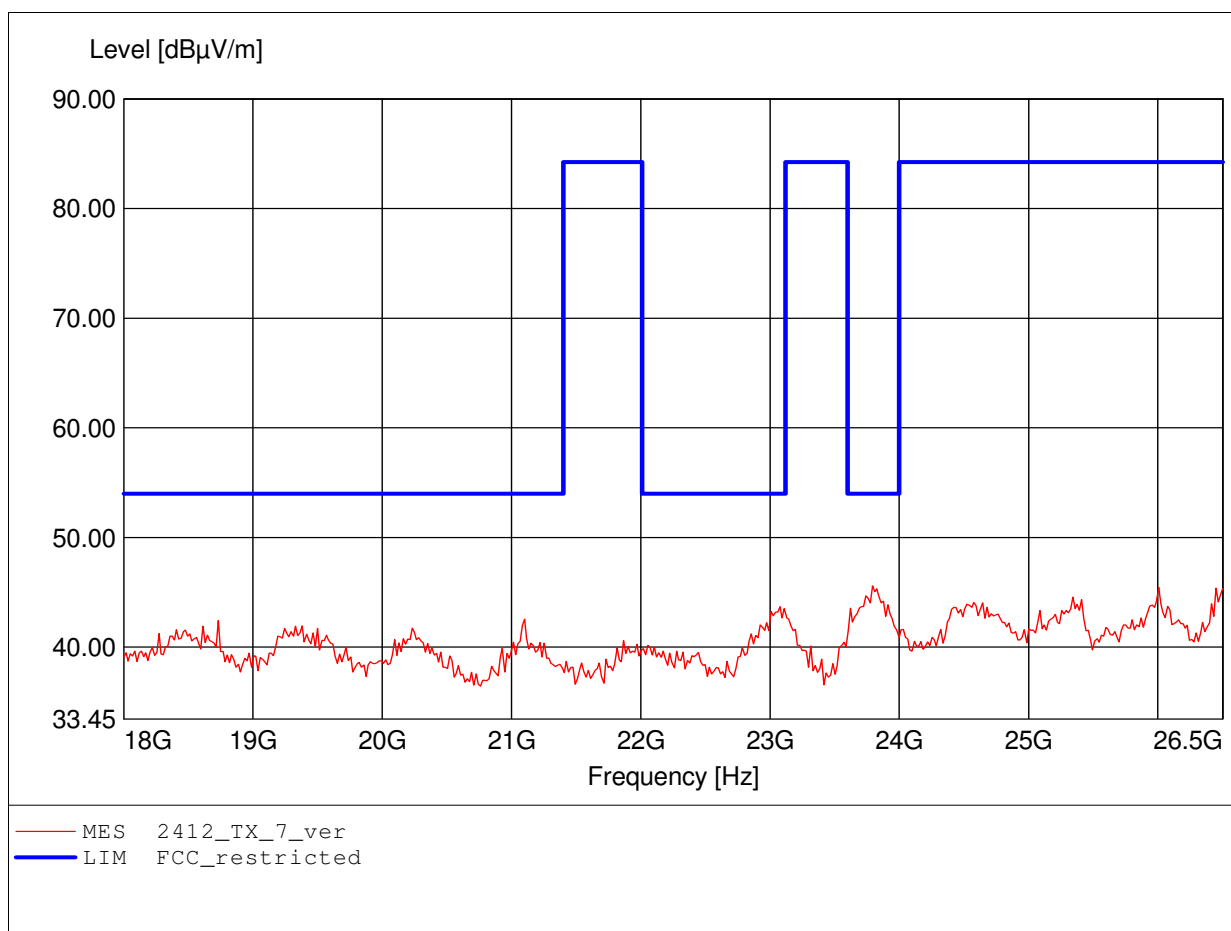
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 17.747GHz, Emax: 45.42dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

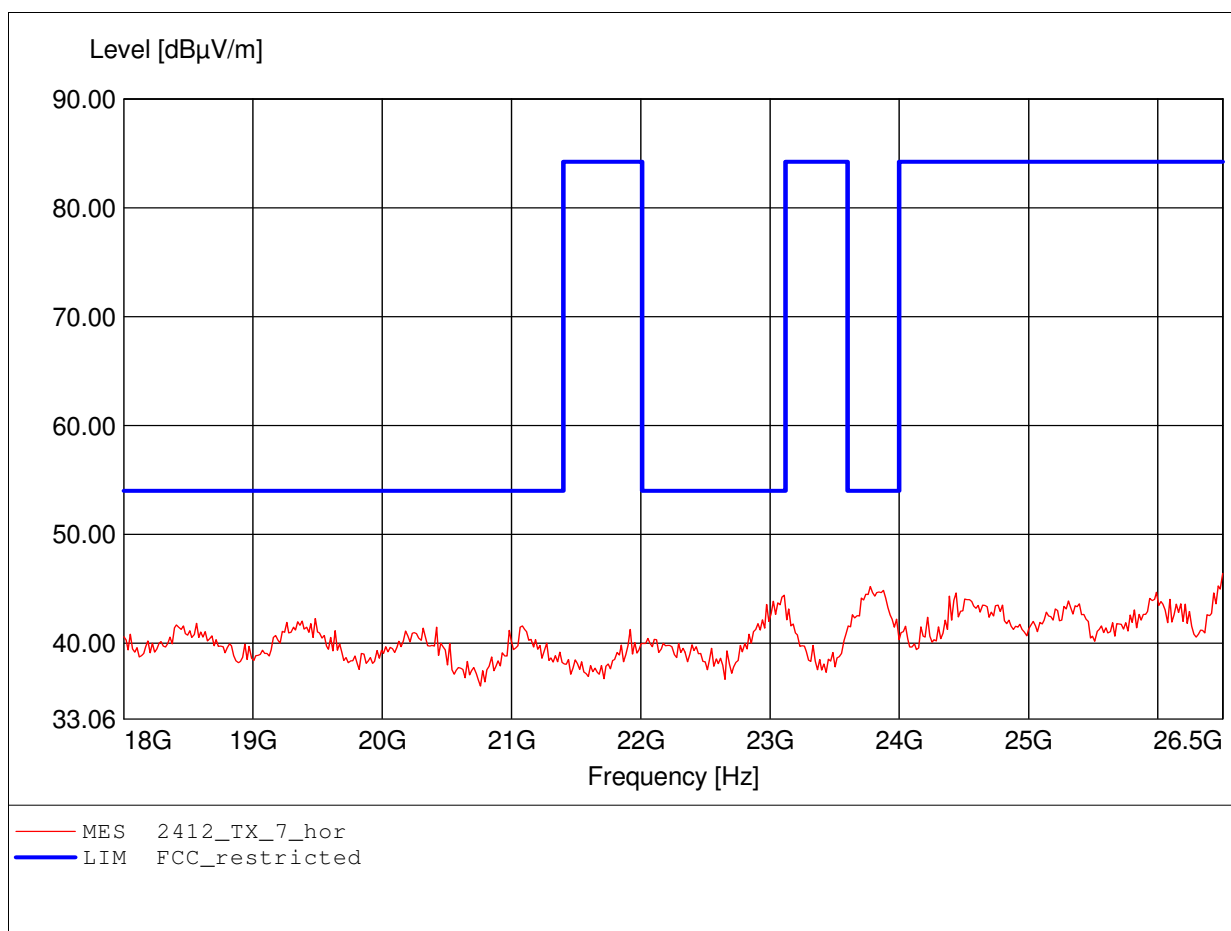
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Comment 2: Freq: 23.792GHz, Emax: 45.59dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

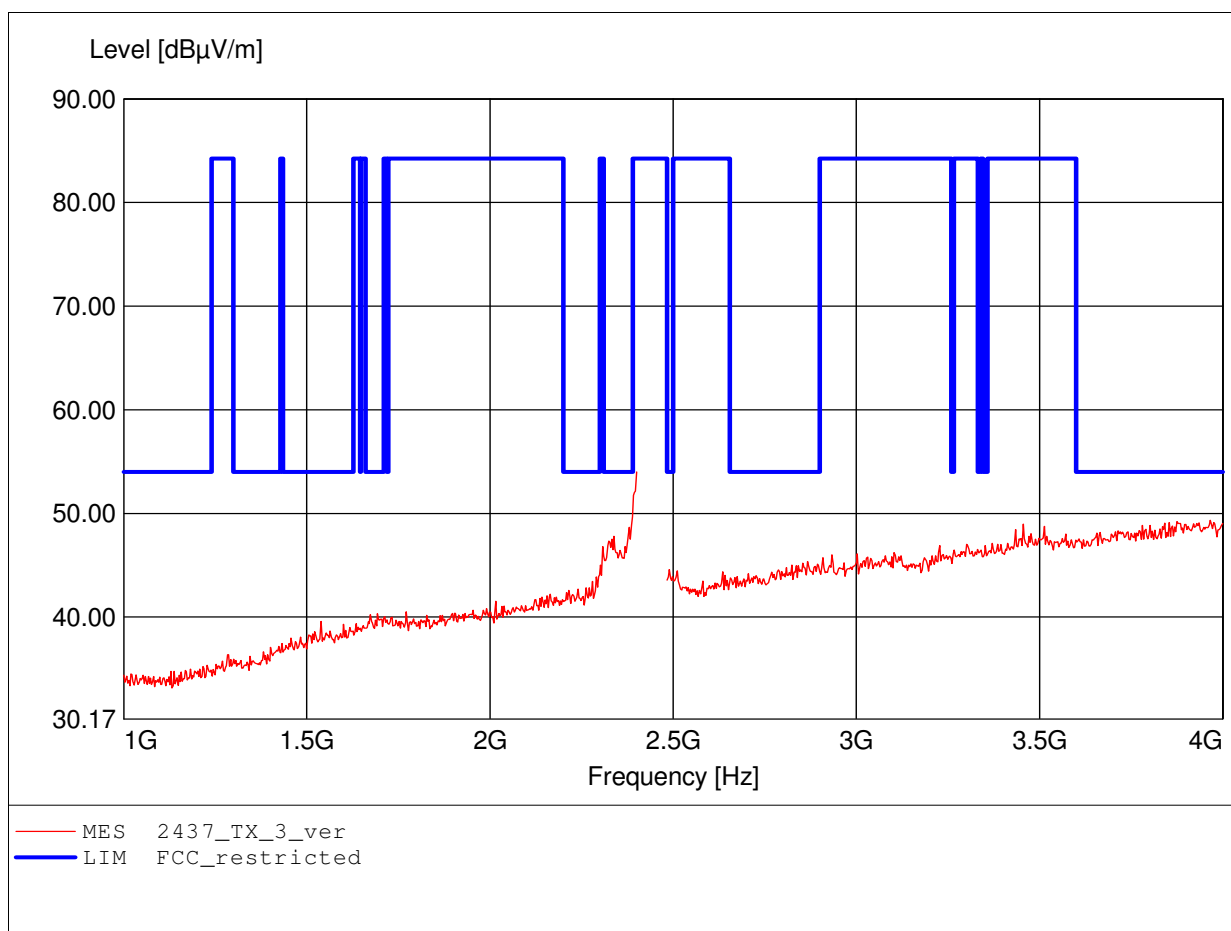
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Comment 2: Freq: 26.500GHz, Emax: 46.42dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

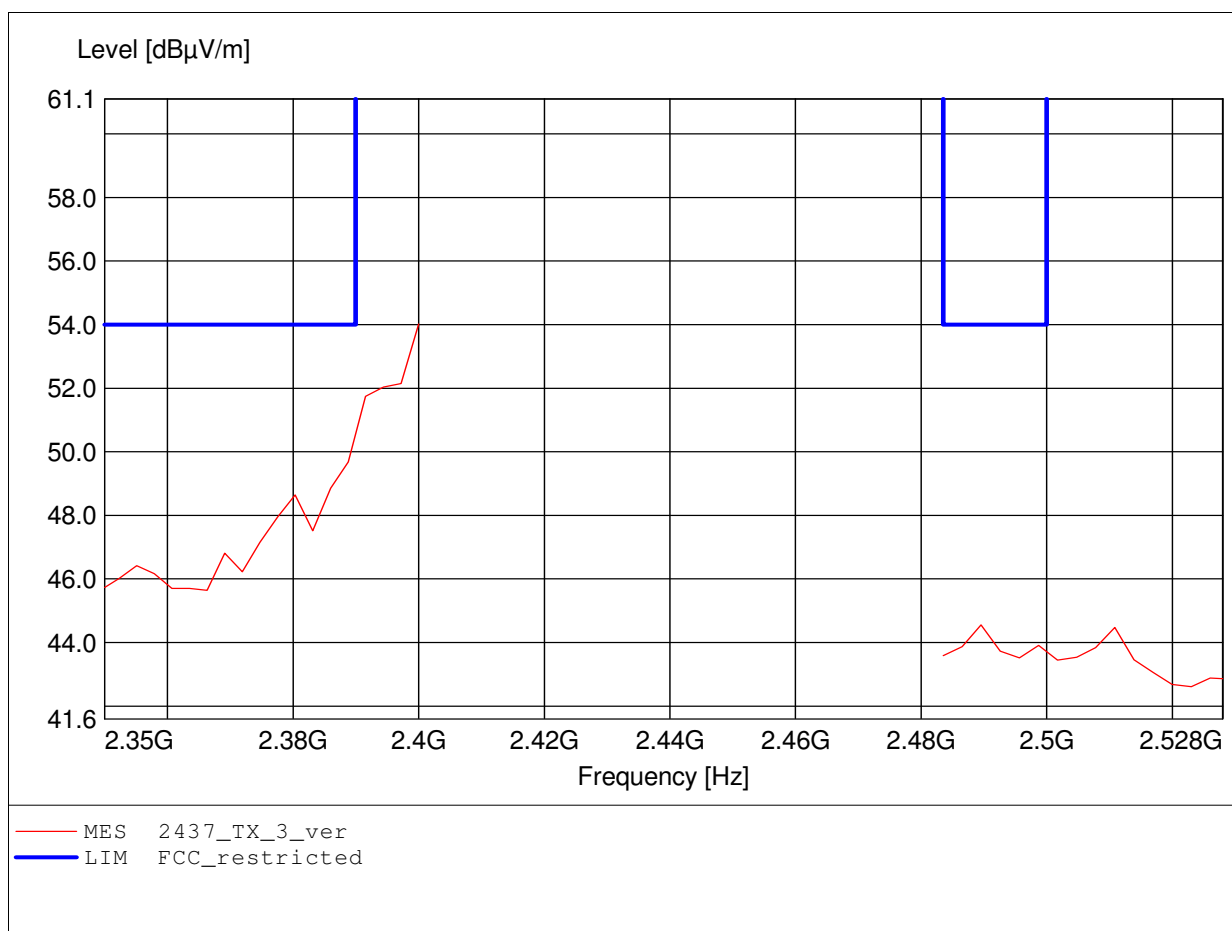
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 54.01dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

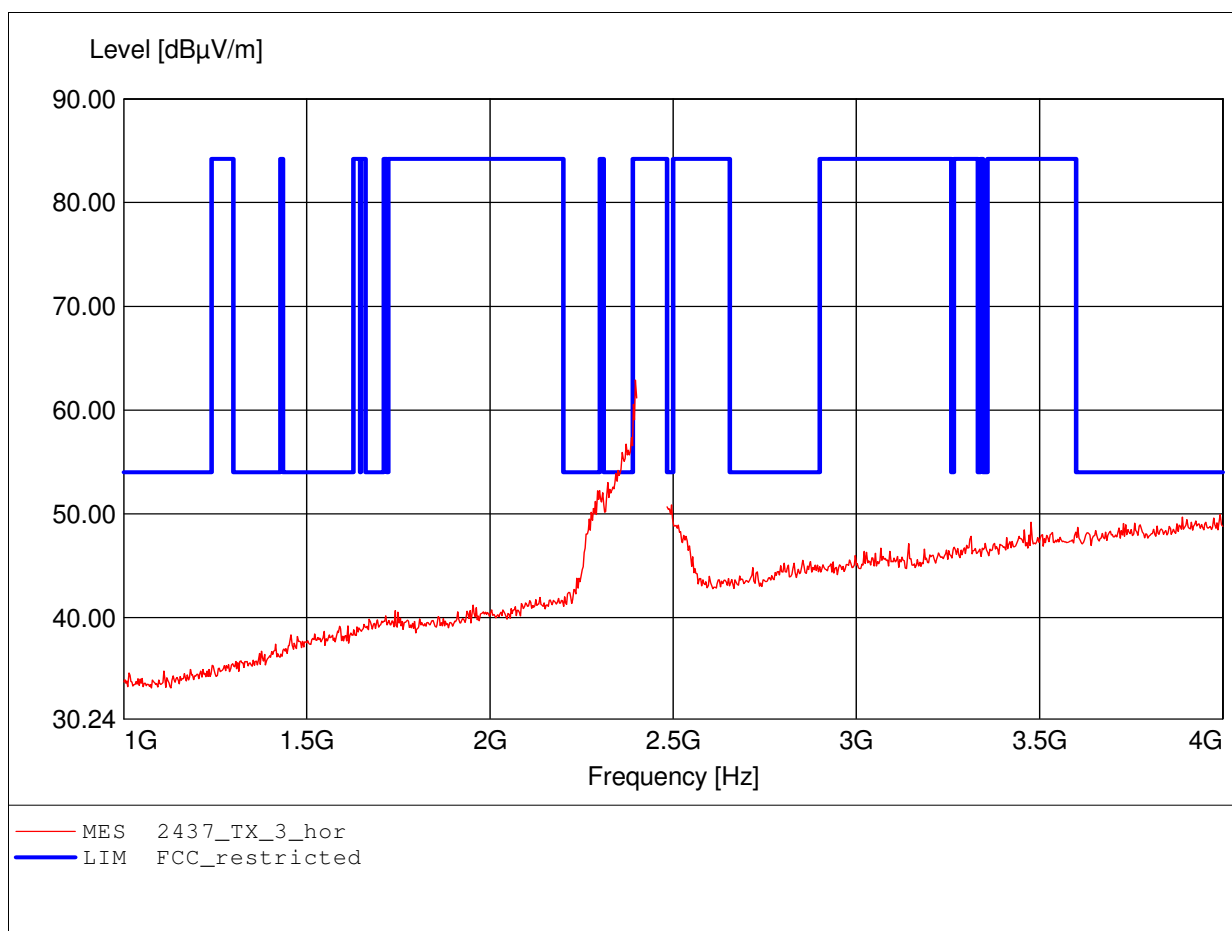
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 54.01dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

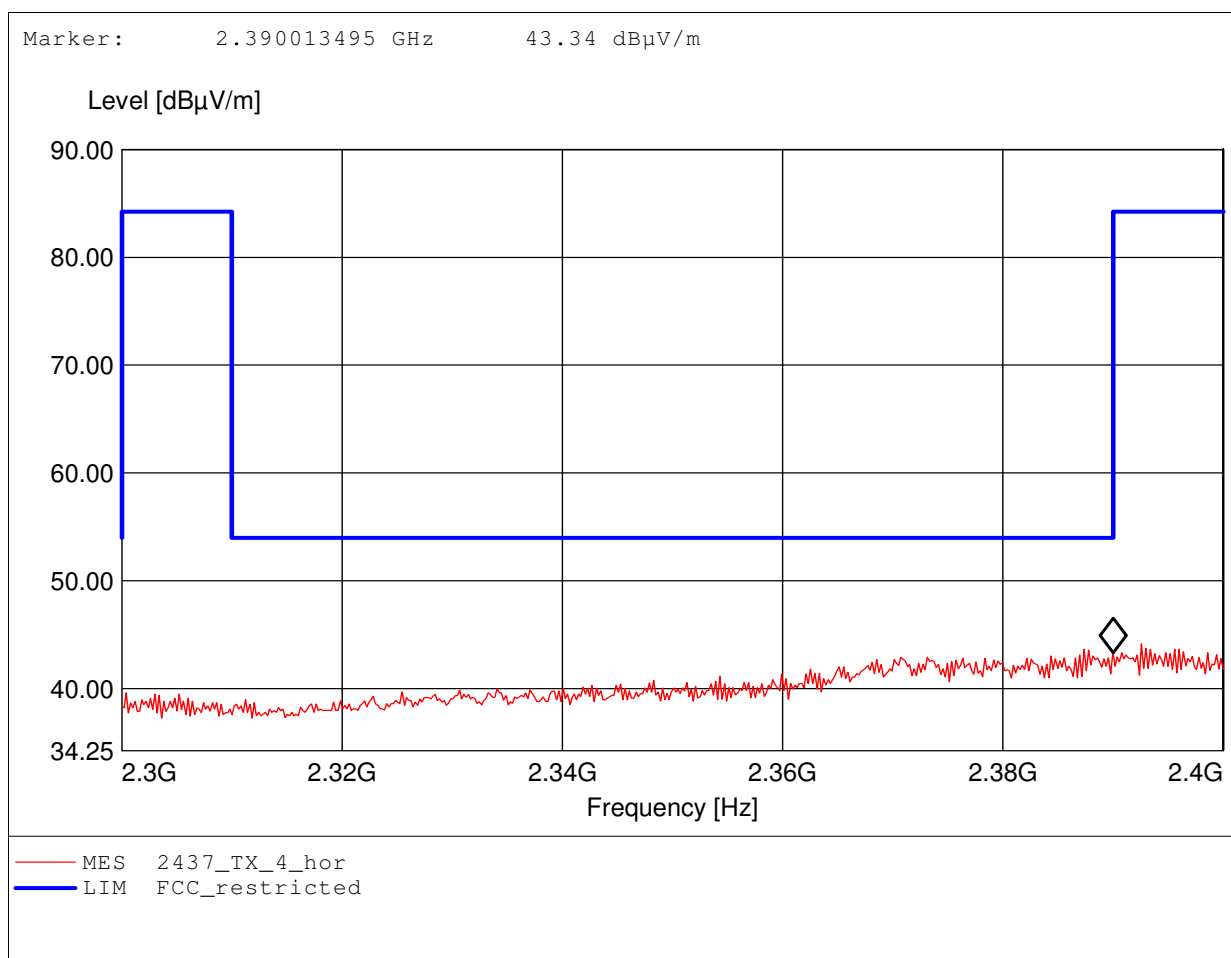
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.397GHz, Emax: 62.89dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

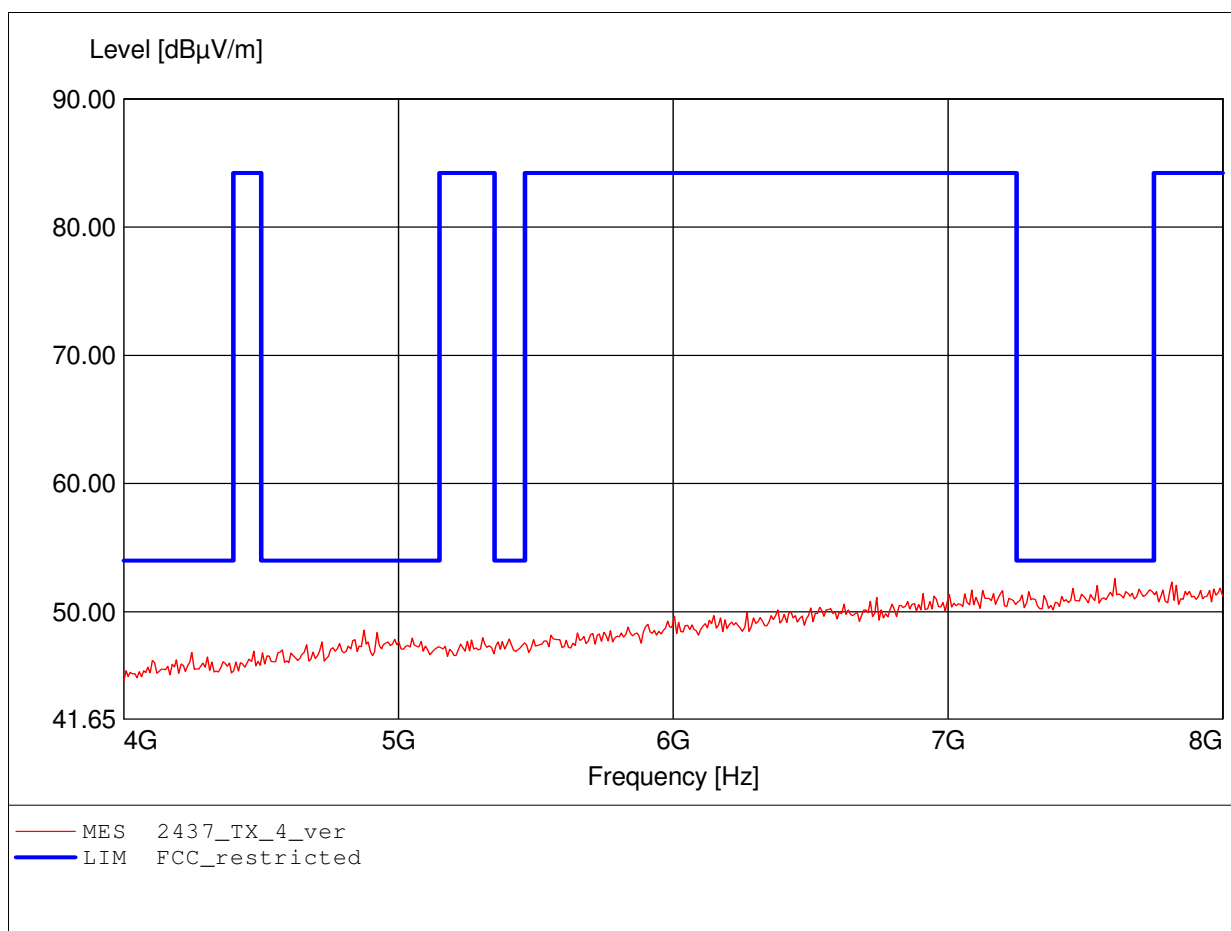
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.393GHz, Emax: 44.15dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

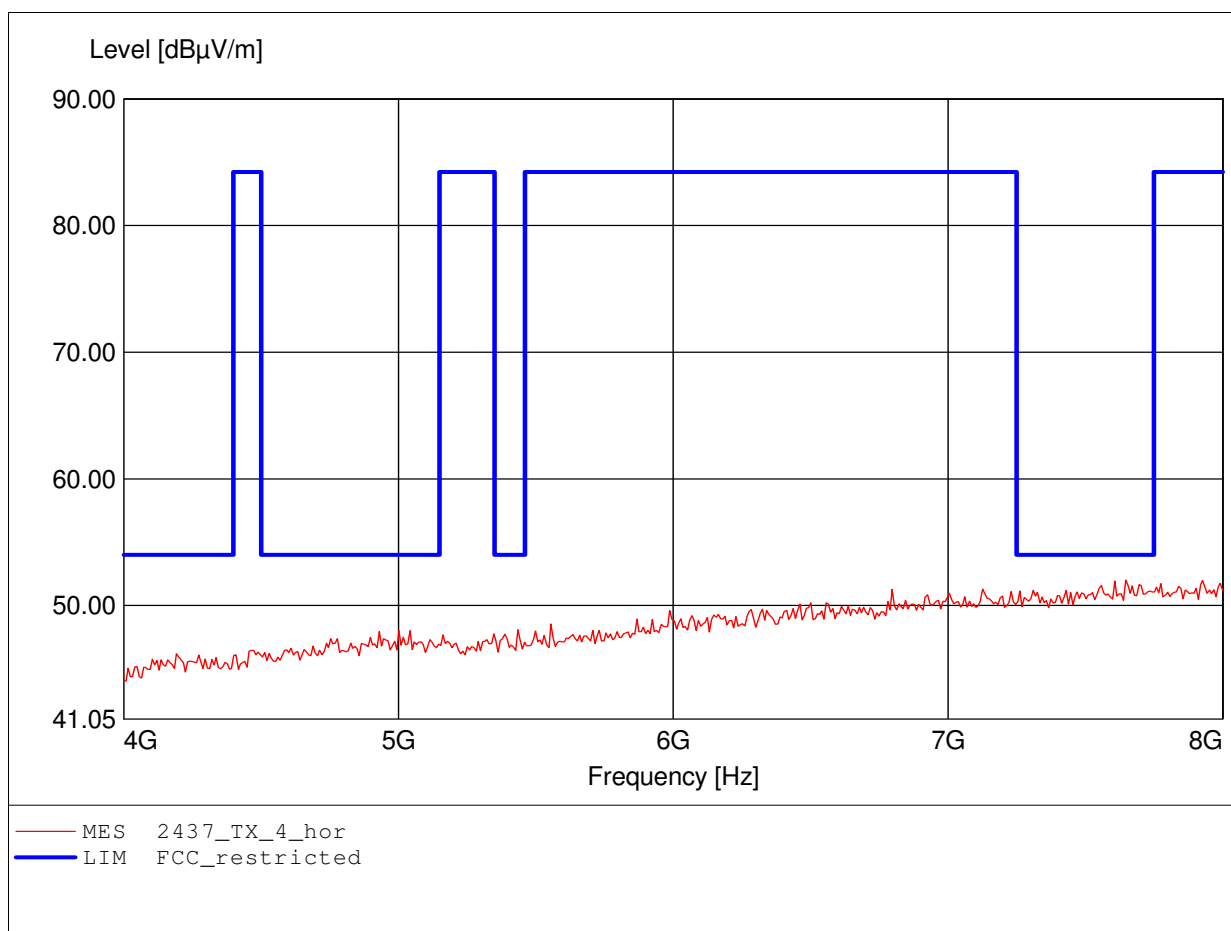
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.607GHz, Emax: 52.59dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

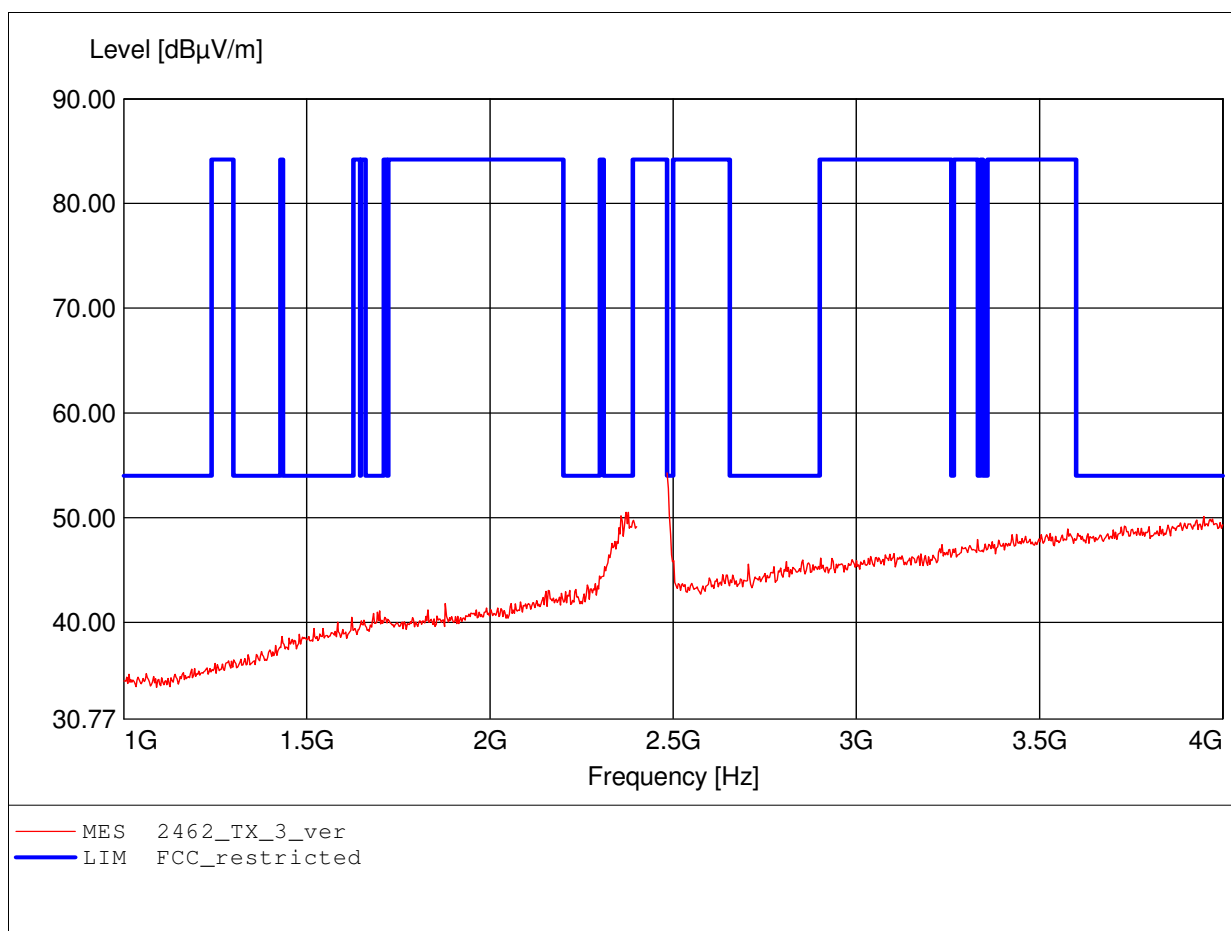
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.647GHz, Emax: 52.02dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

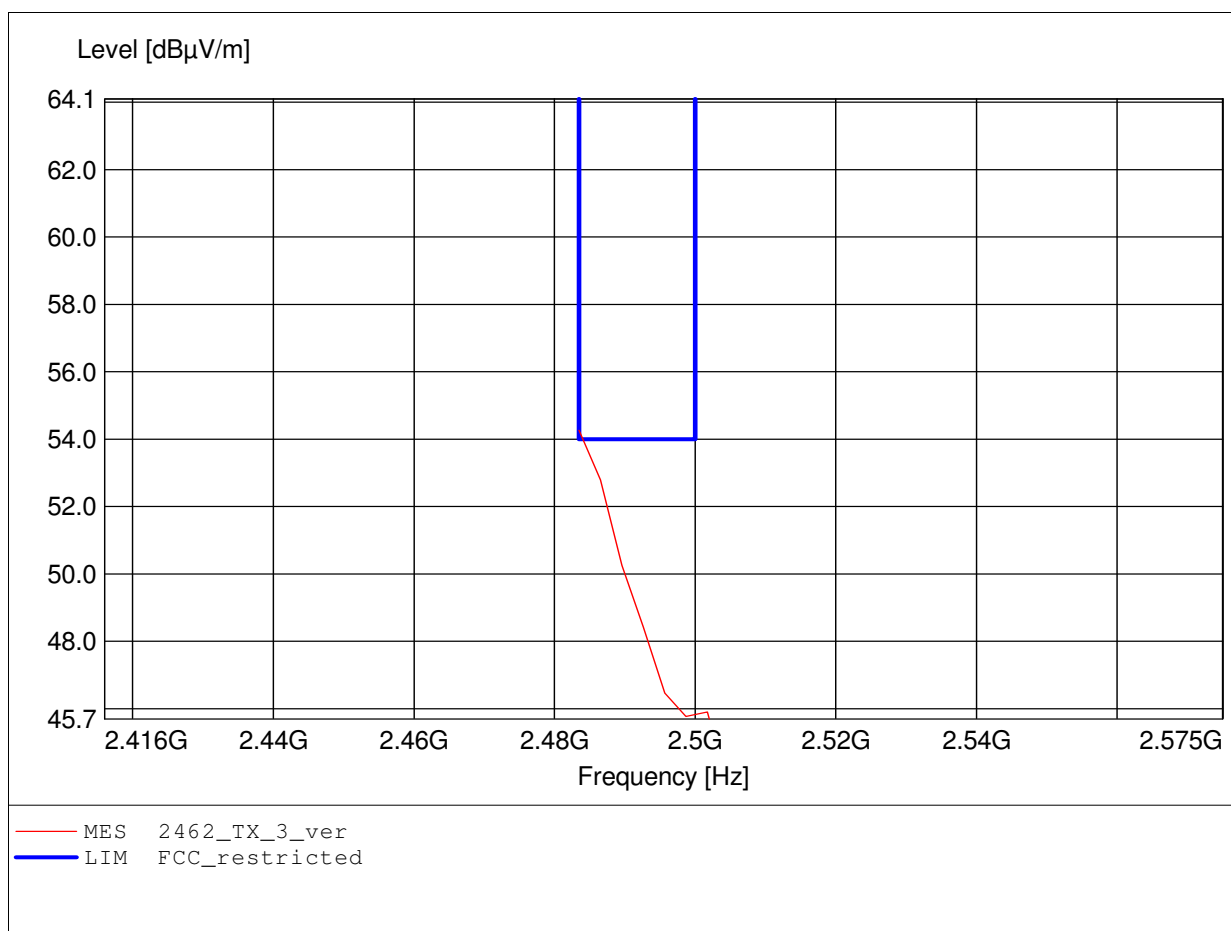
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 54.26dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

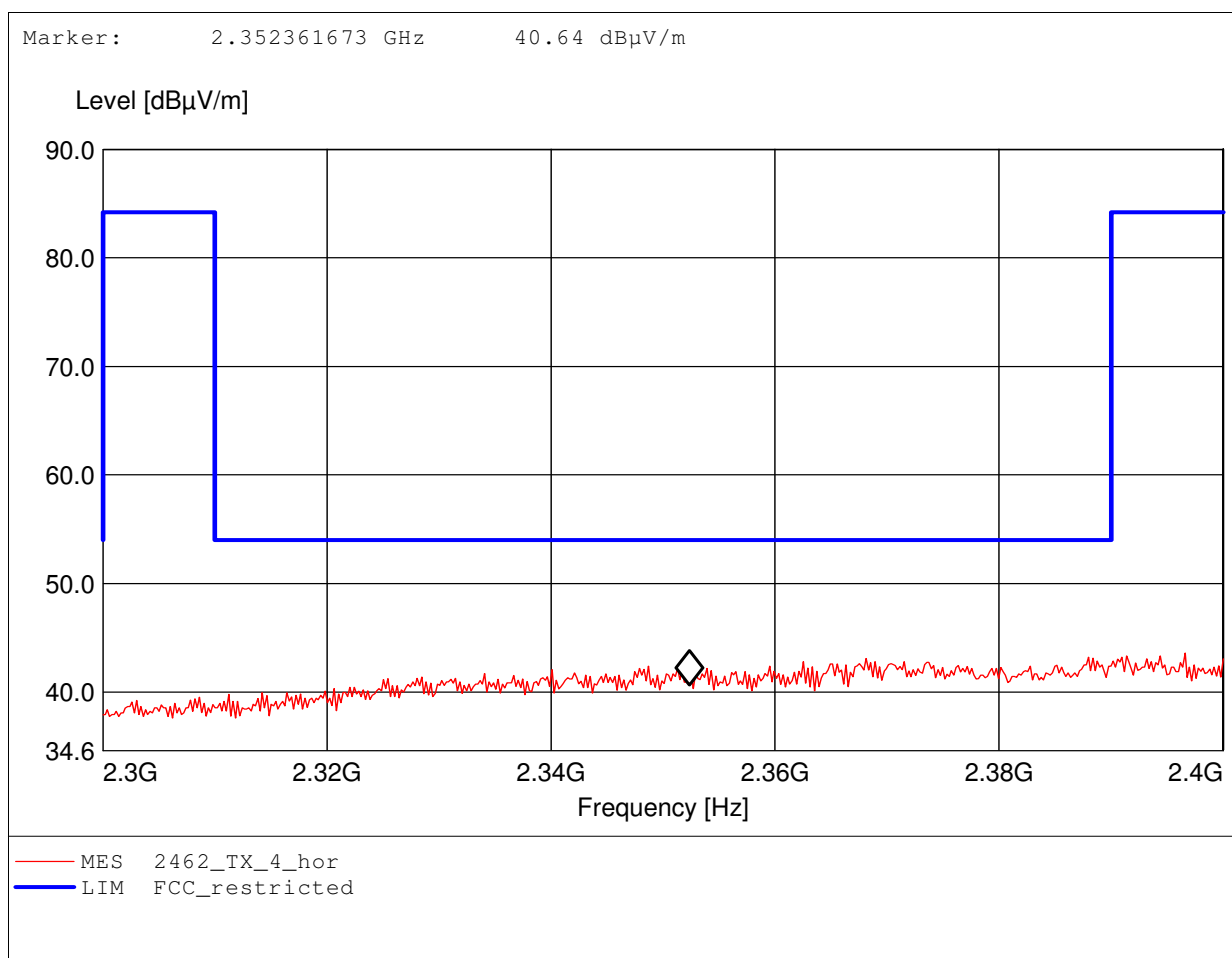
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 54.26dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

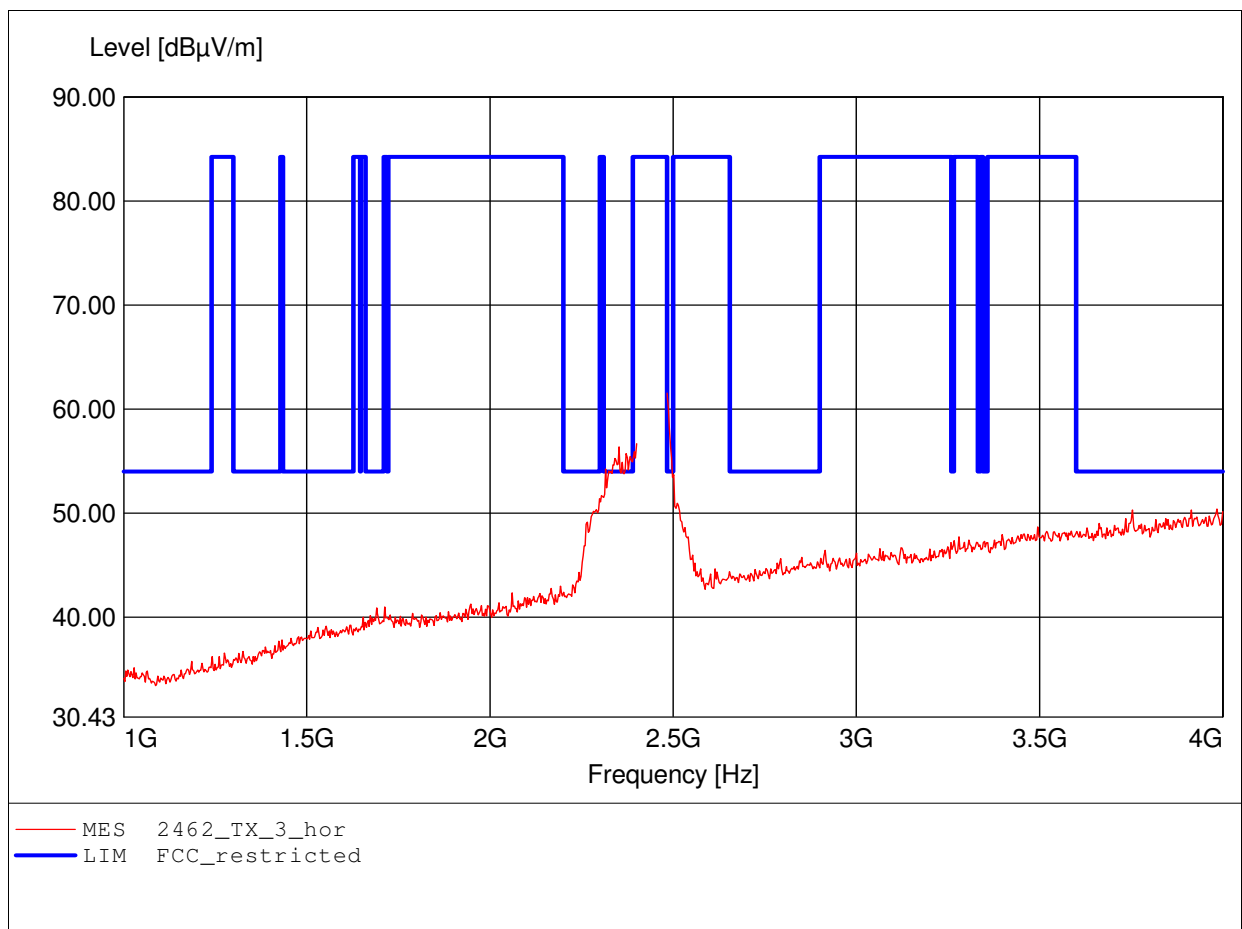
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.397GHz, Emax: 43.58dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

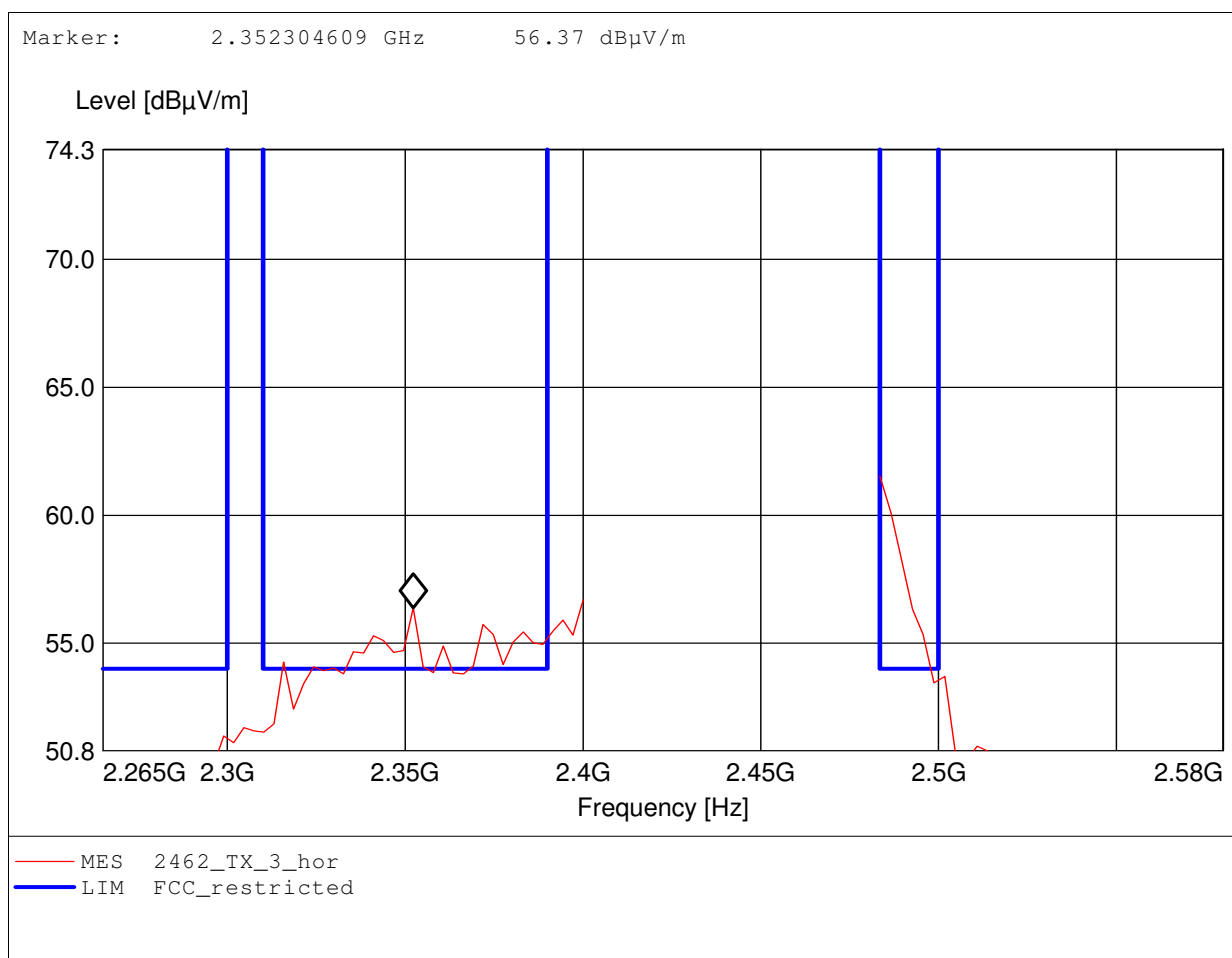
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 61.53dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

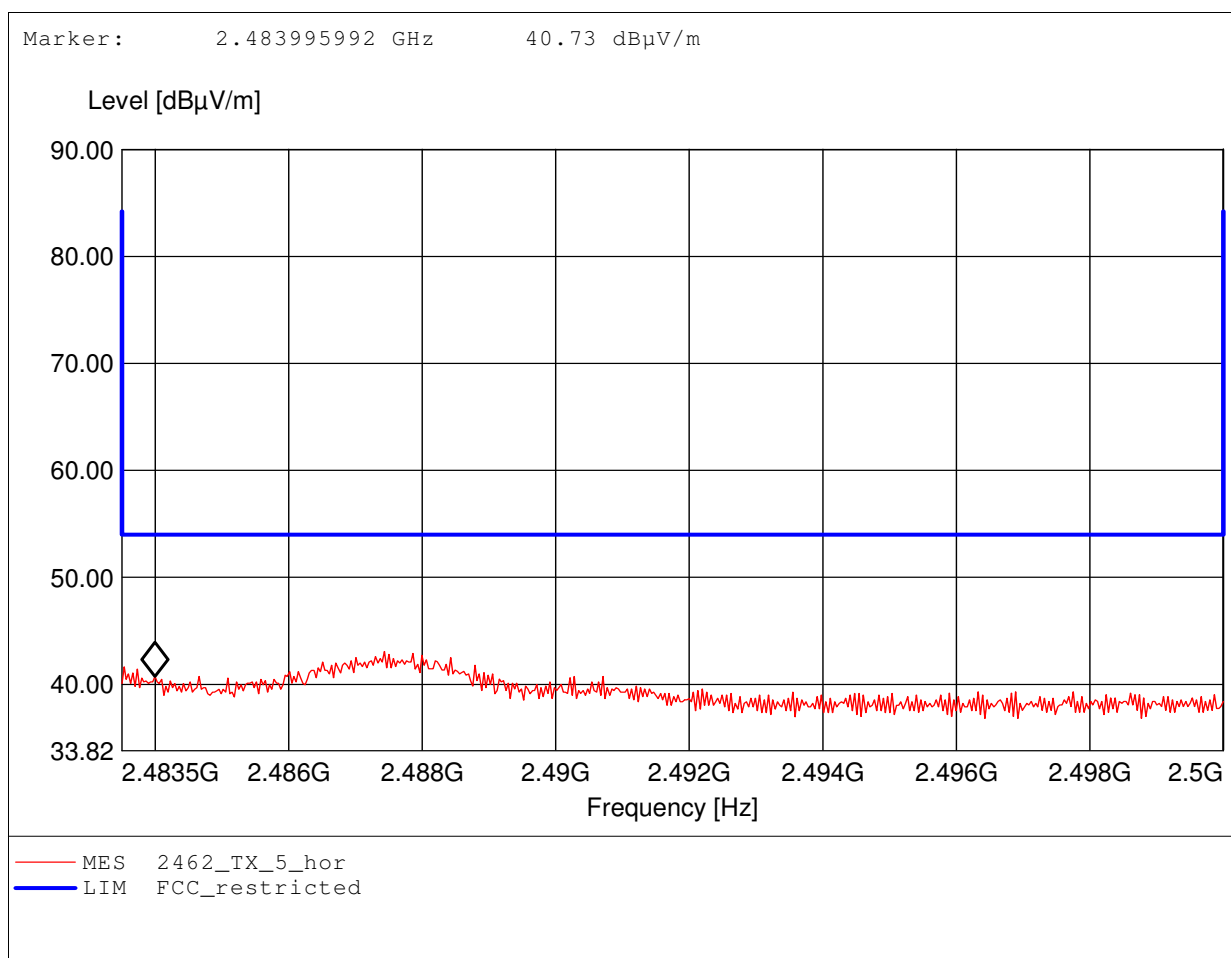
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 61.53dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

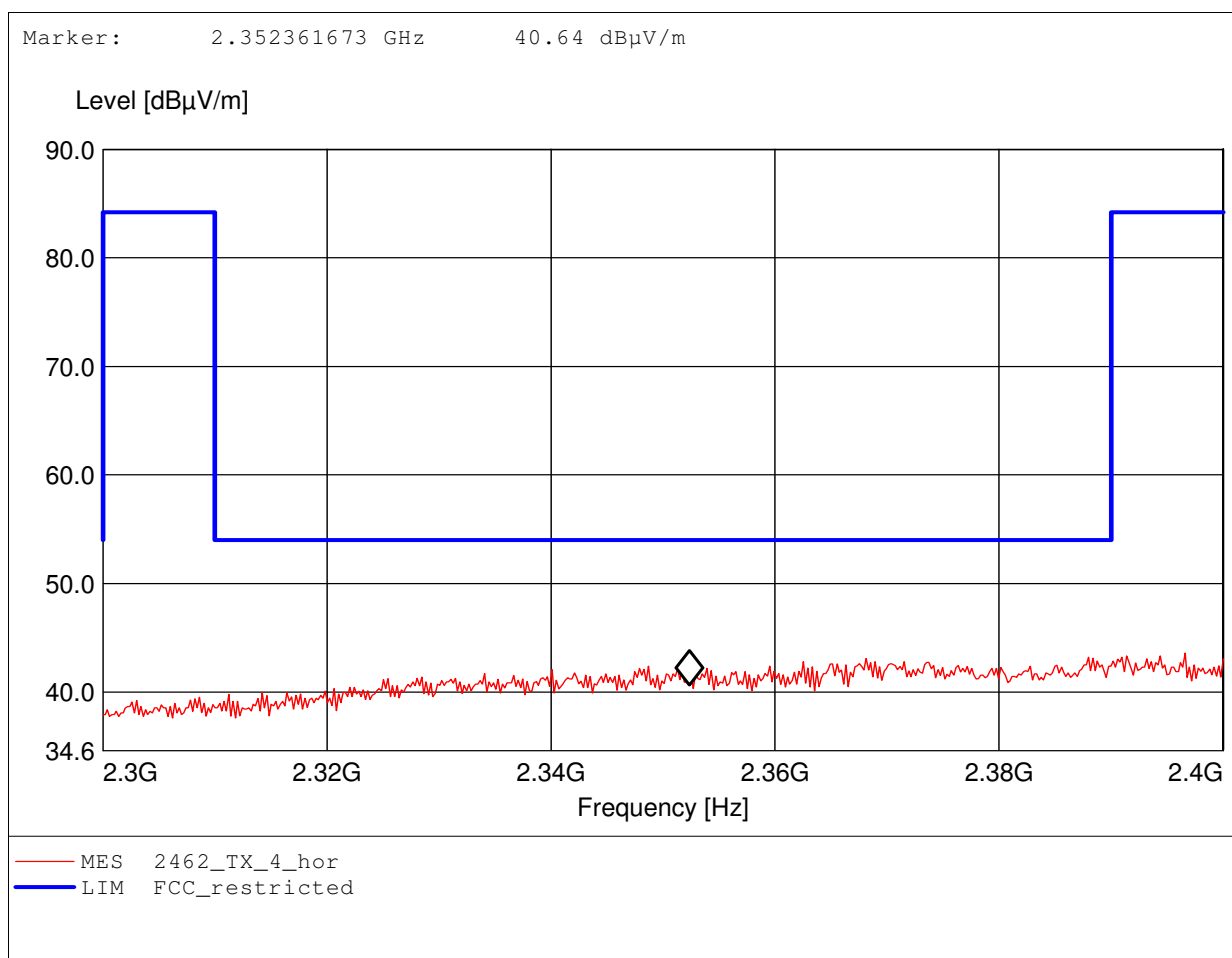
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.487GHz, Emax: 43.09dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

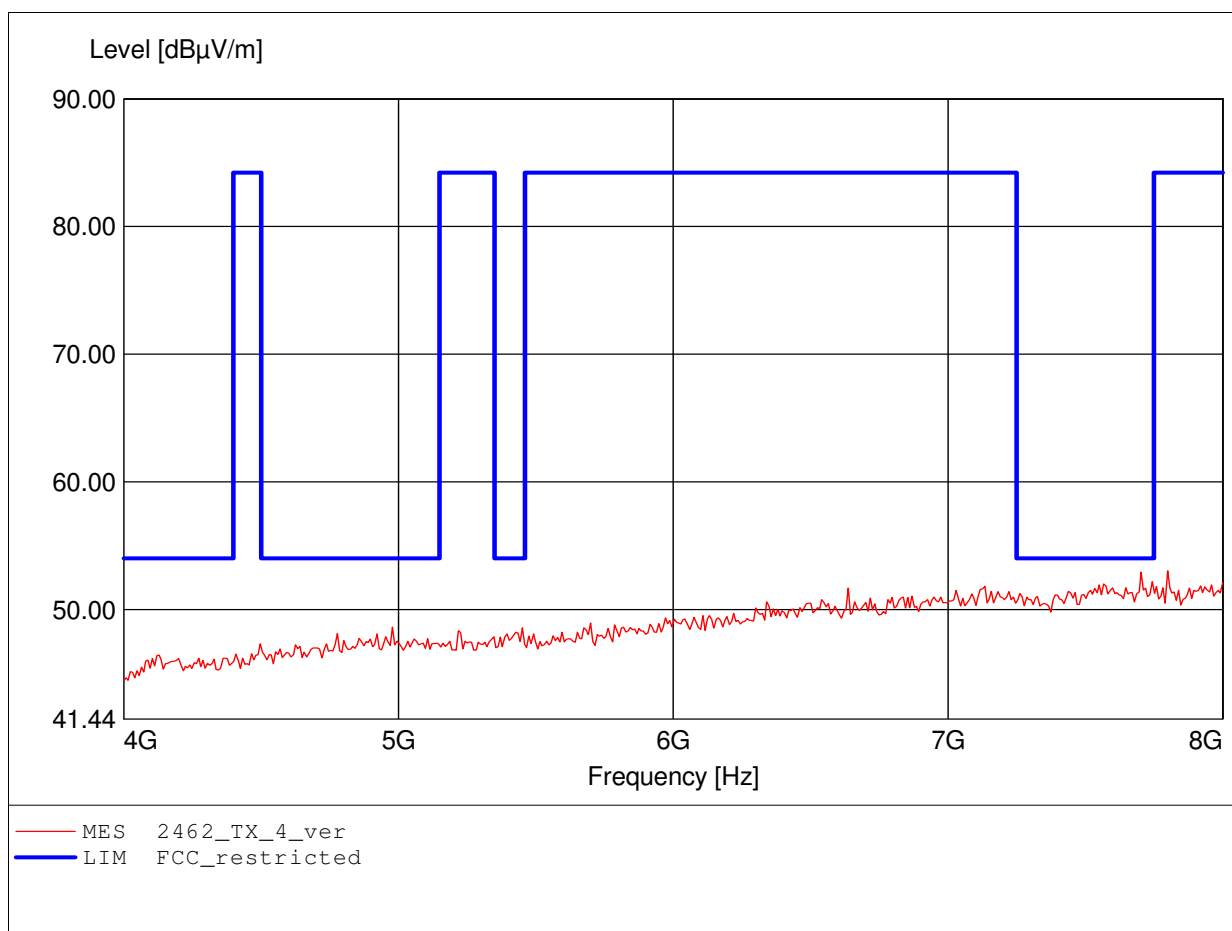
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.397GHz, Emax: 43.58dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

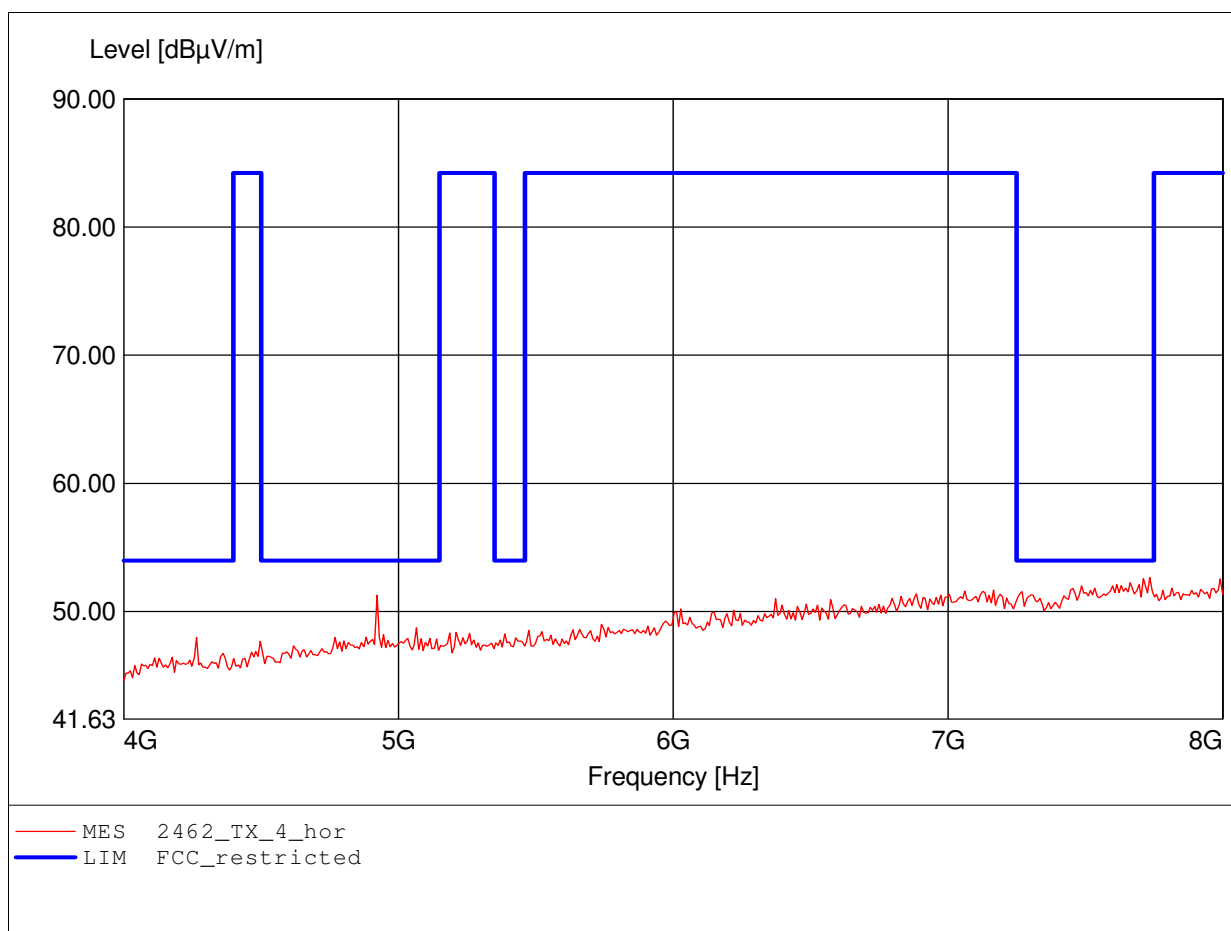
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.800GHz, Emax: 53.04dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

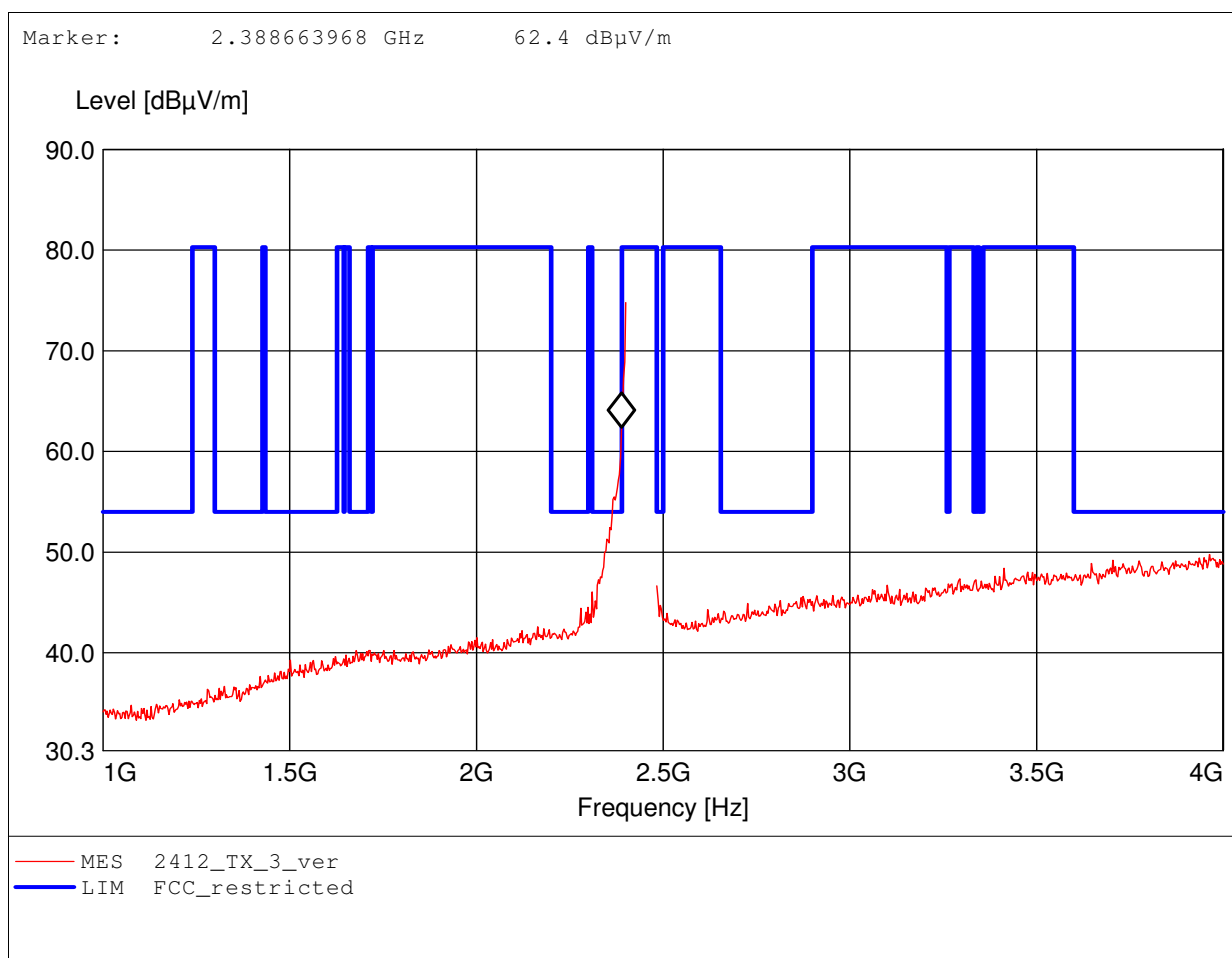
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / DSSS / 1Mbit/s / Powerlevel 18dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.735GHz, Emax: 52.67dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

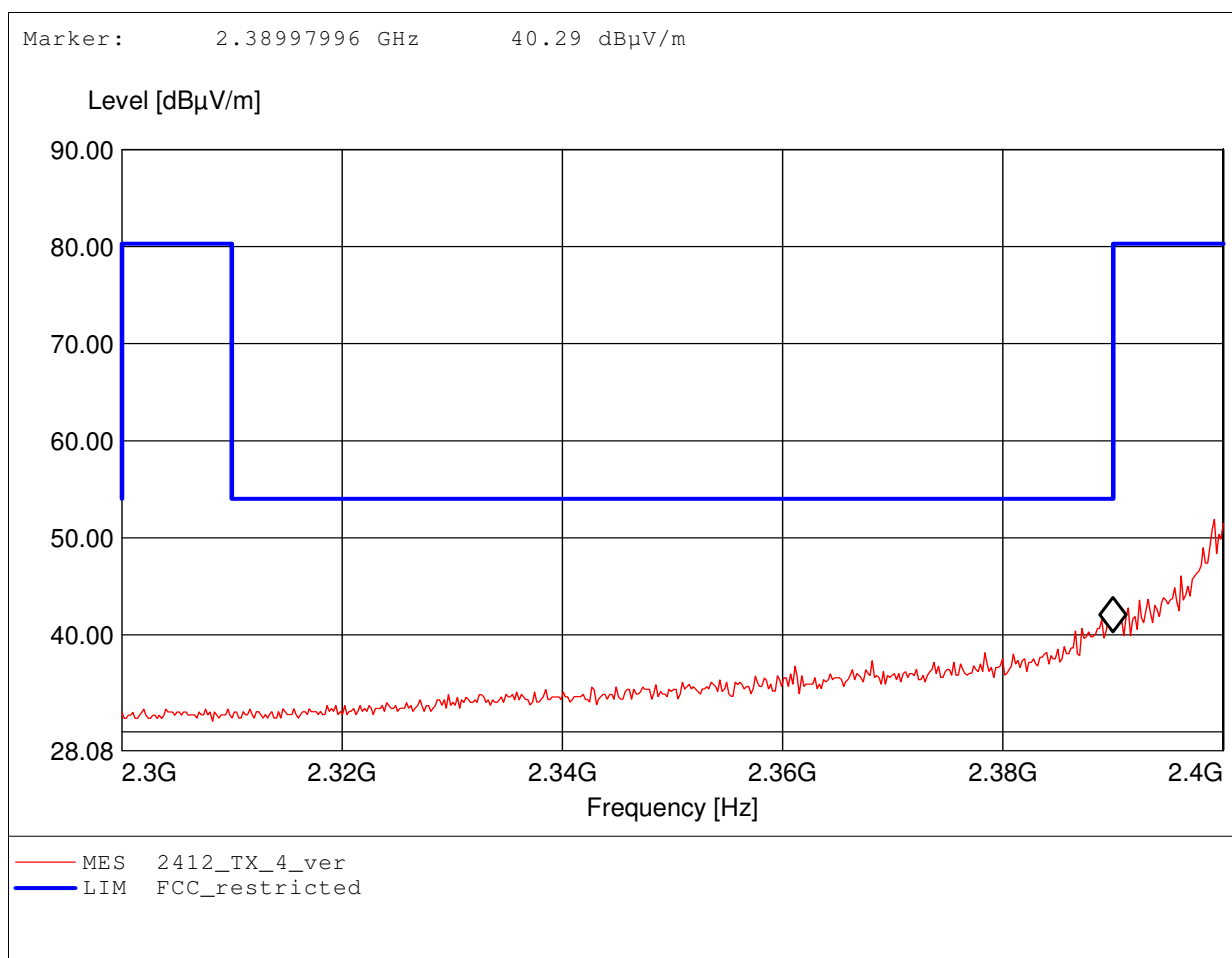
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 74.78dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

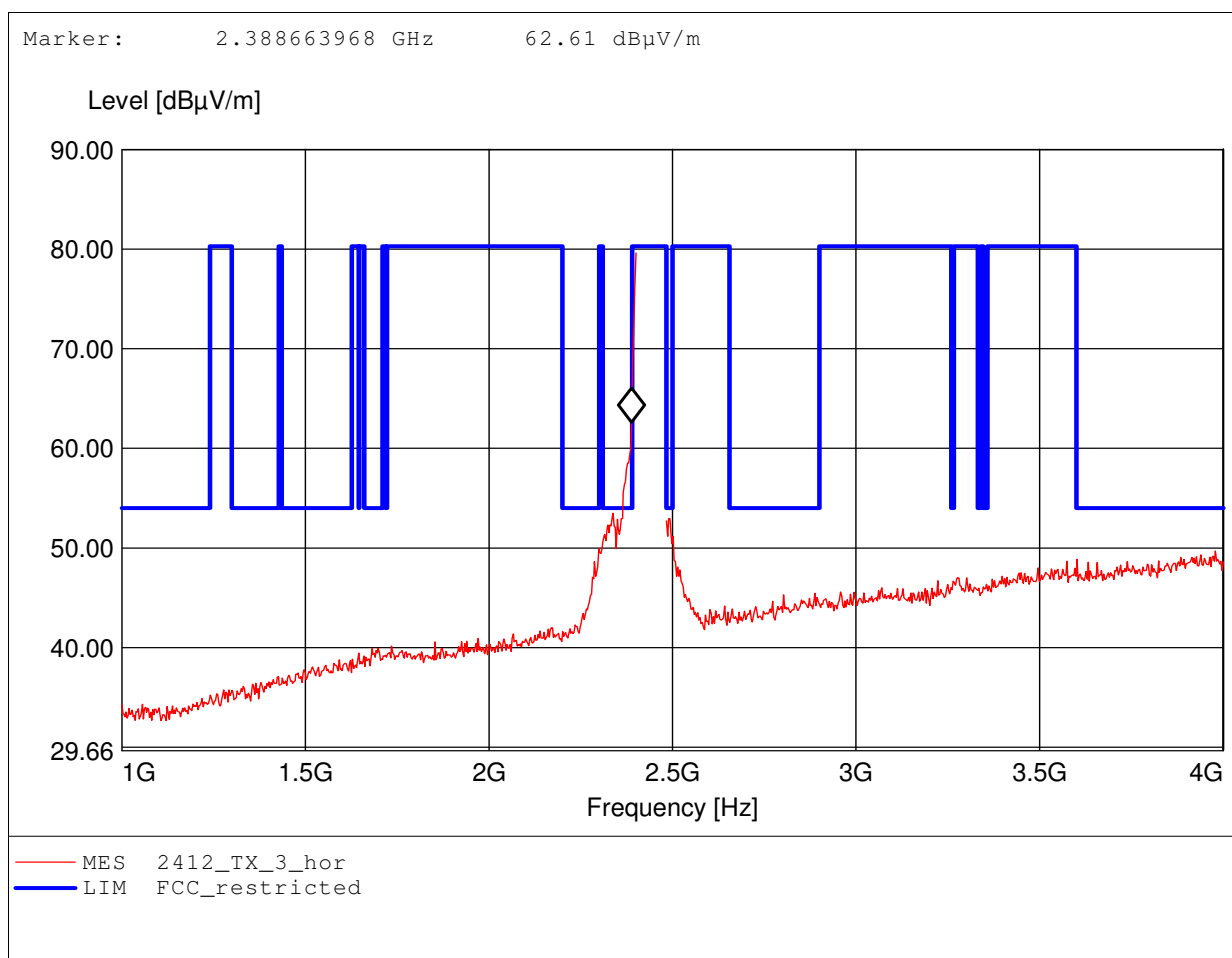
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.399GHz, Emax: 51.91dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

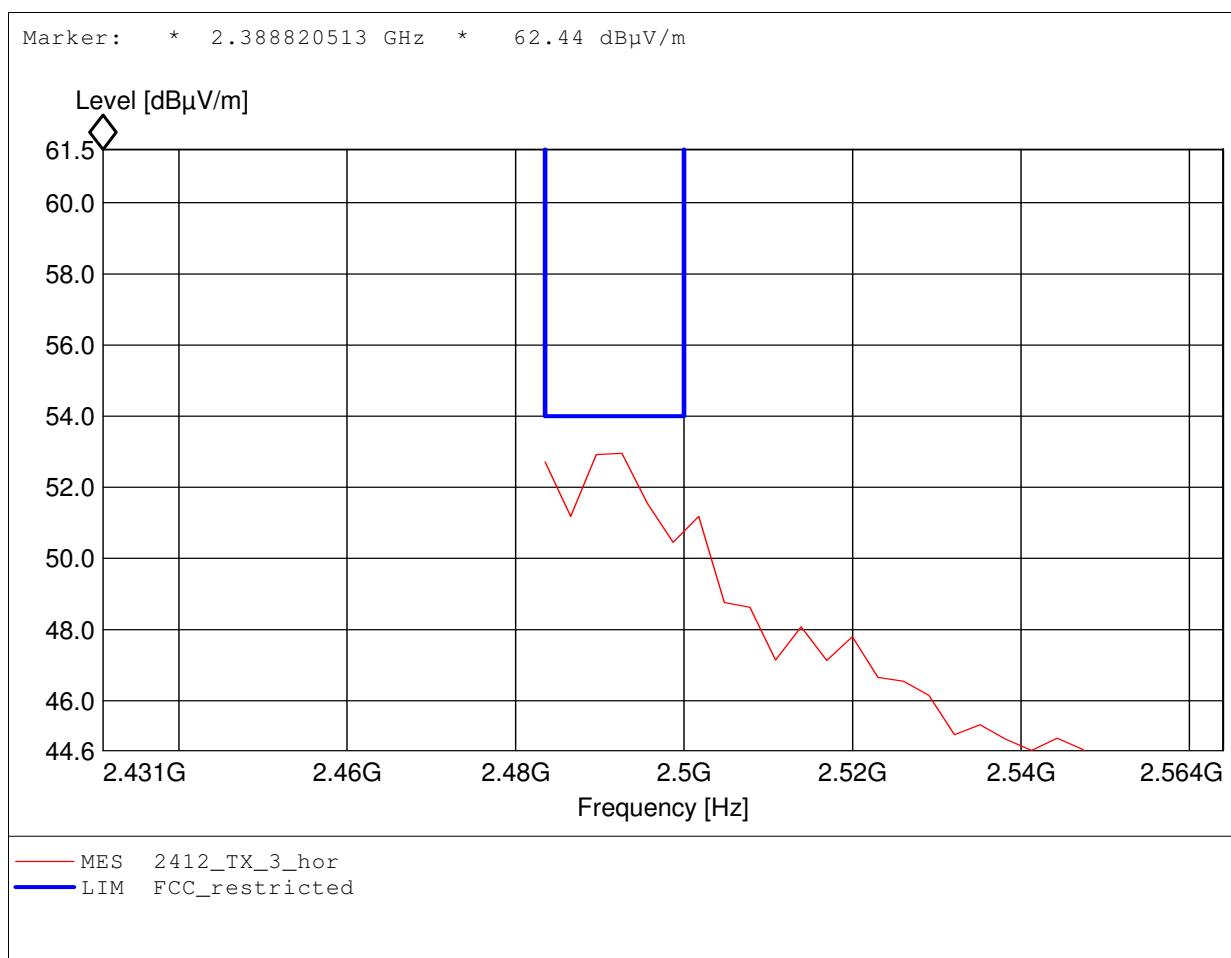
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 79.62dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

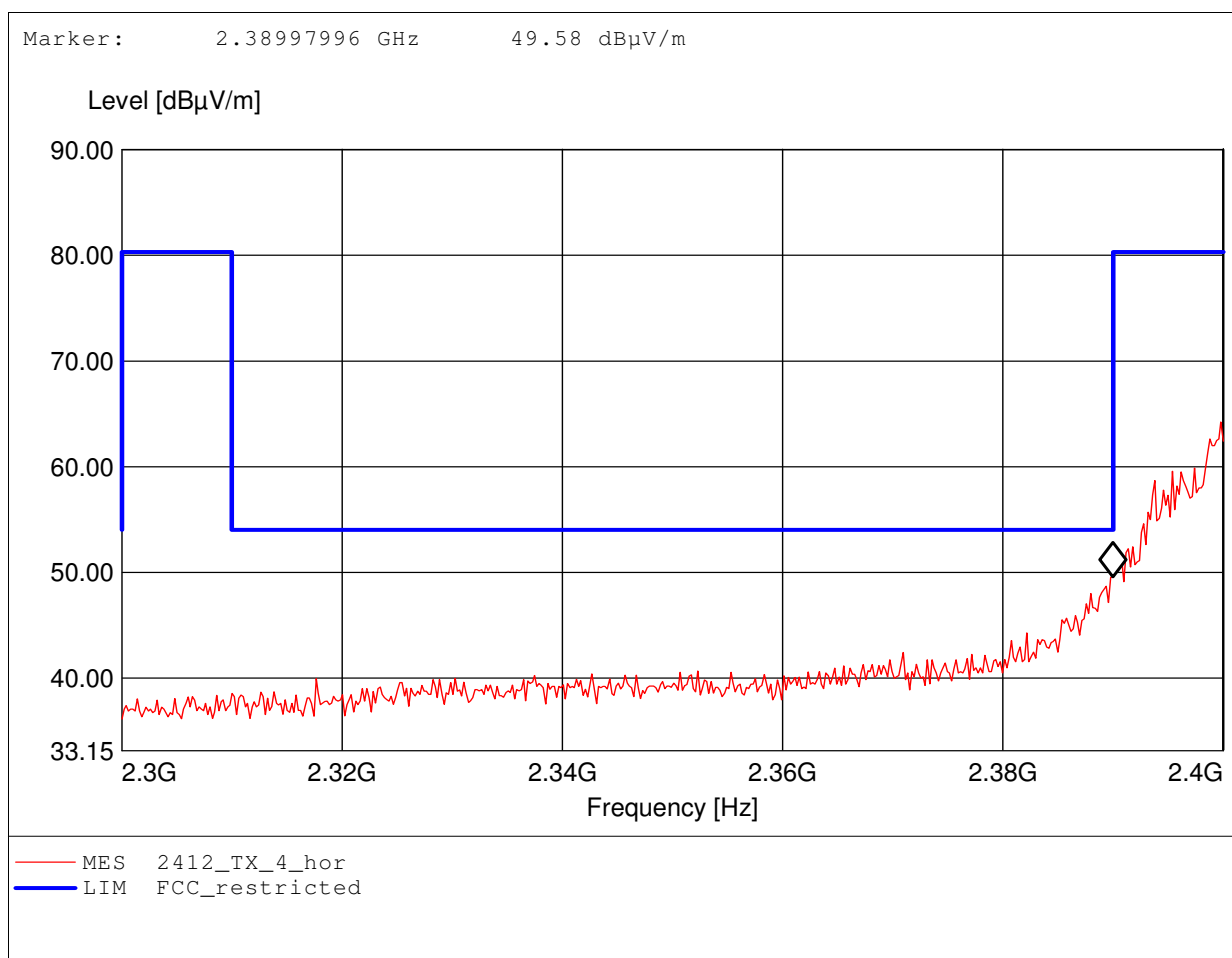
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 79.62dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

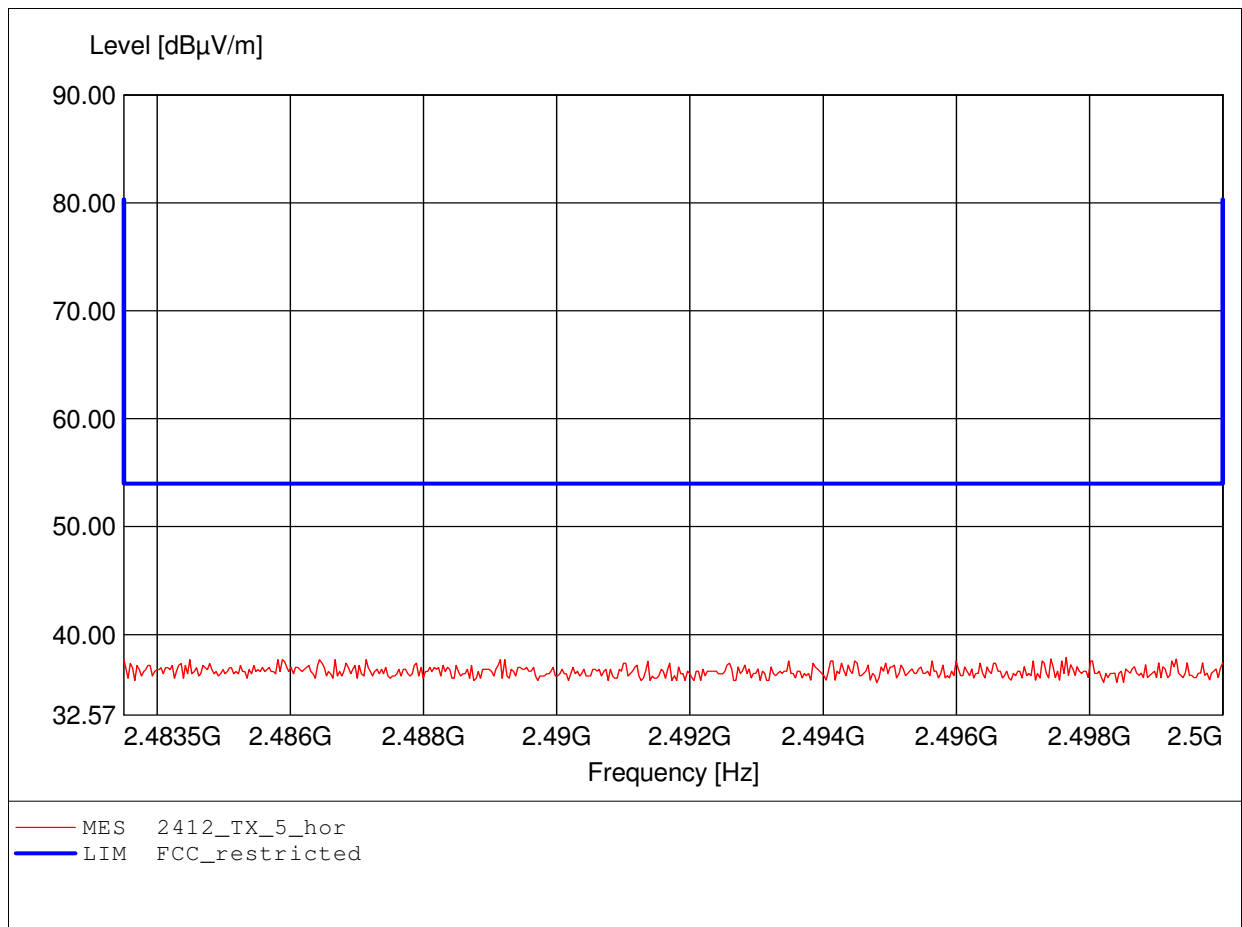
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.400GHz, Emax: 64.23dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

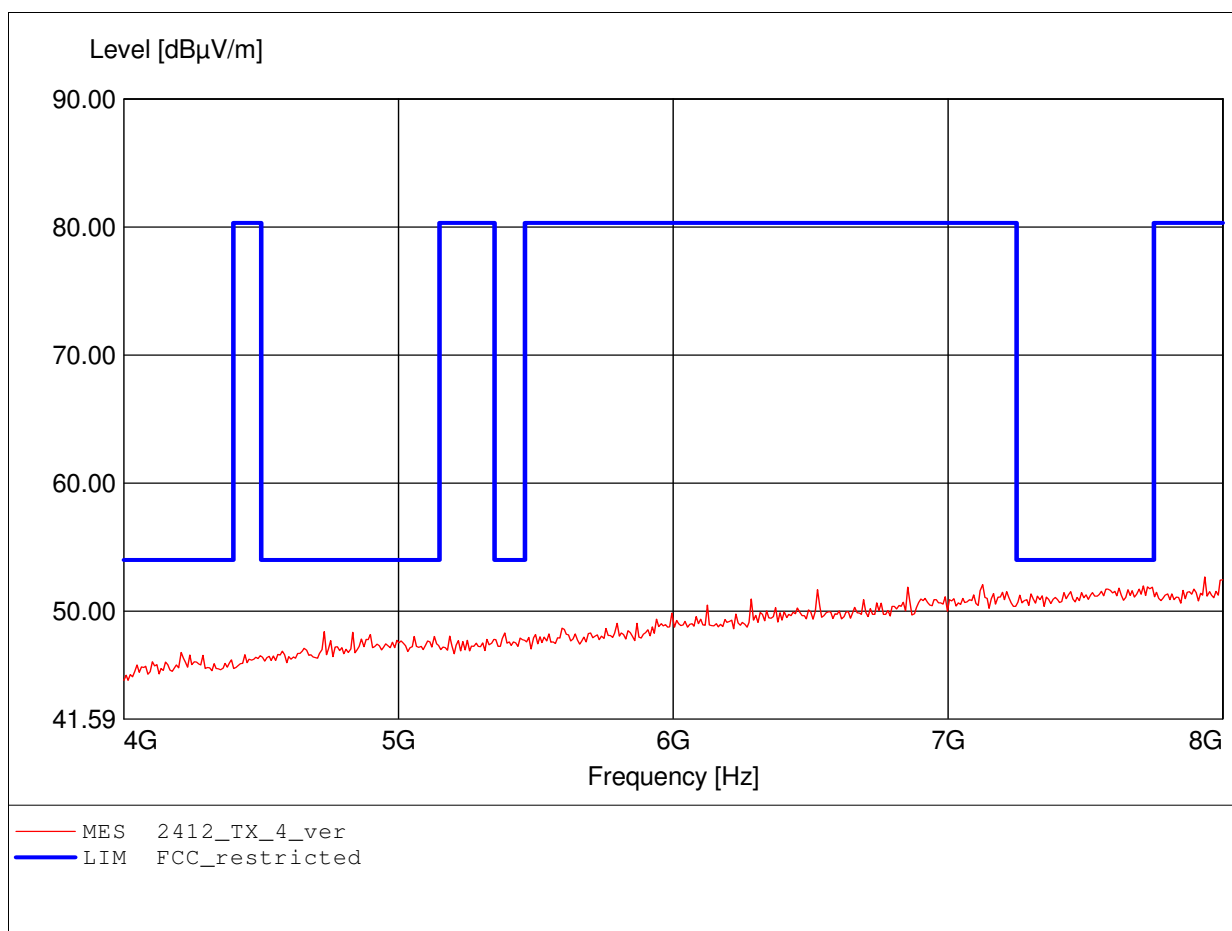
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.498GHz, Emax: 37.91dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

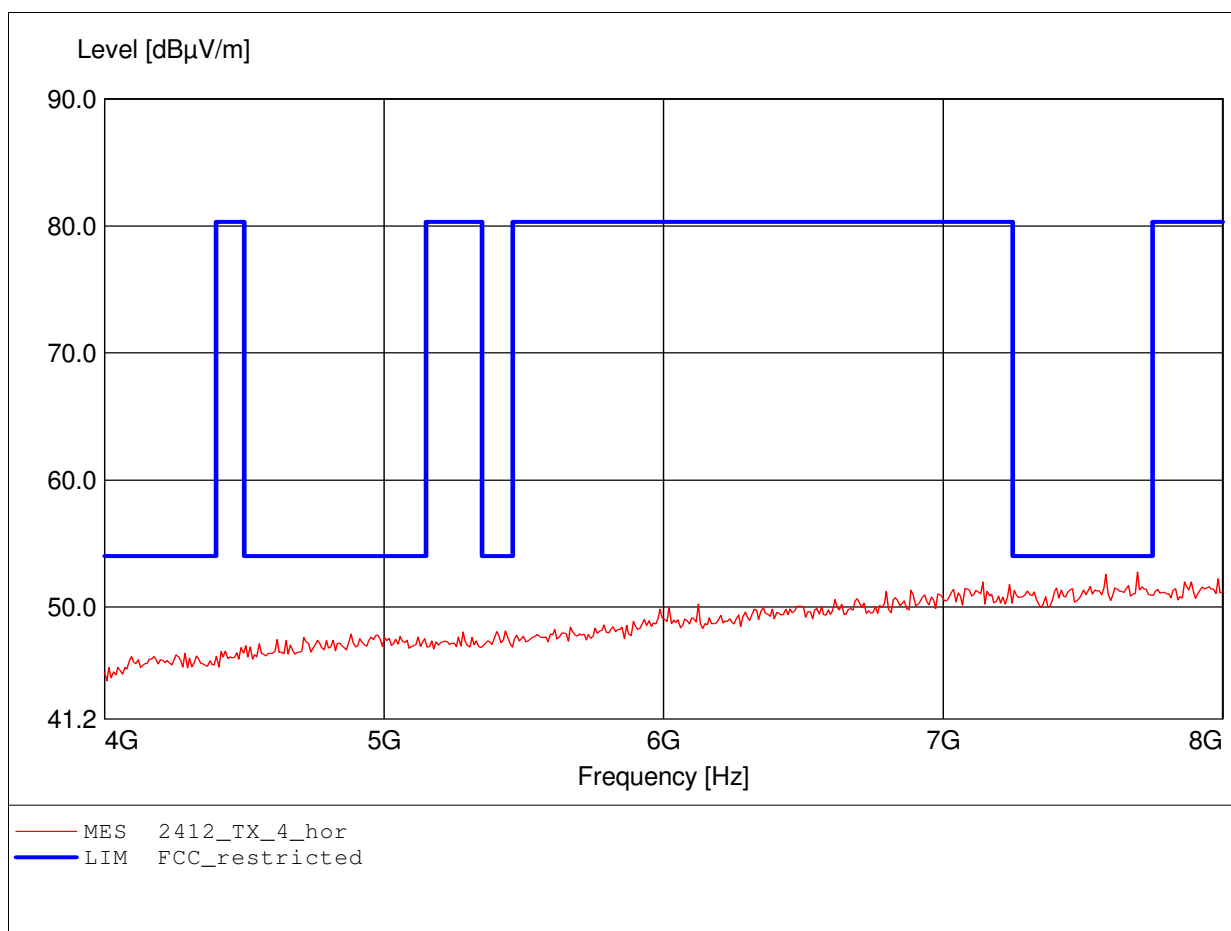
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.936GHz, Emax: 52.67dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

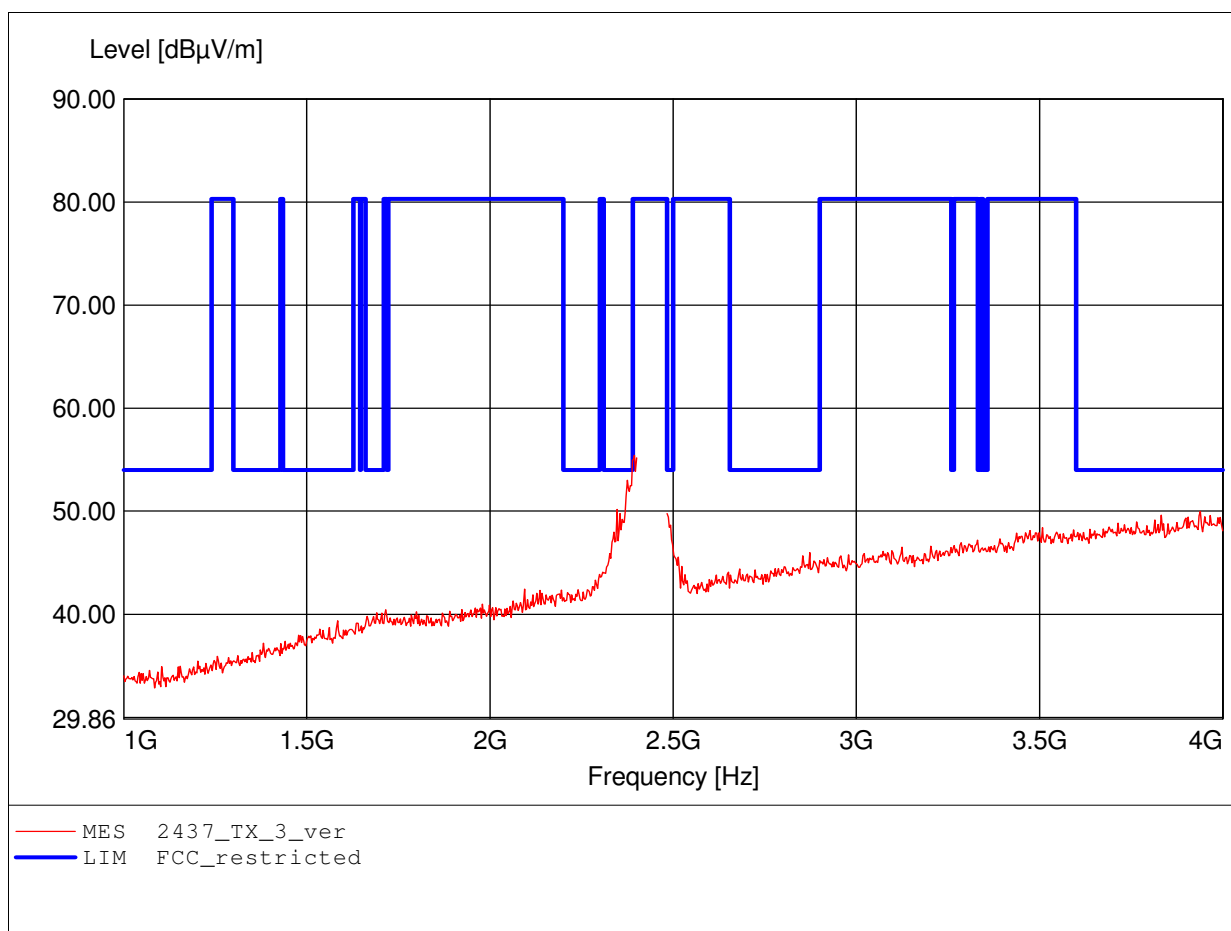
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 1 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2412
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.695GHz, Emax: 52.76dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

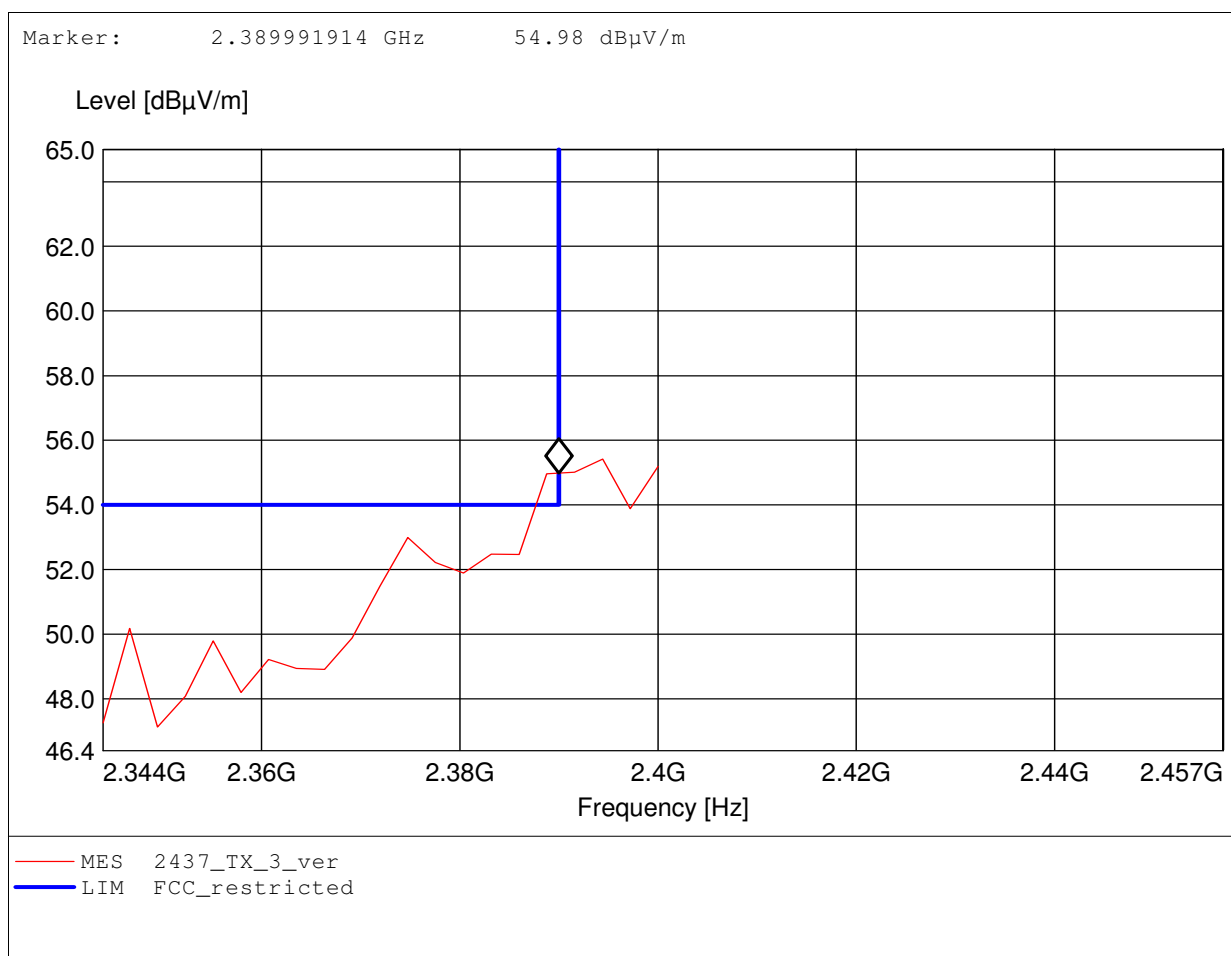
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.394GHz, Emax: 55.42dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

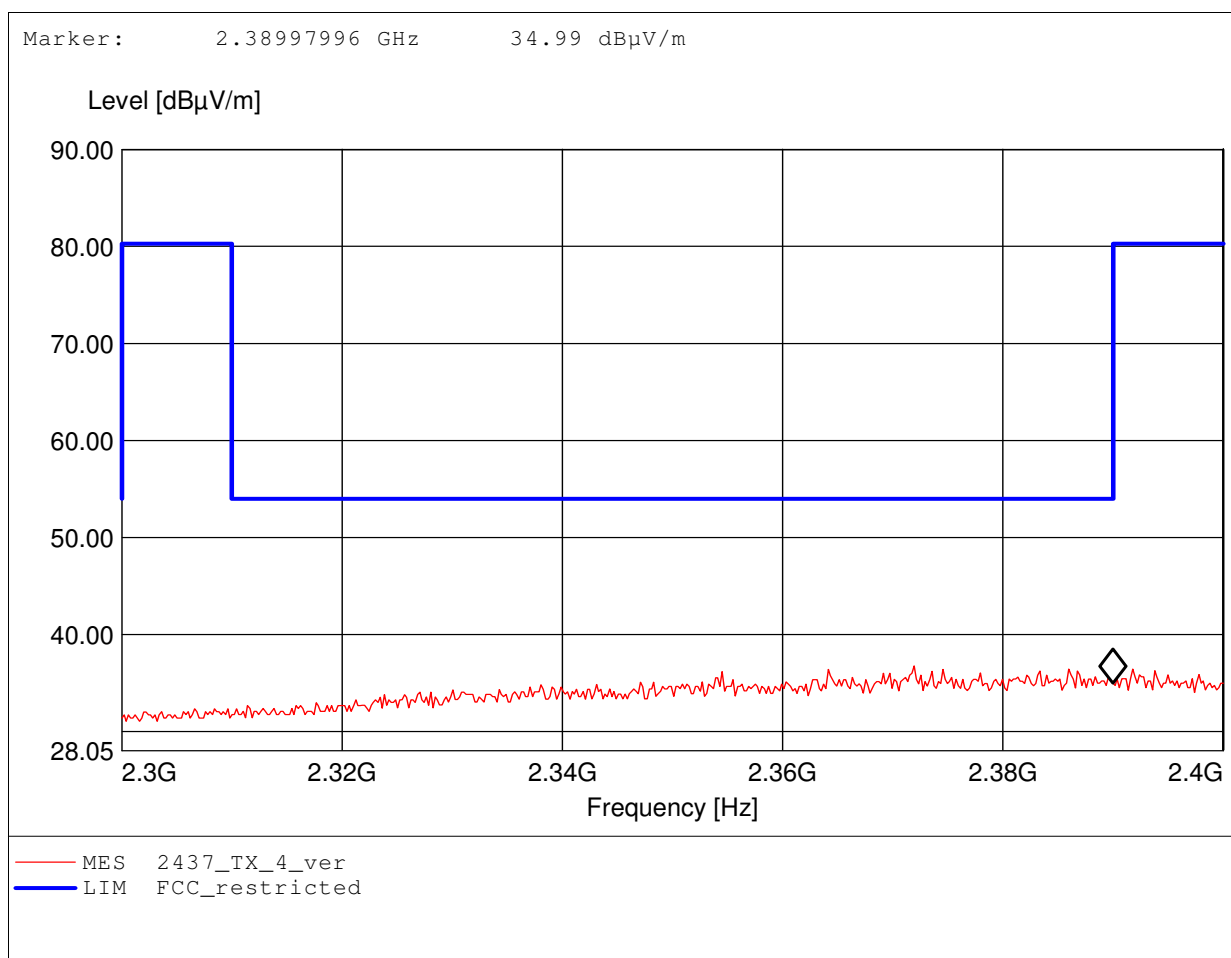
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.394GHz, Emax: 55.42dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

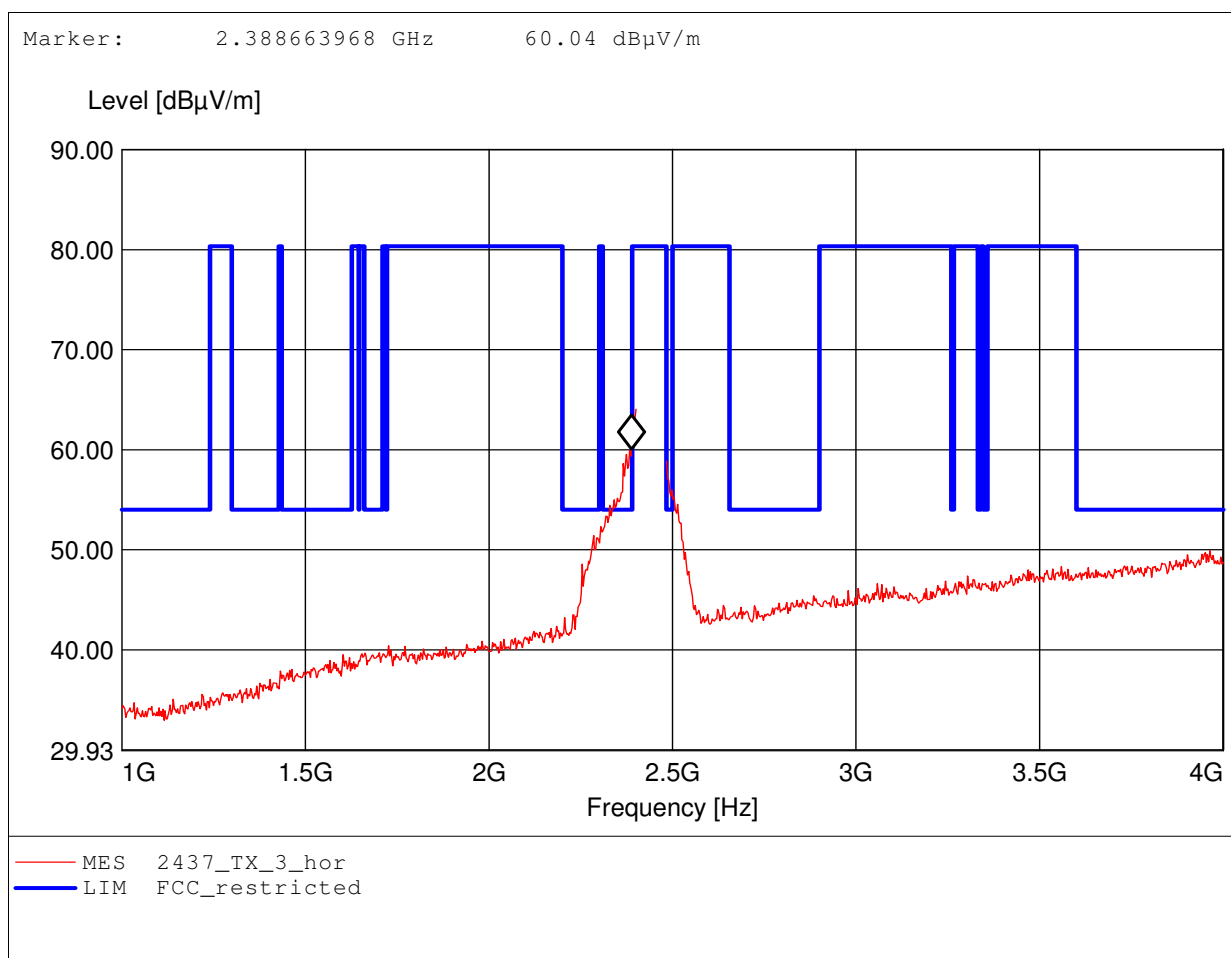
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.372GHz, Emax: 36.79dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

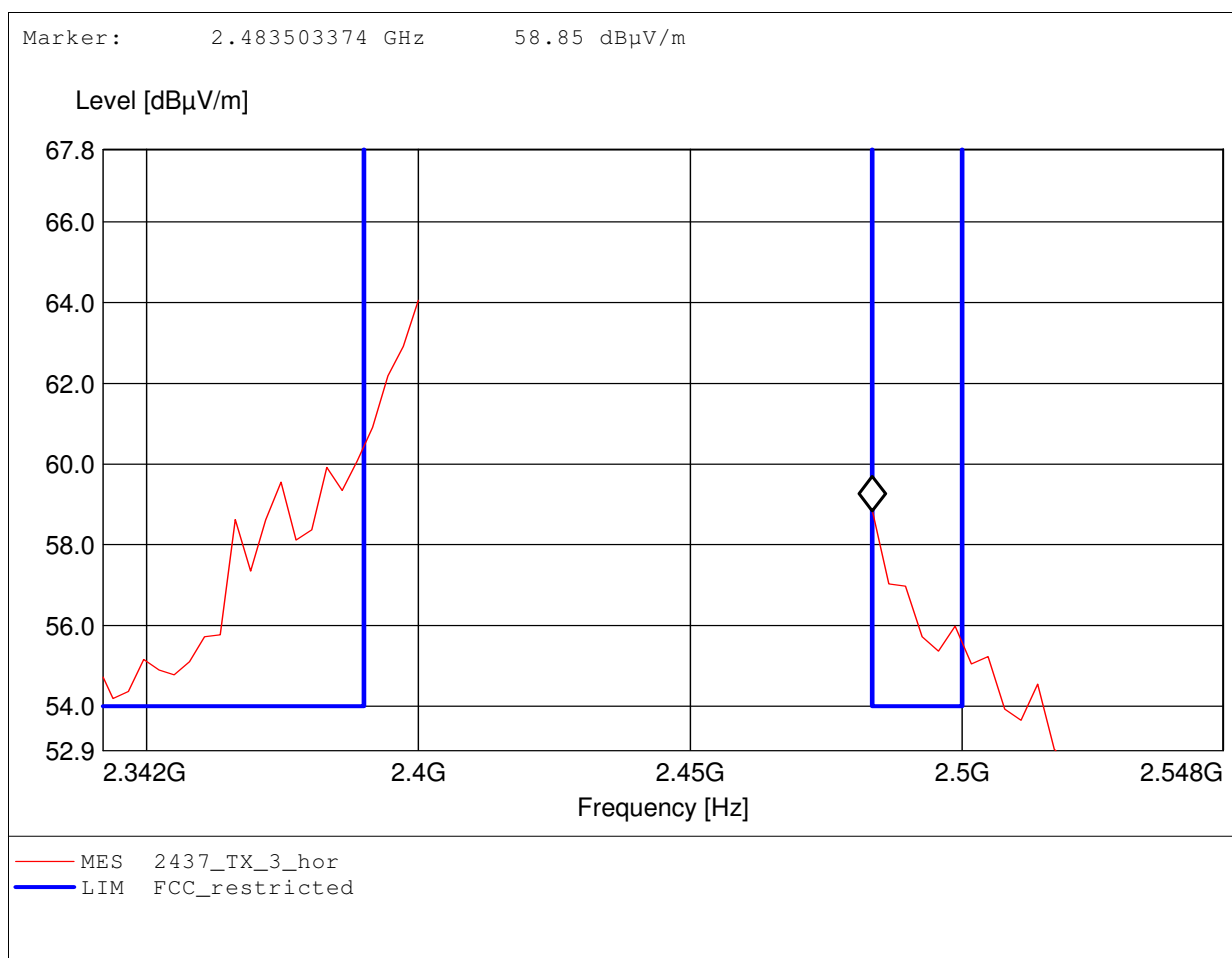
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 64.05dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

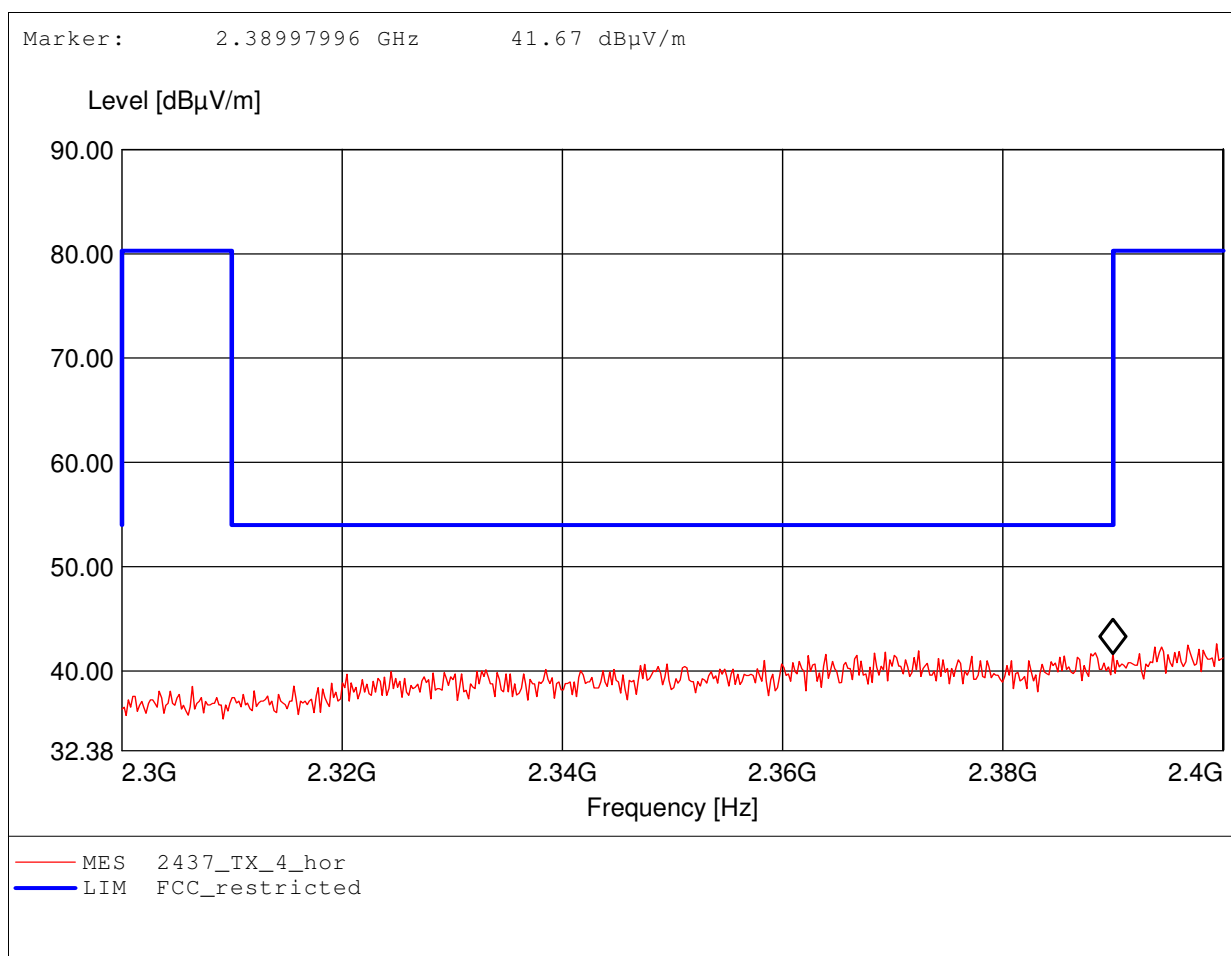
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.400GHz, Emax: 64.05dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

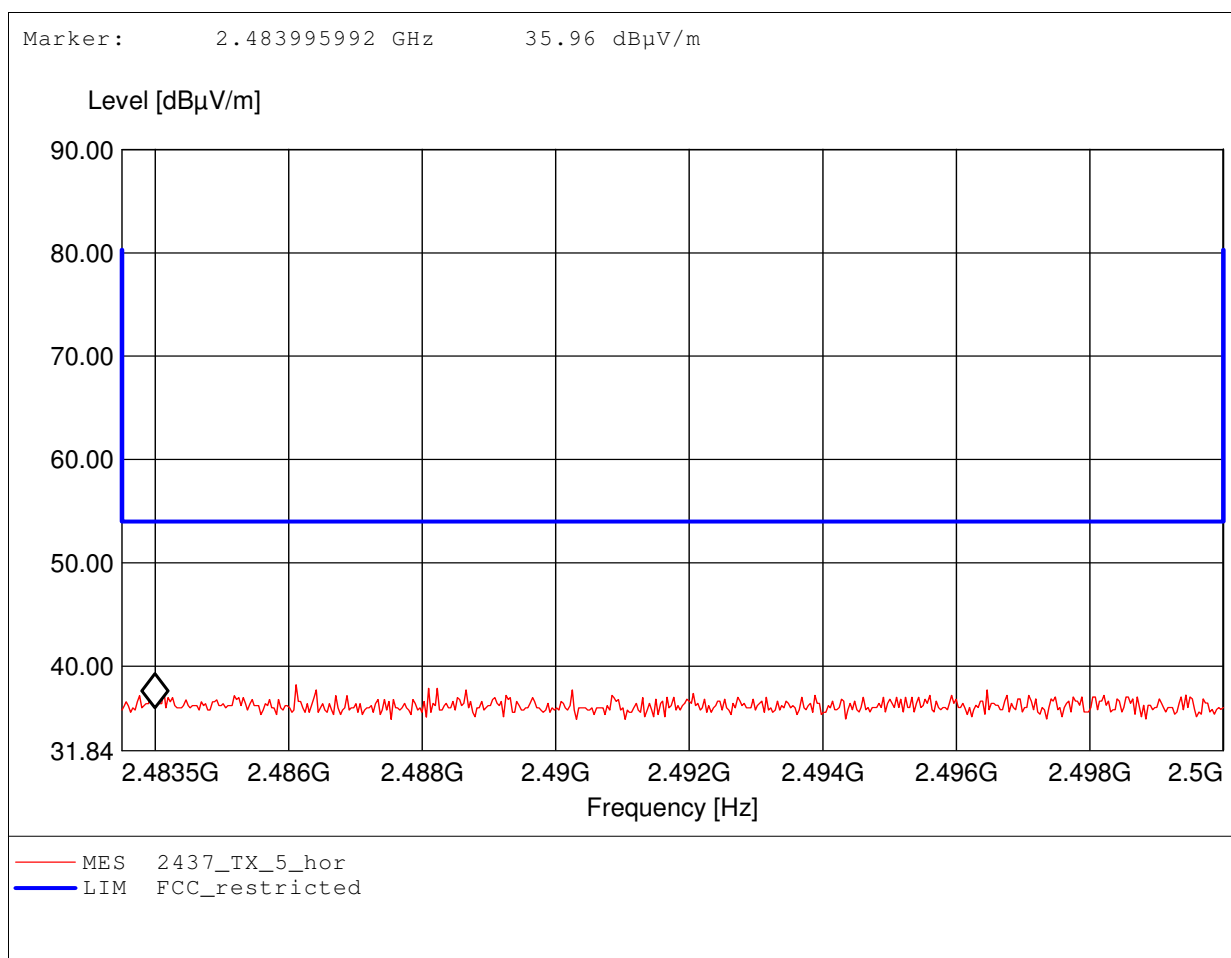
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.399GHz, Emax: 42.60dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

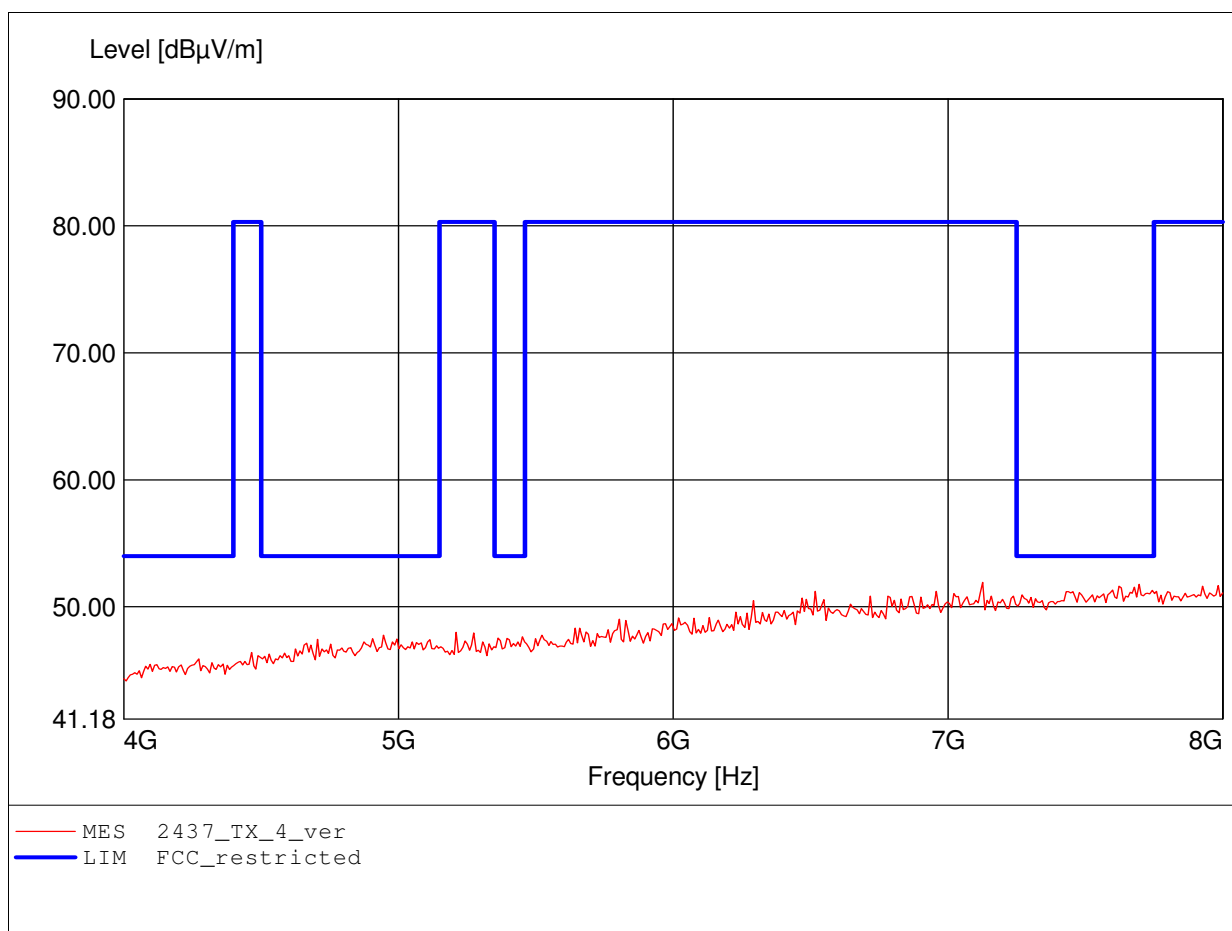
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.486GHz, Emax: 38.20dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

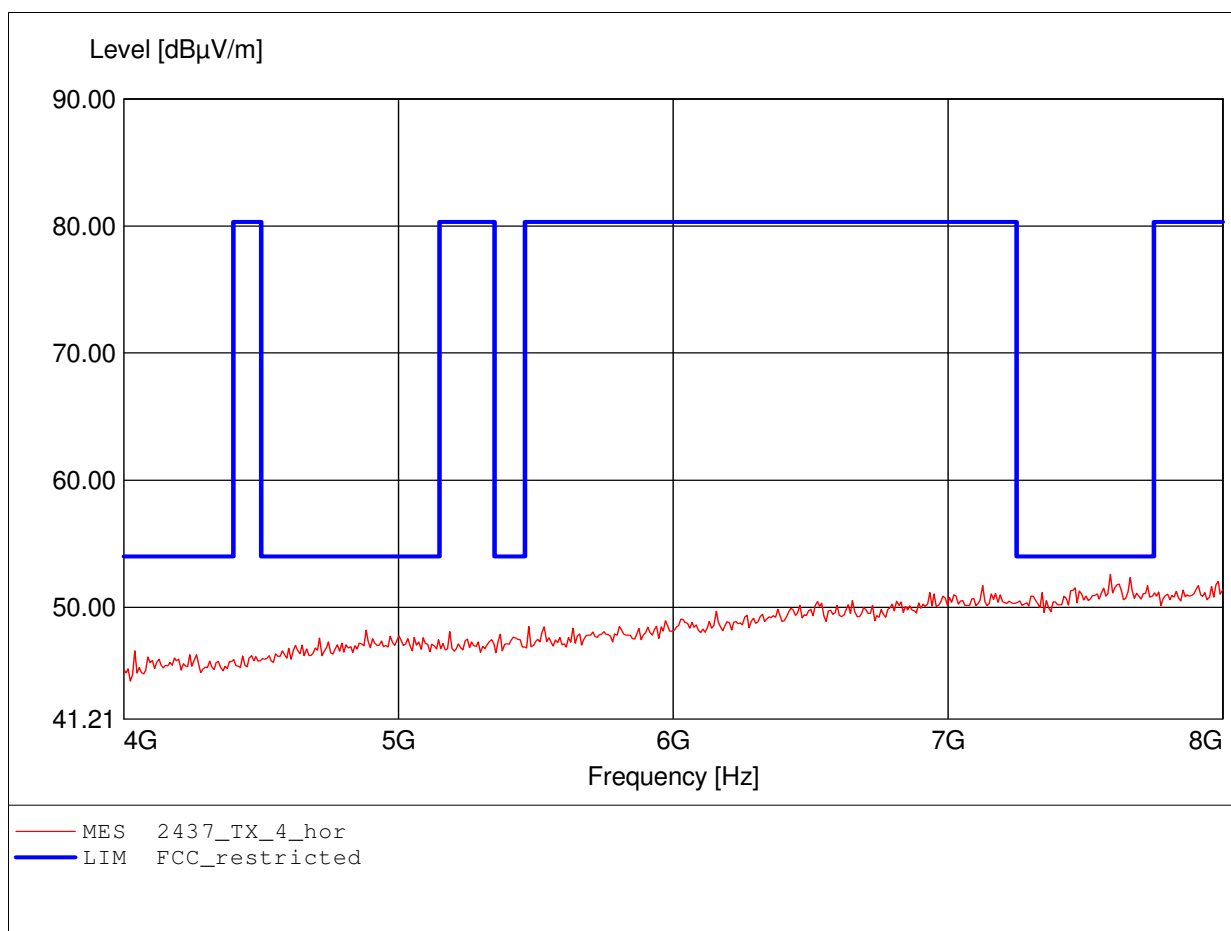
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.126GHz, Emax: 51.92dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

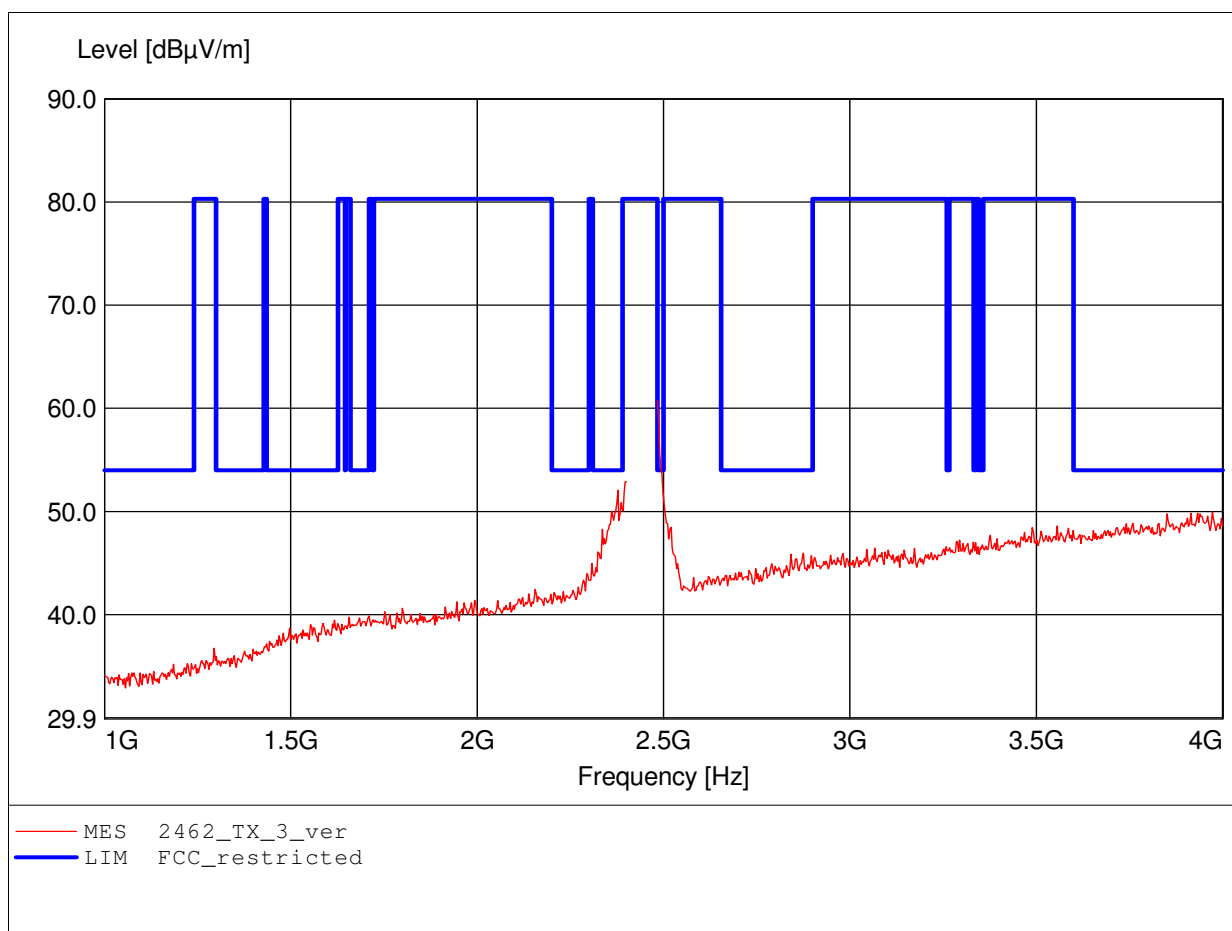
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.591GHz, Emax: 52.58dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

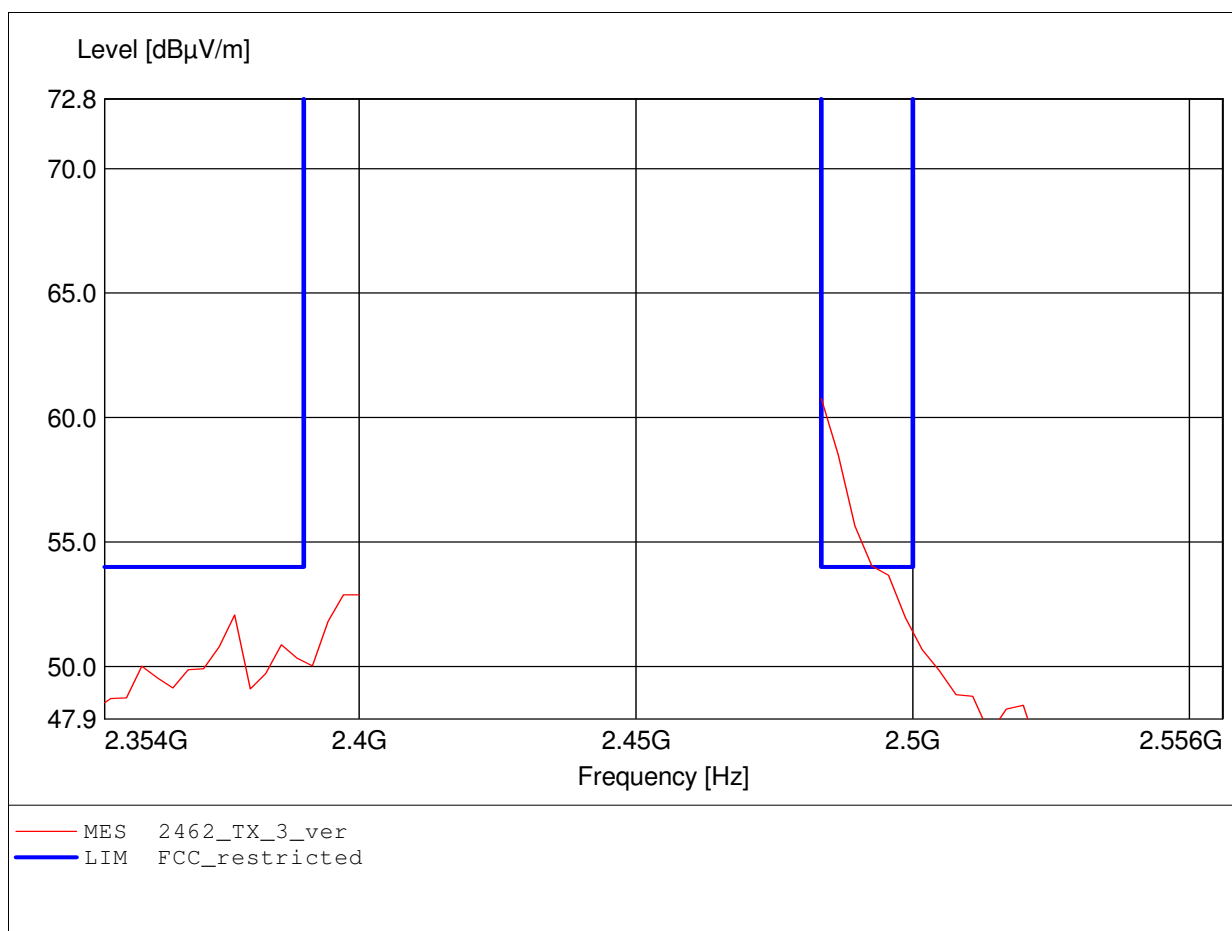
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 60.76dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

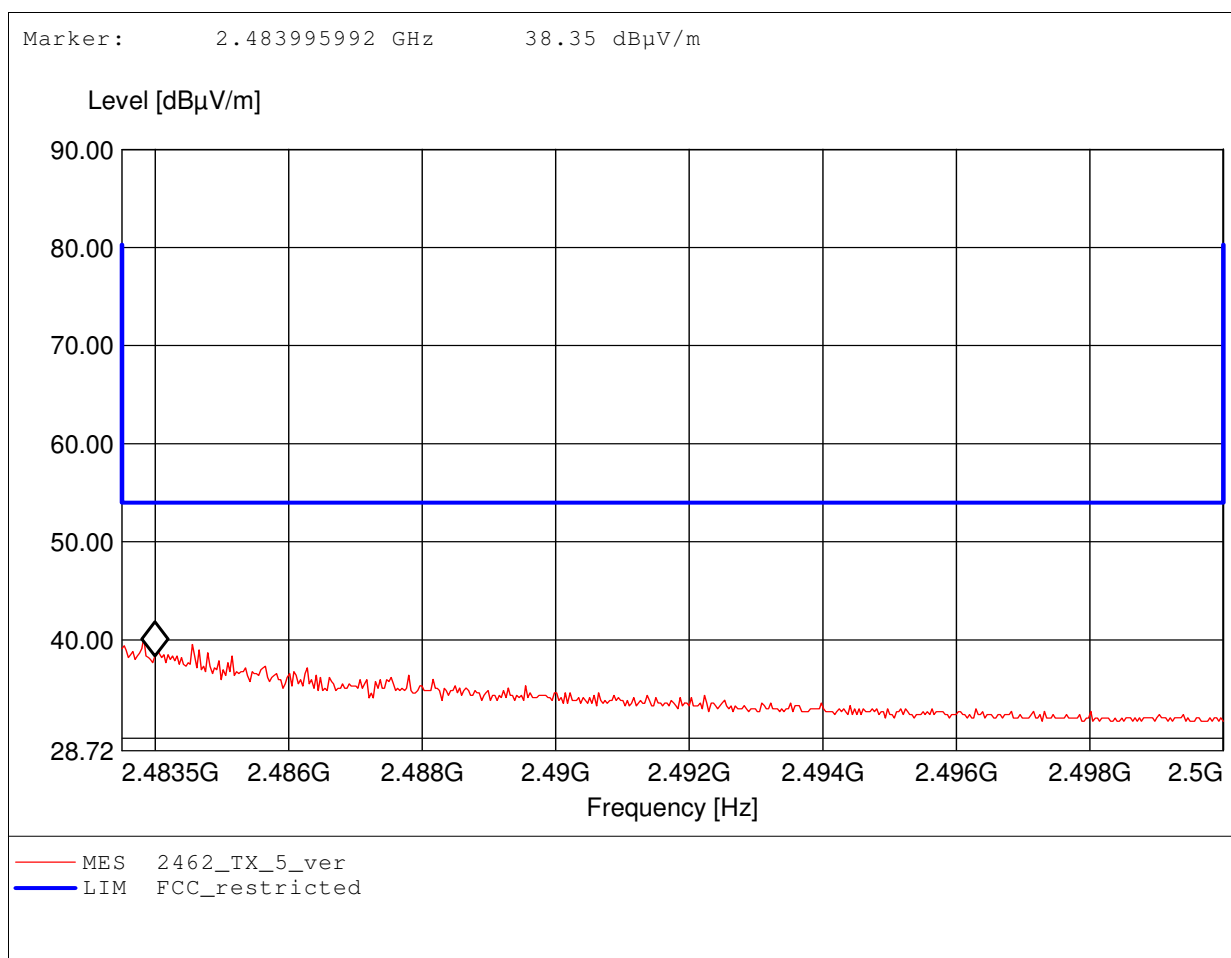
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 60.76dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

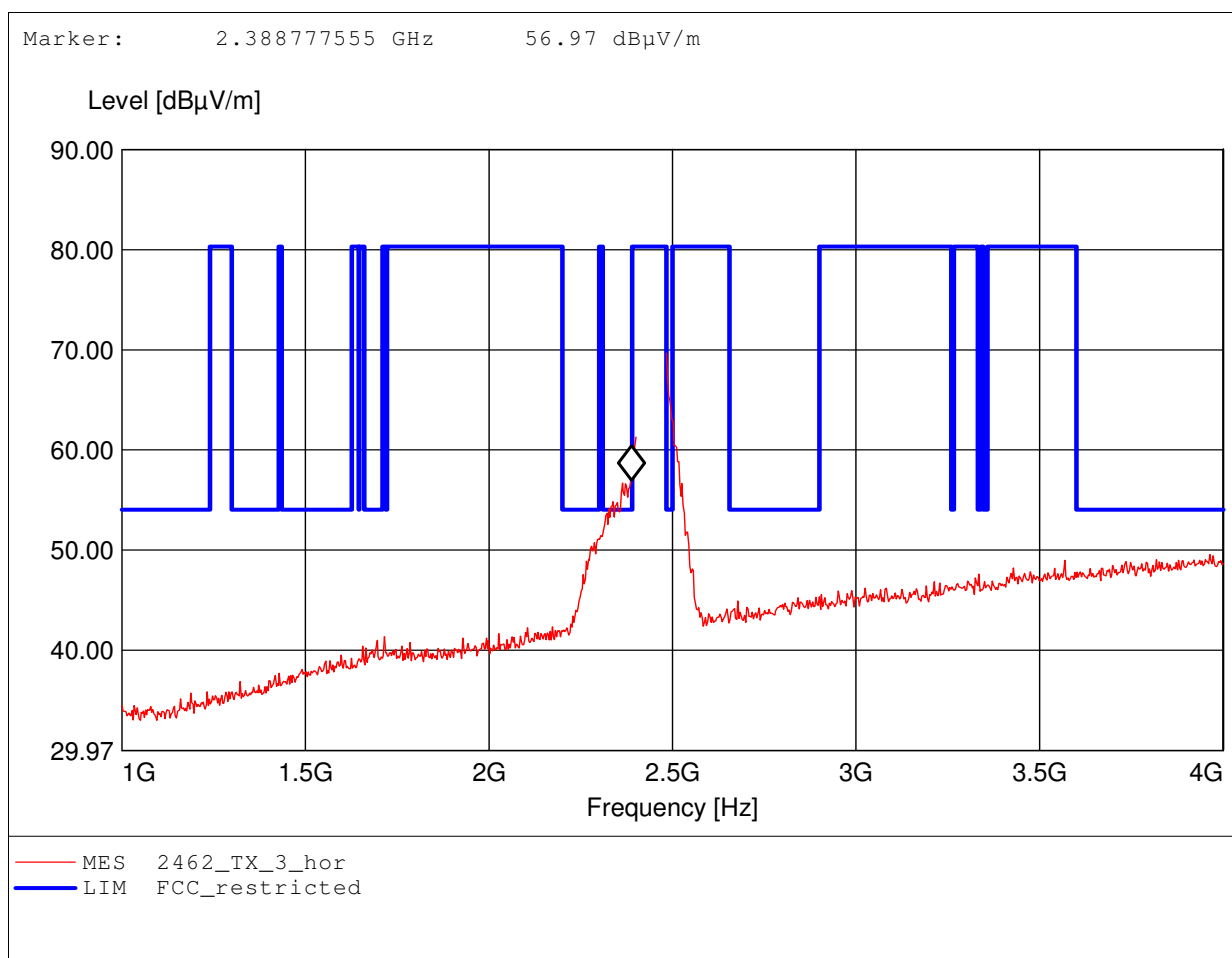
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.484GHz, Emax: 40.22dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

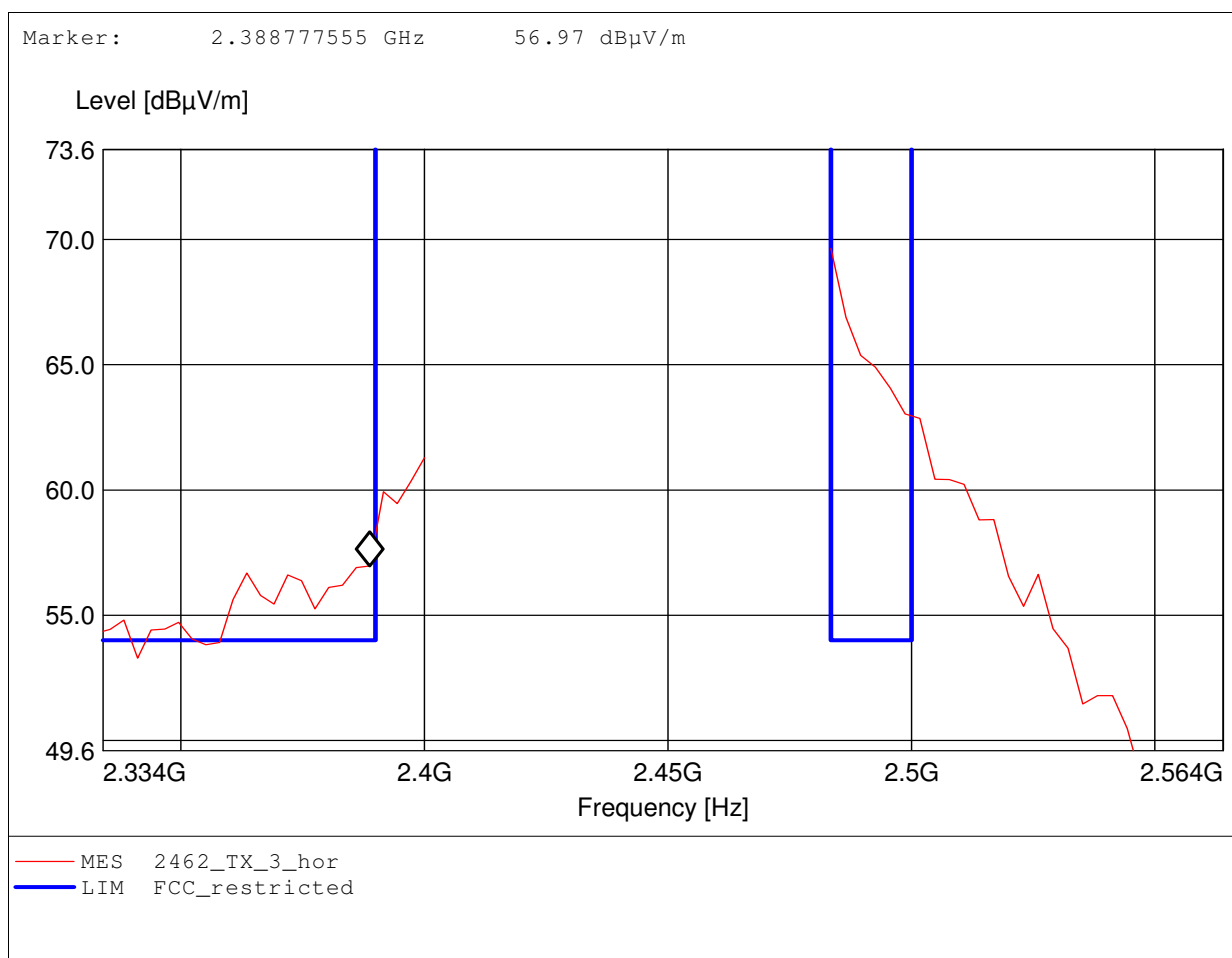
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 69.64dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

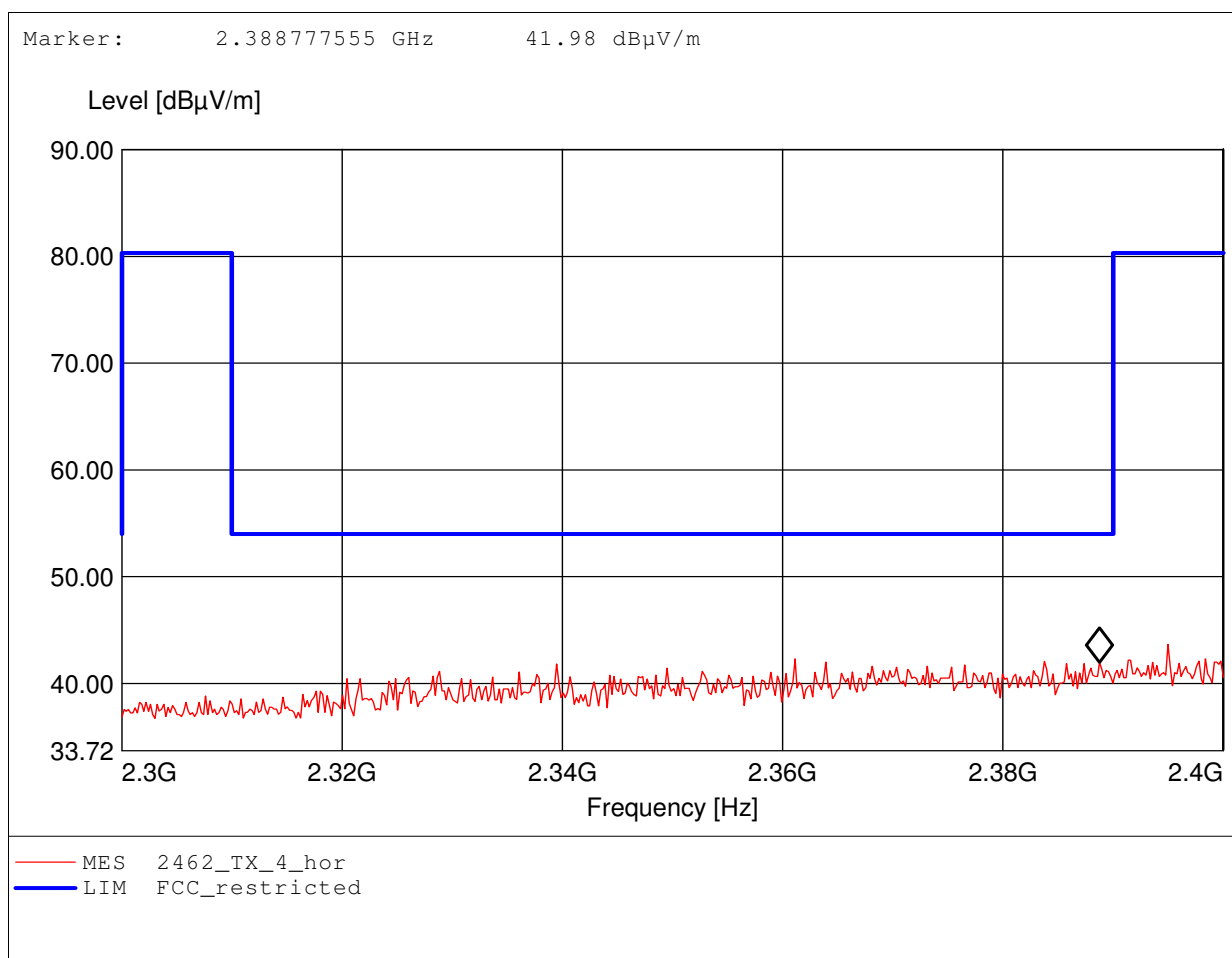
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, amplif.
Comment 2: Freq: 2.484GHz, Emax: 69.64dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

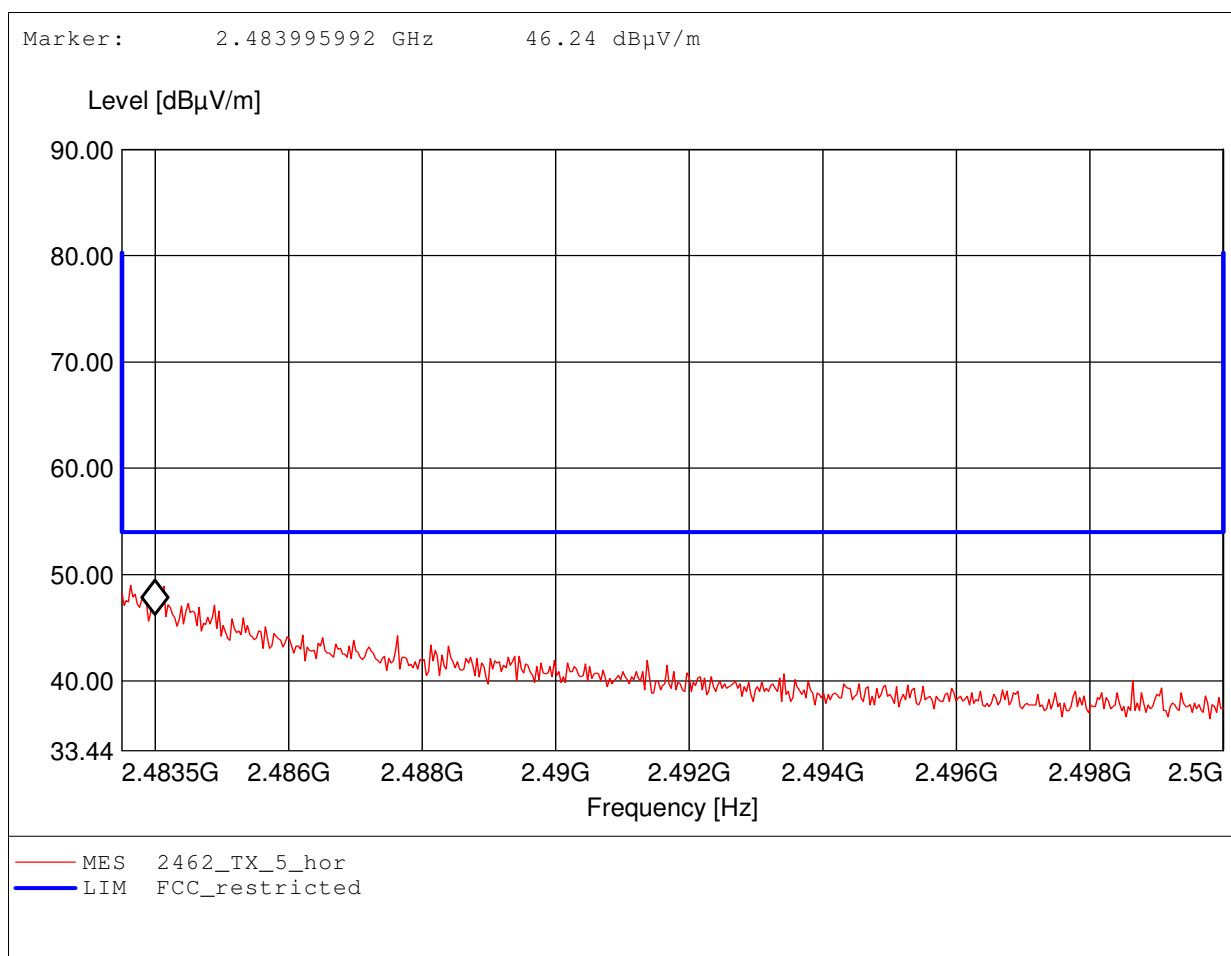
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.395GHz, Emax: 43.66dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

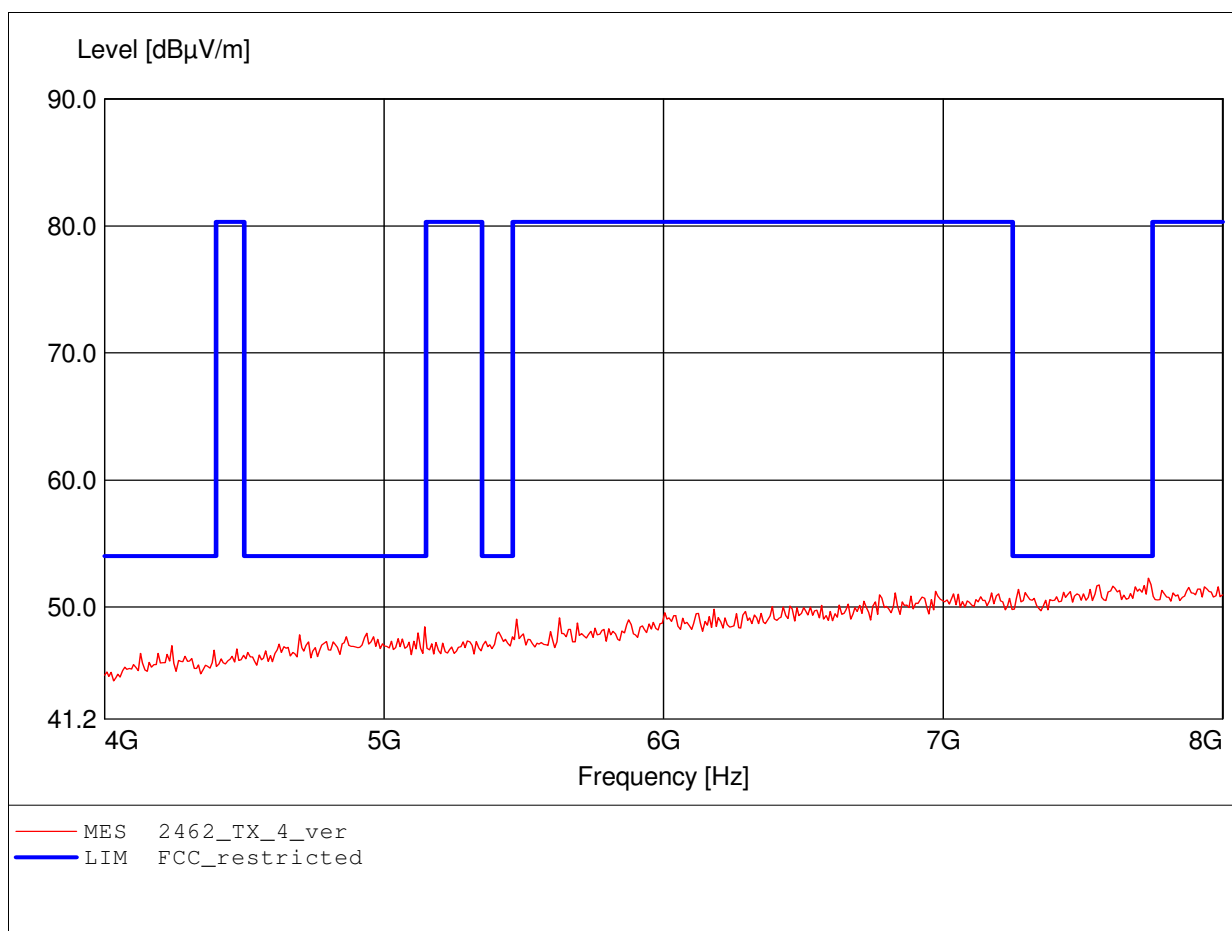
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP., Average Detector
Comment 2: Freq: 2.484GHz, Emax: 49.00dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

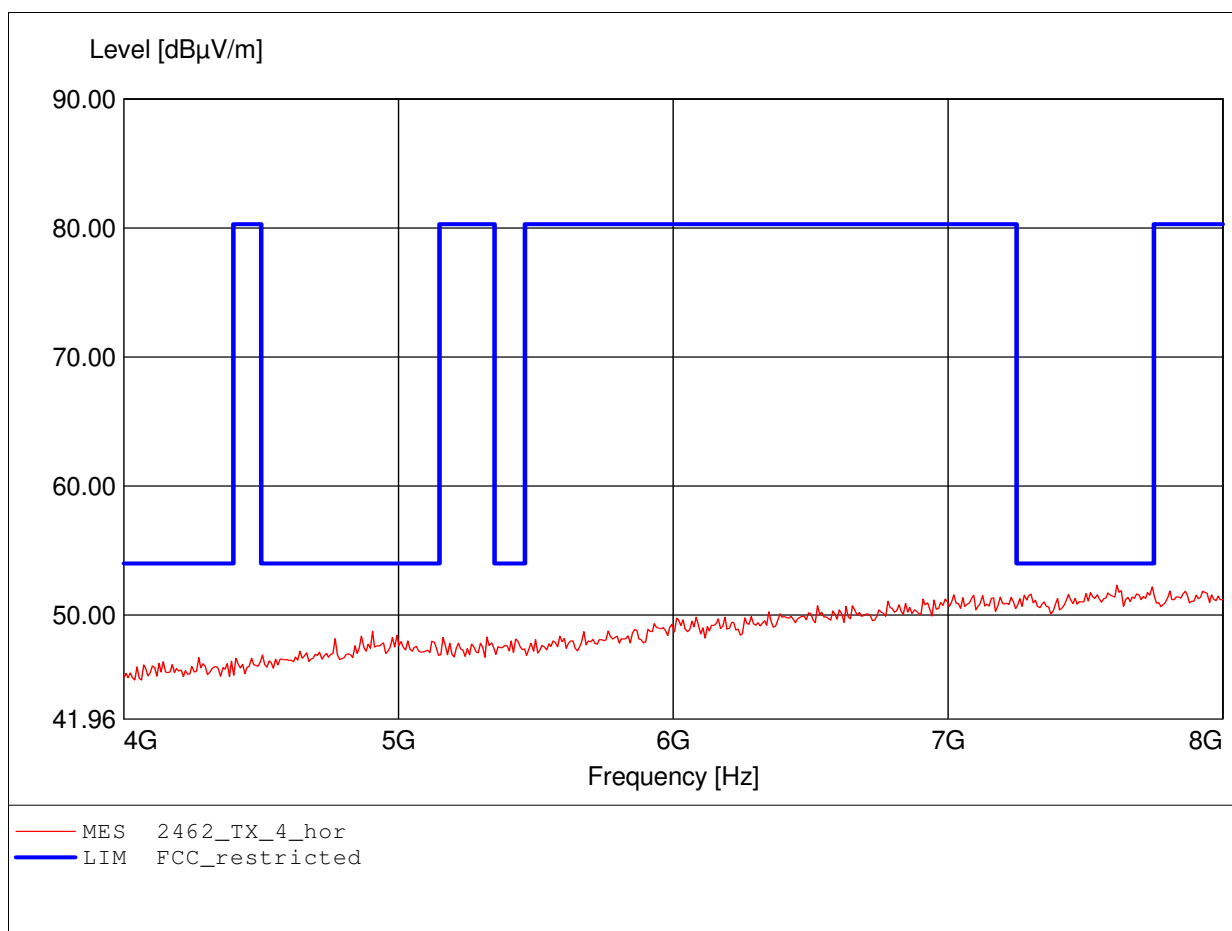
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.735GHz, Emax: 52.27dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 11 / OFDM / 6Mbit/s / Powerlevel 16dBm / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2462
Comment 1: Dist.: 3m, Ant.: HL 025, ampl.+HP.
Comment 2: Freq: 7.615GHz, Emax: 52.32dBµV/m, RBW: 1MHz

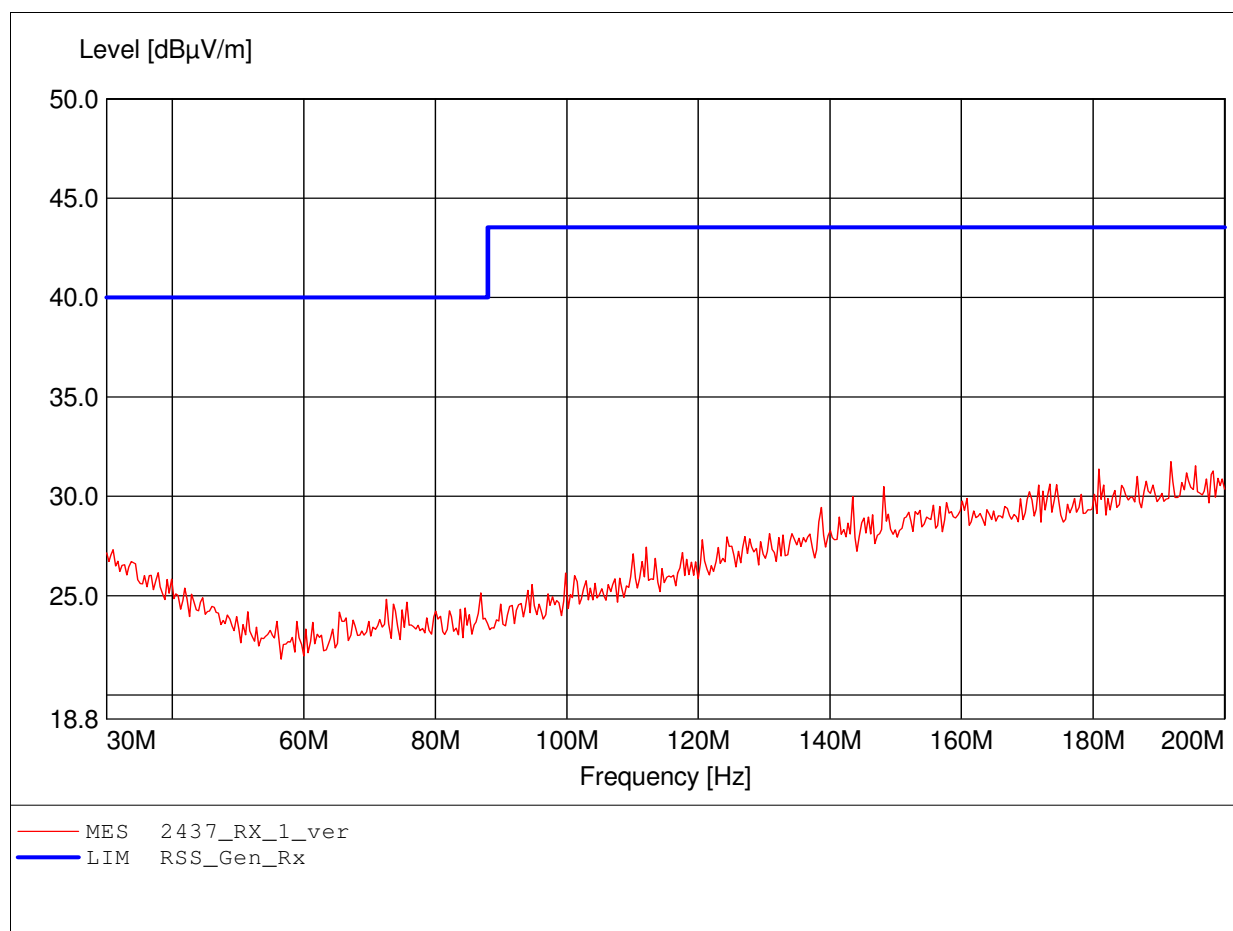


ANNEX B Receiver radiated spurious emissions

Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

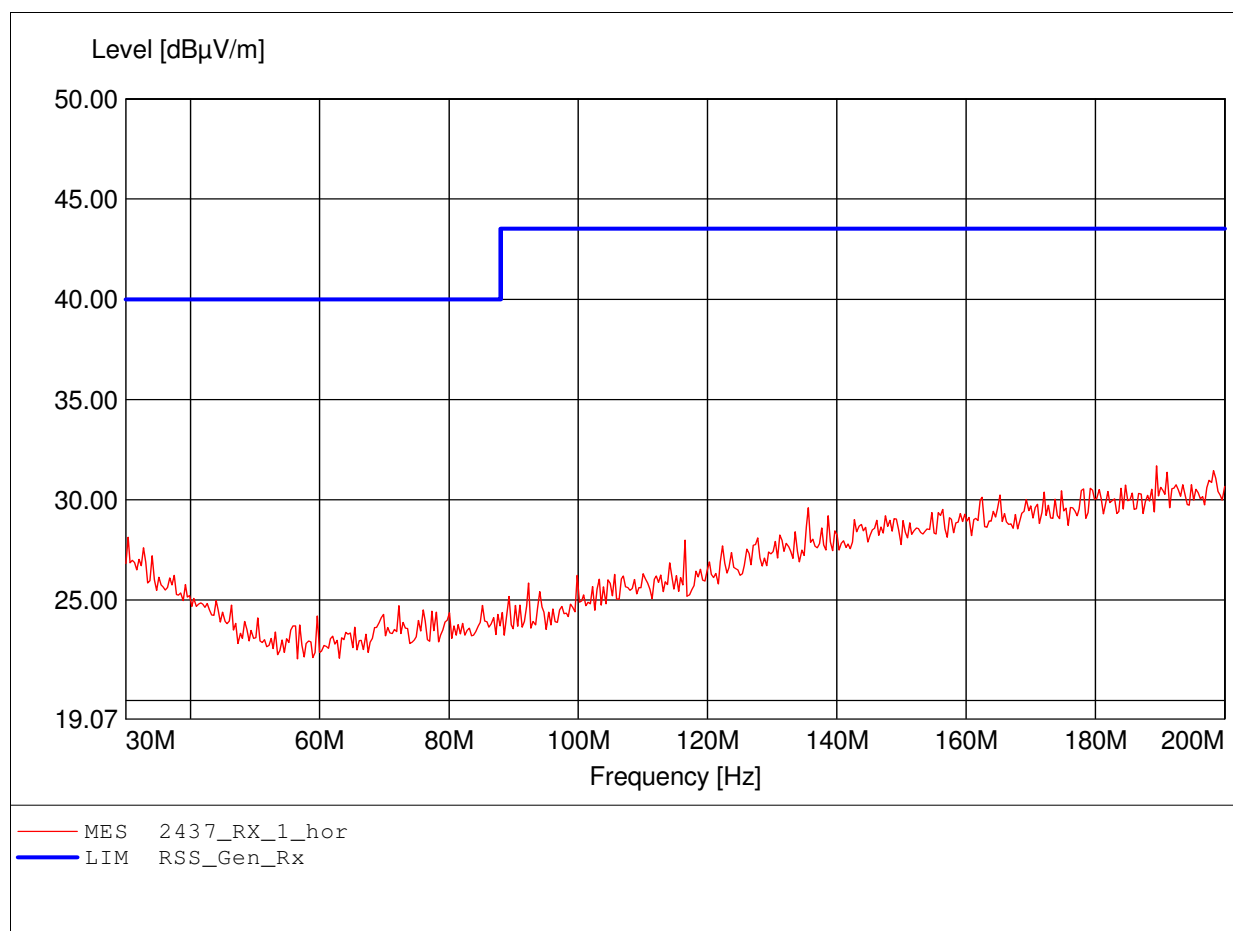
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq:191.824MHz Emax:31.75dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

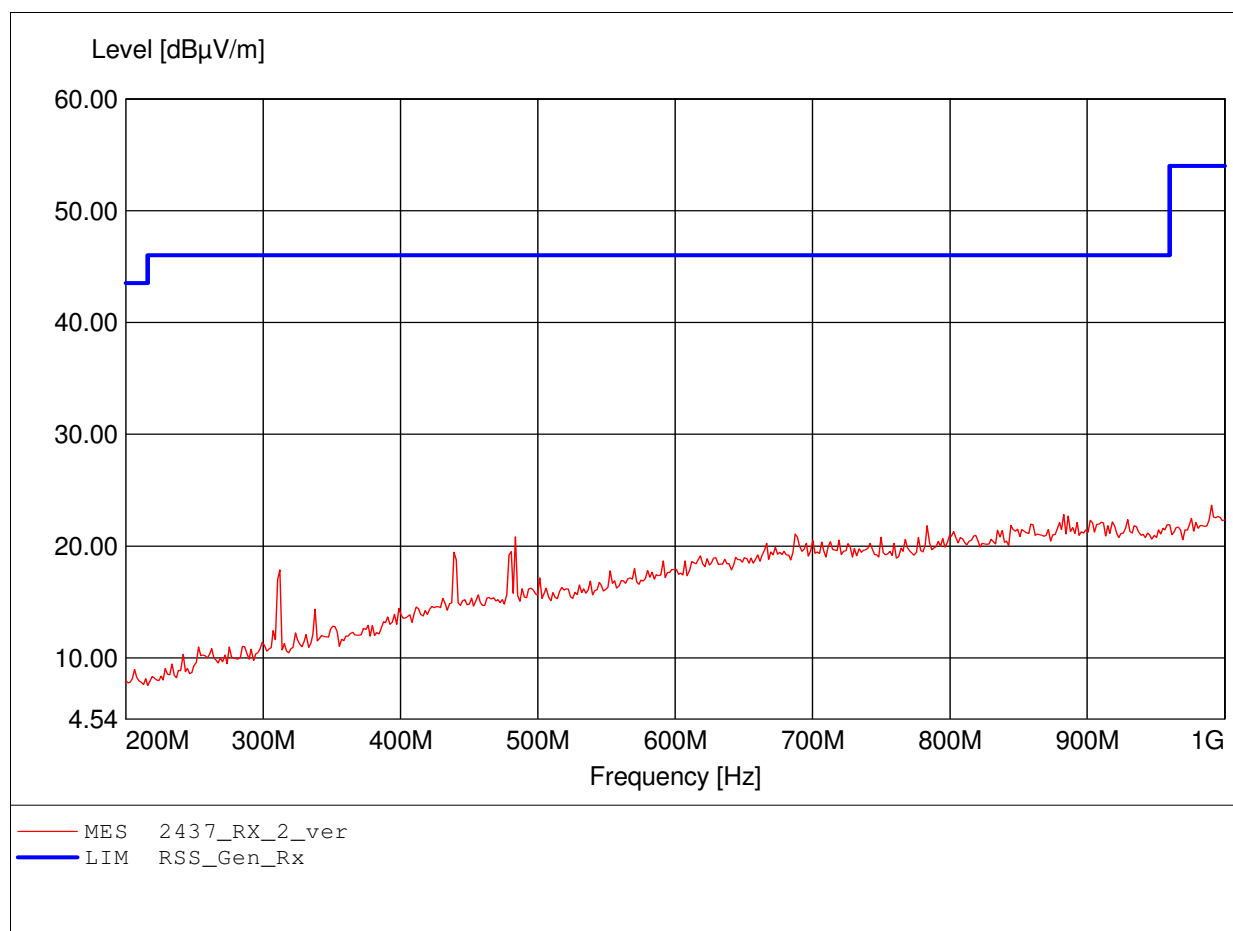
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq:189.439MHz Emax:31.69dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

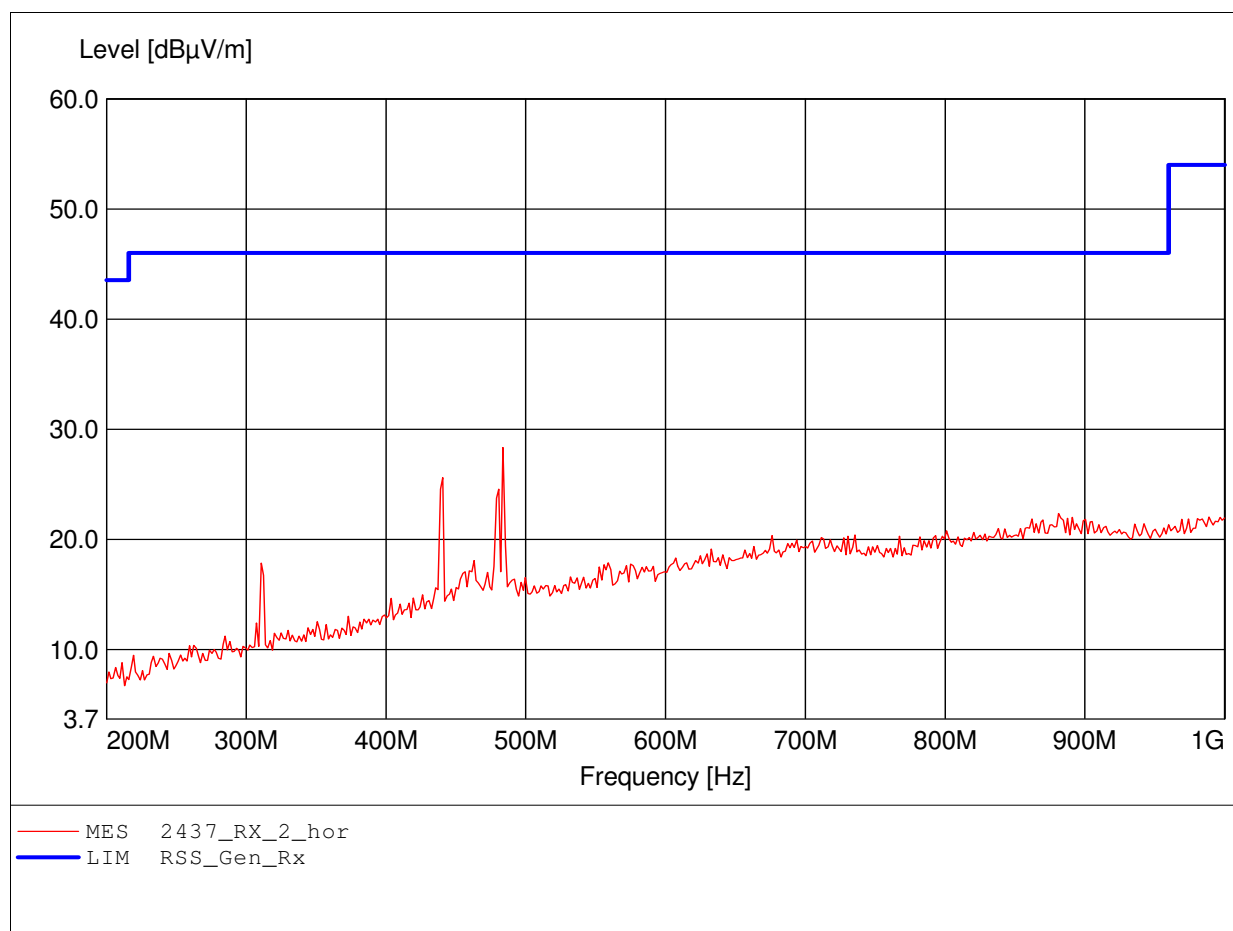
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Comment 2: Freq:990.381MHz Emax:23.66dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

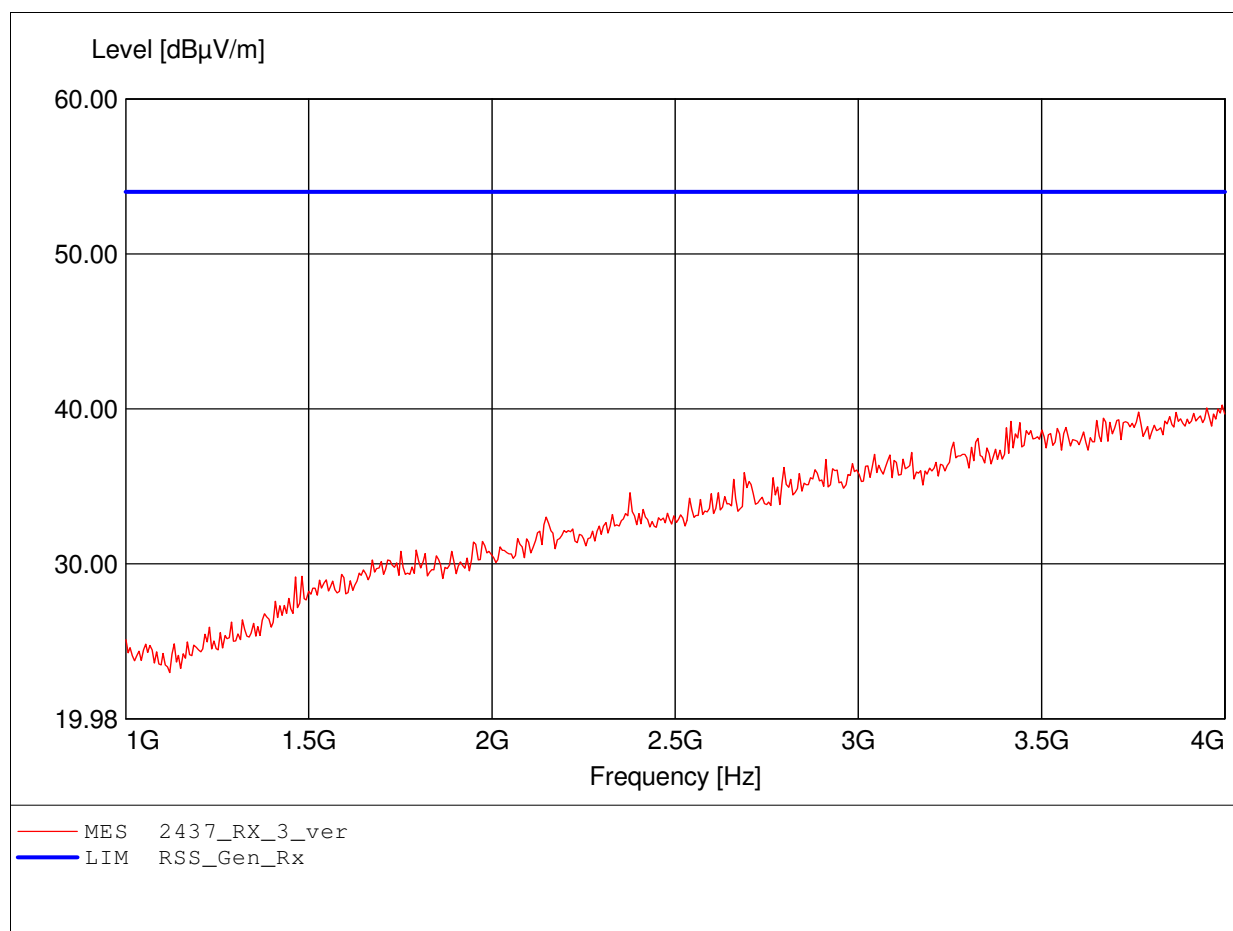
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Comment 2: Freq:483.768MHz Emax:28.33dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

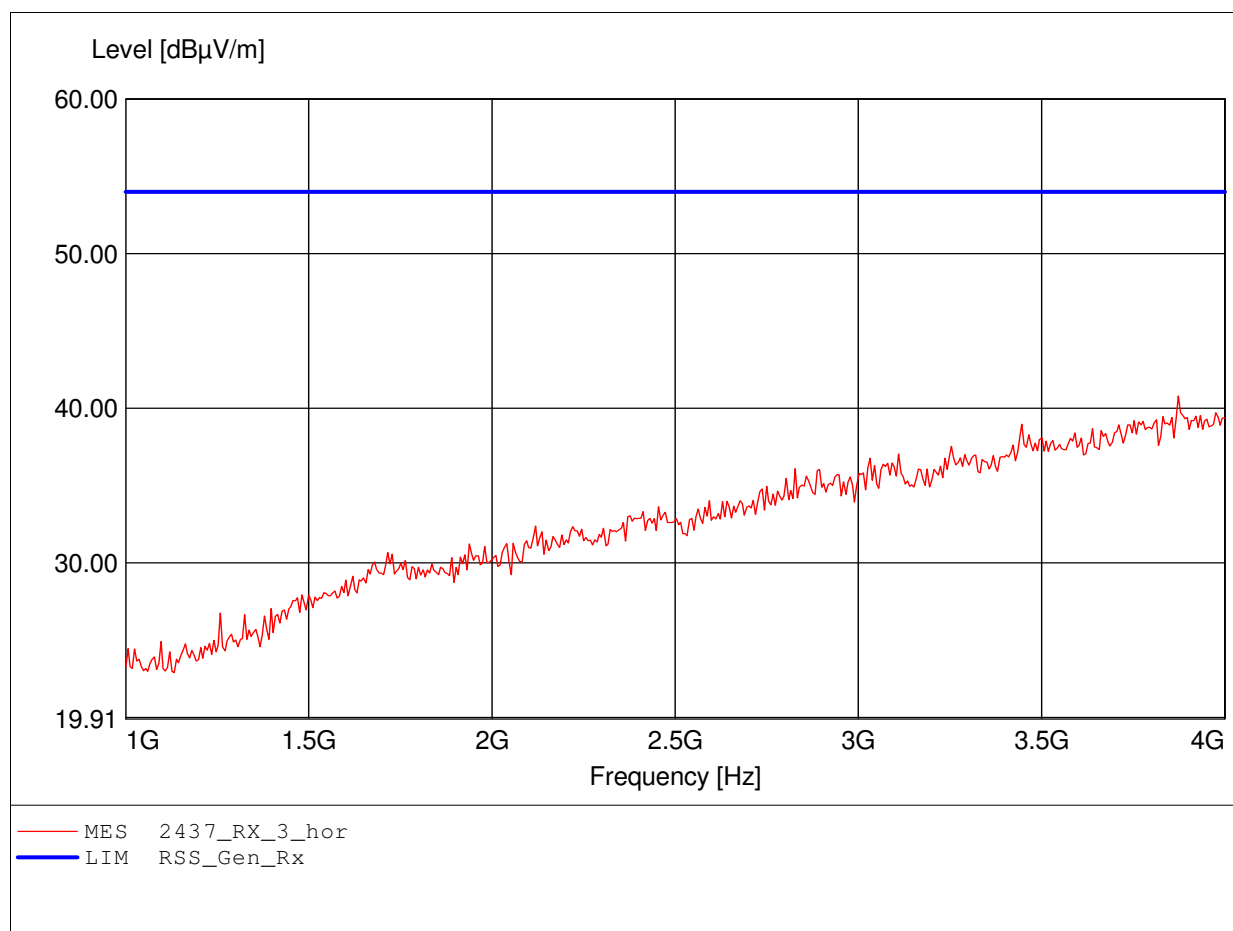
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:3.994GHz Emax:40.24dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

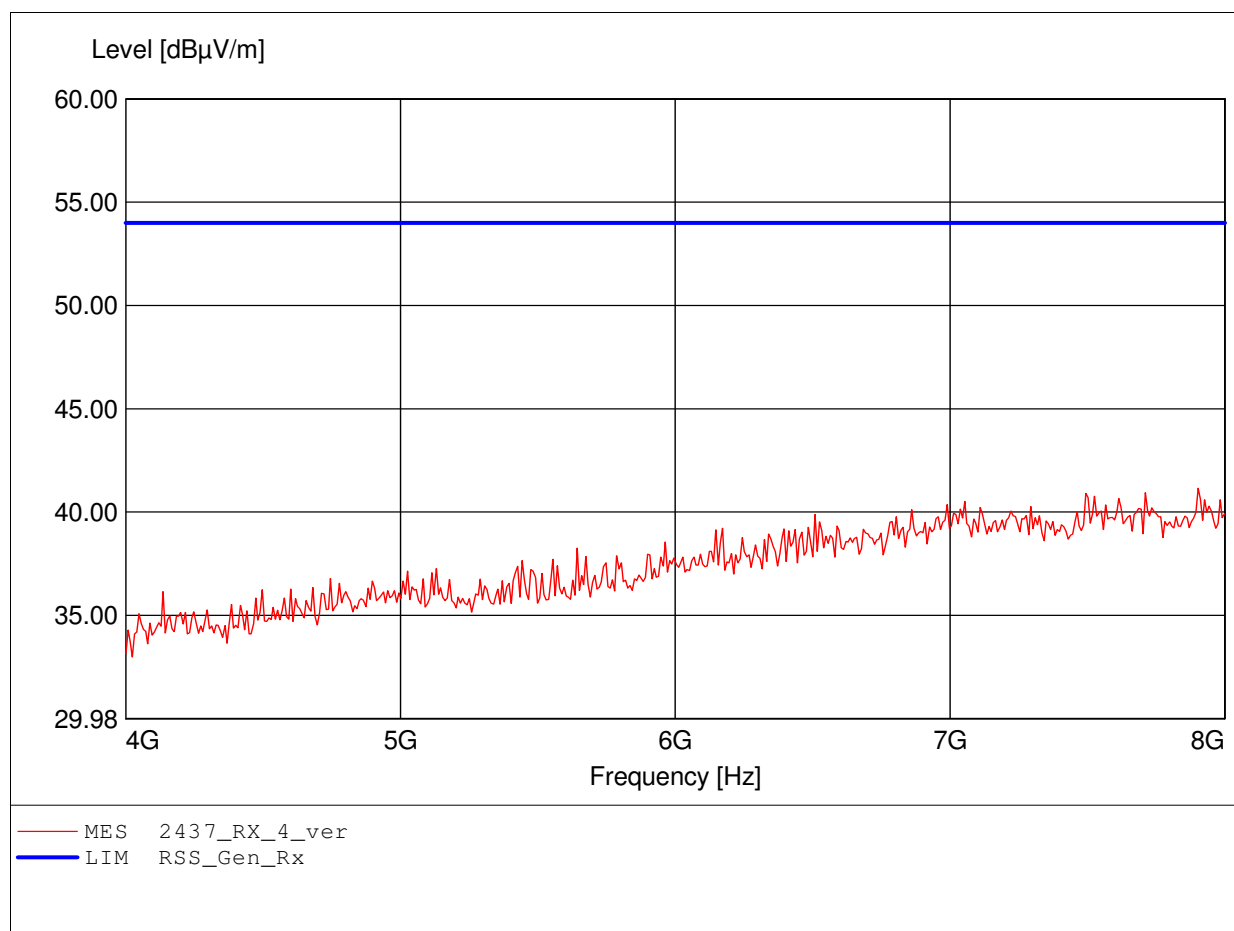
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:3.874GHz Emax:40.79dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

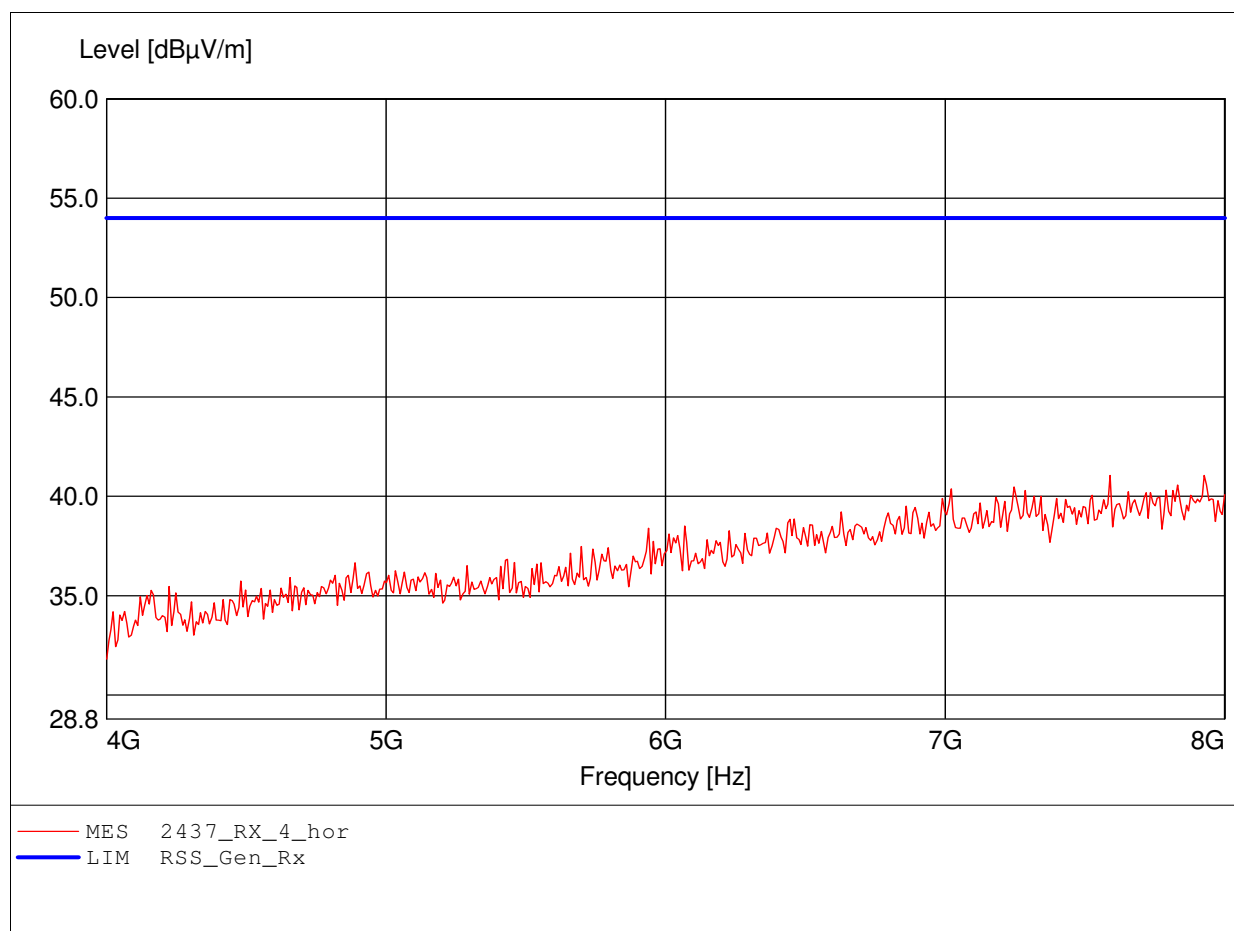
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:7.904GHz Emax:41.14dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

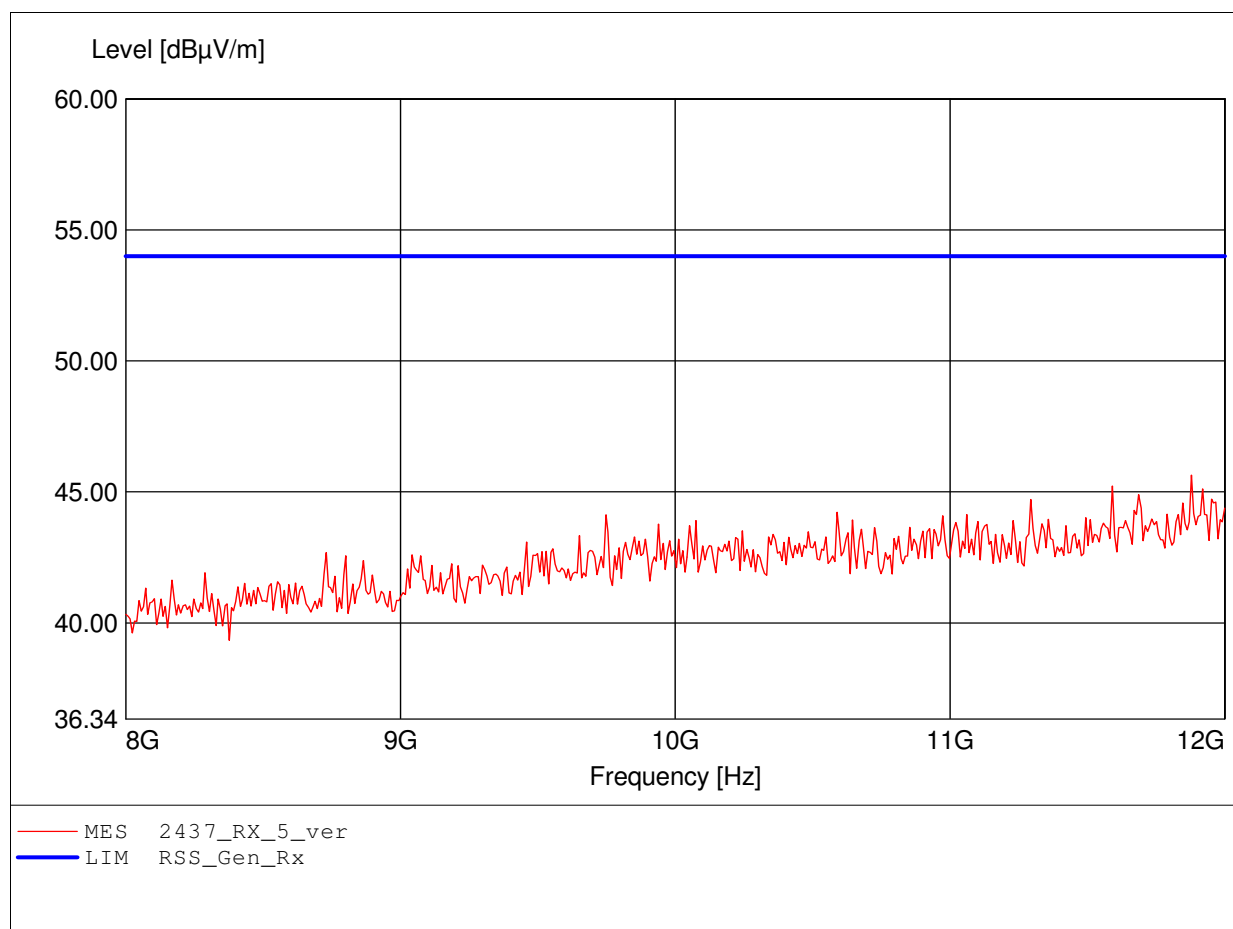
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:7.928GHz Emax:41.06dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

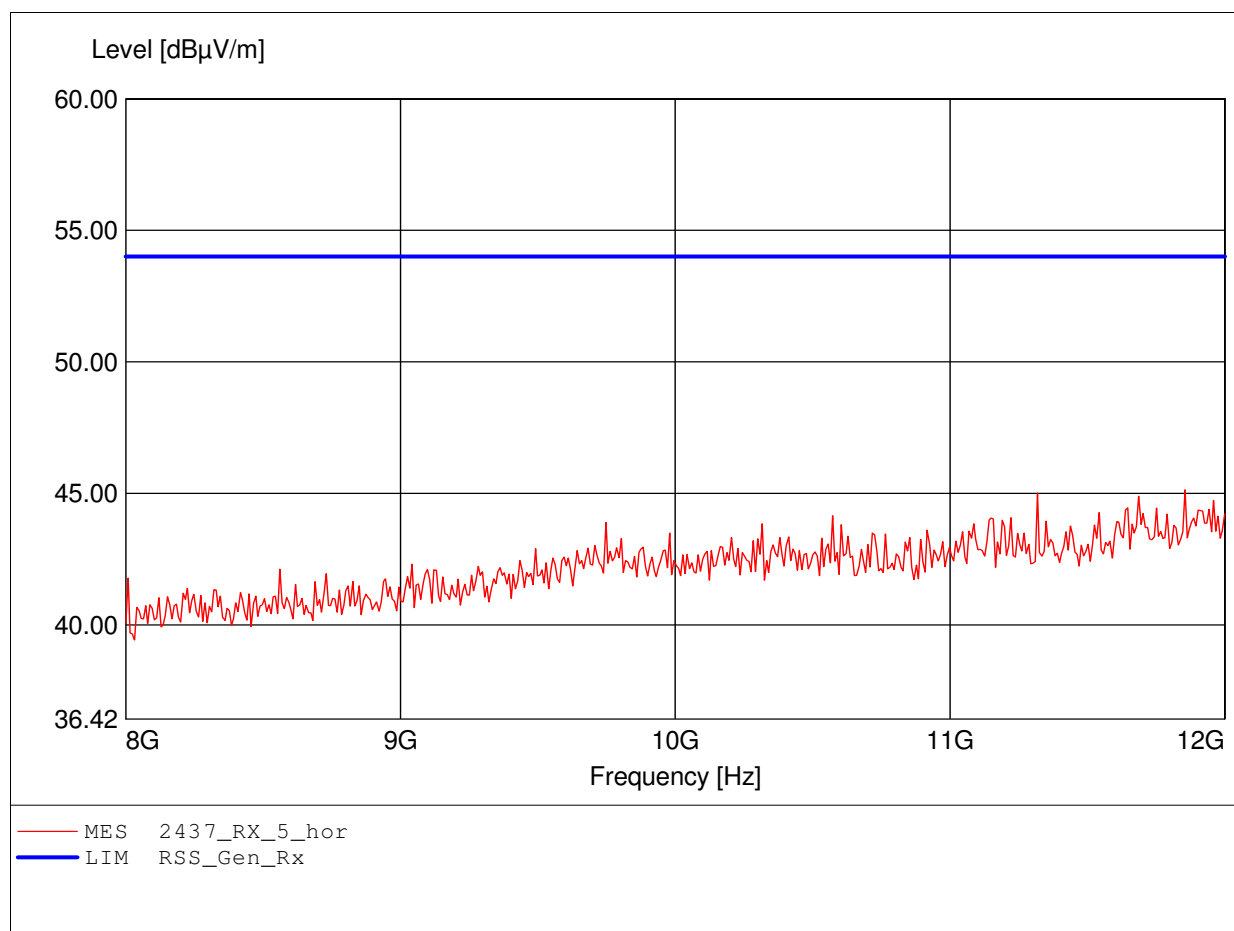
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:11.880GHz Emax:45.64dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

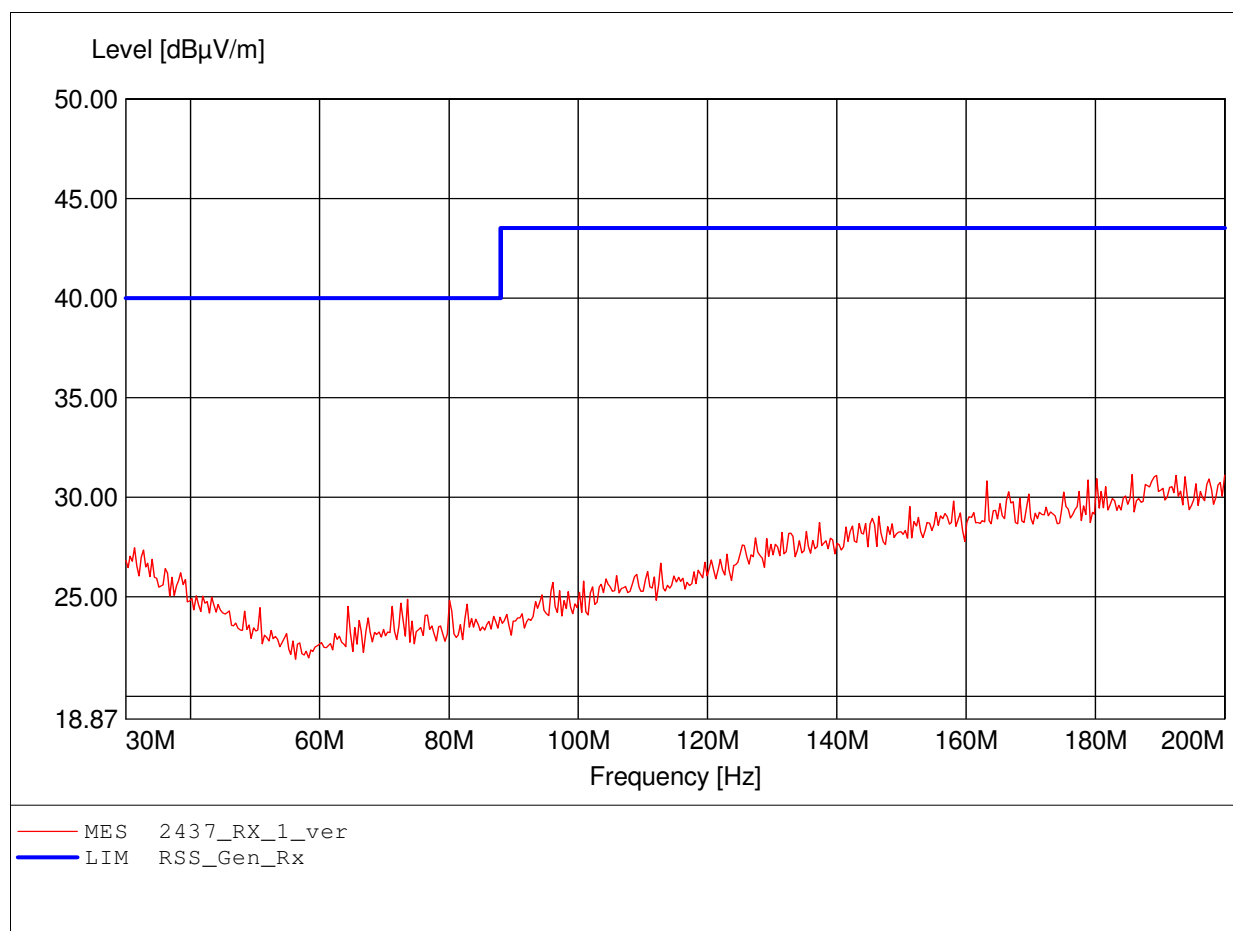
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #2 Ceramic Ant
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:11.856GHz Emax:45.13dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

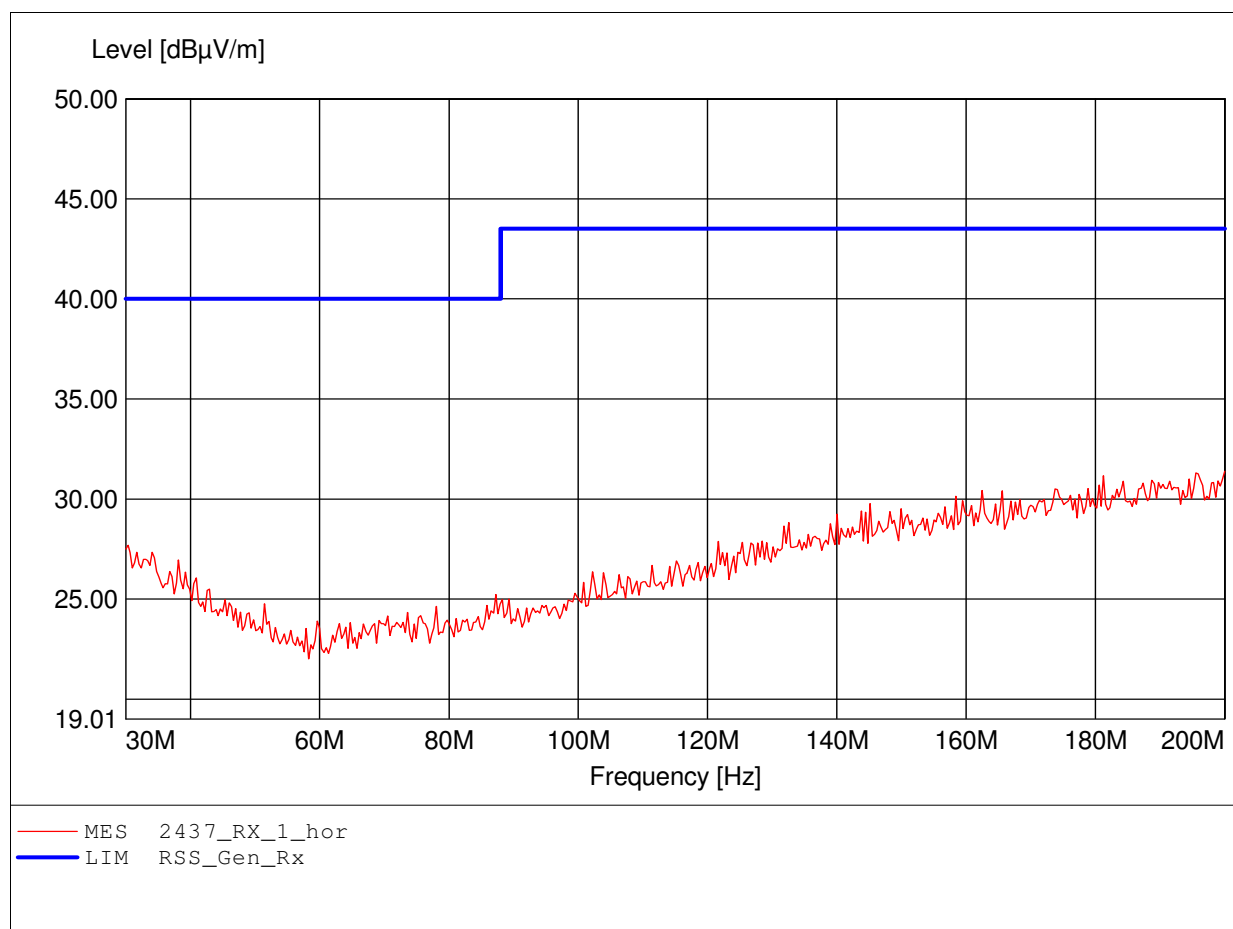
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq:185.691MHz Emax:31.13dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

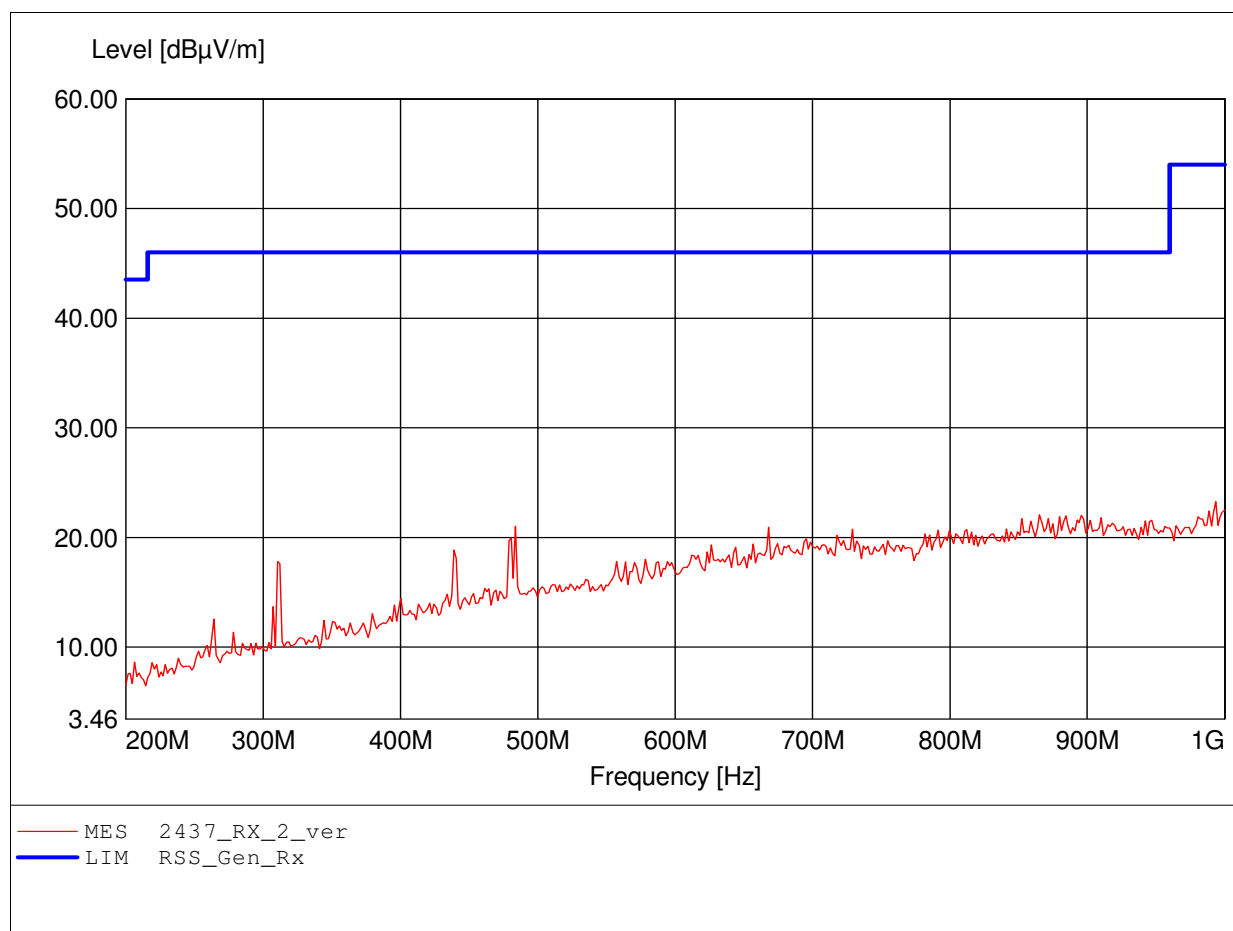
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq:200.000MHz Emax:31.38dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

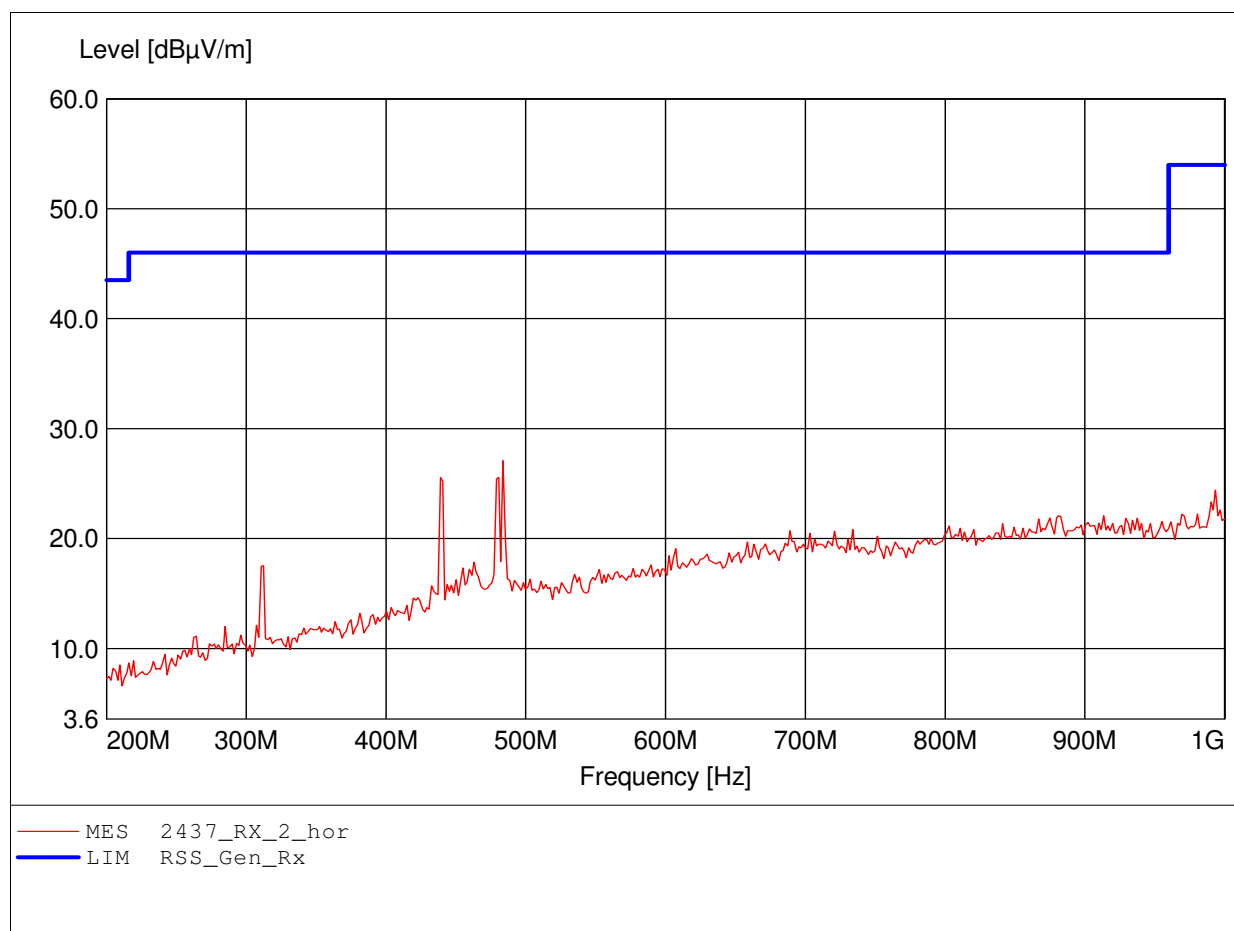
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Comment 2: Freq:993.587MHz Emax:23.27dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

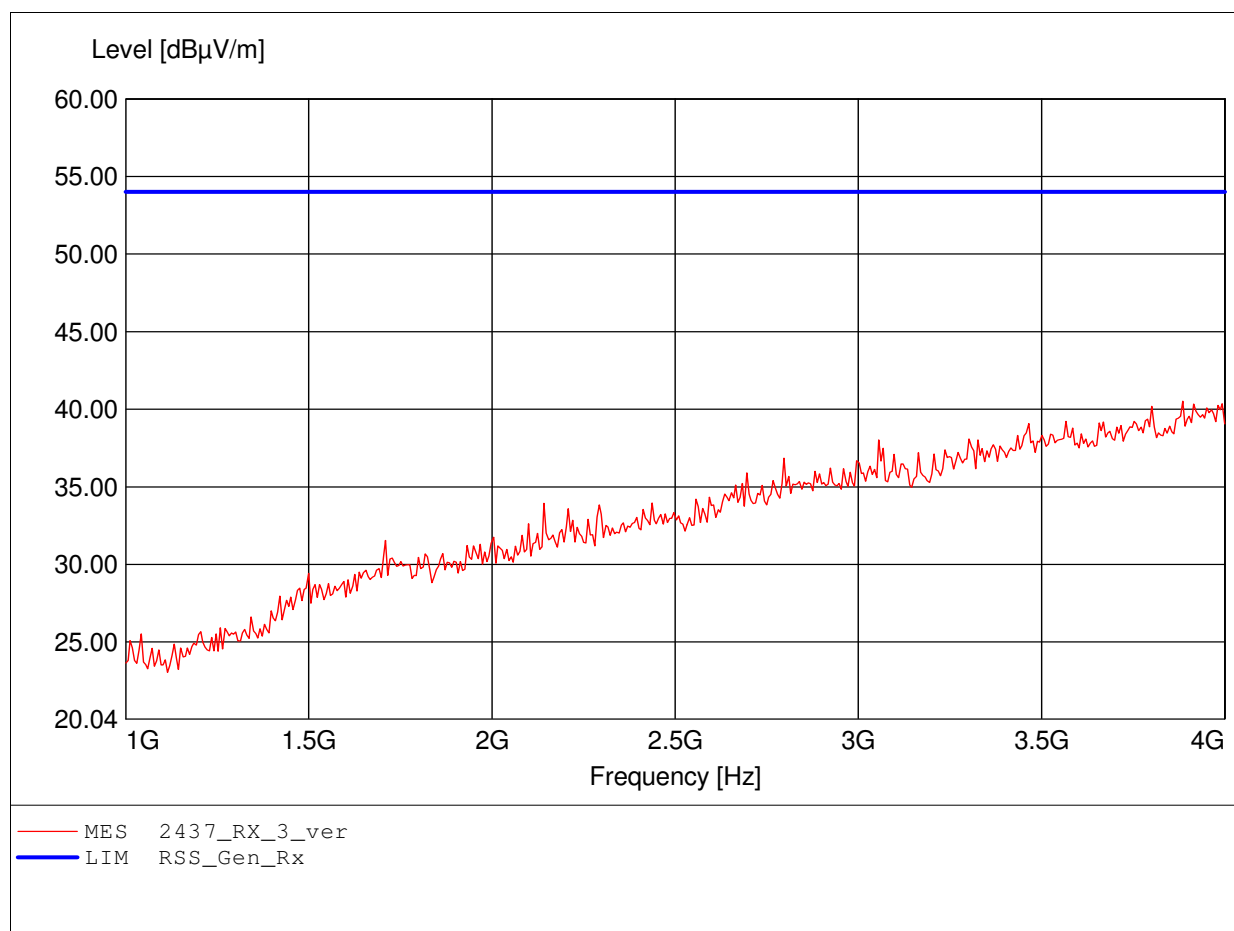
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Comment 2: Freq:483.768MHz Emax:27.10dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

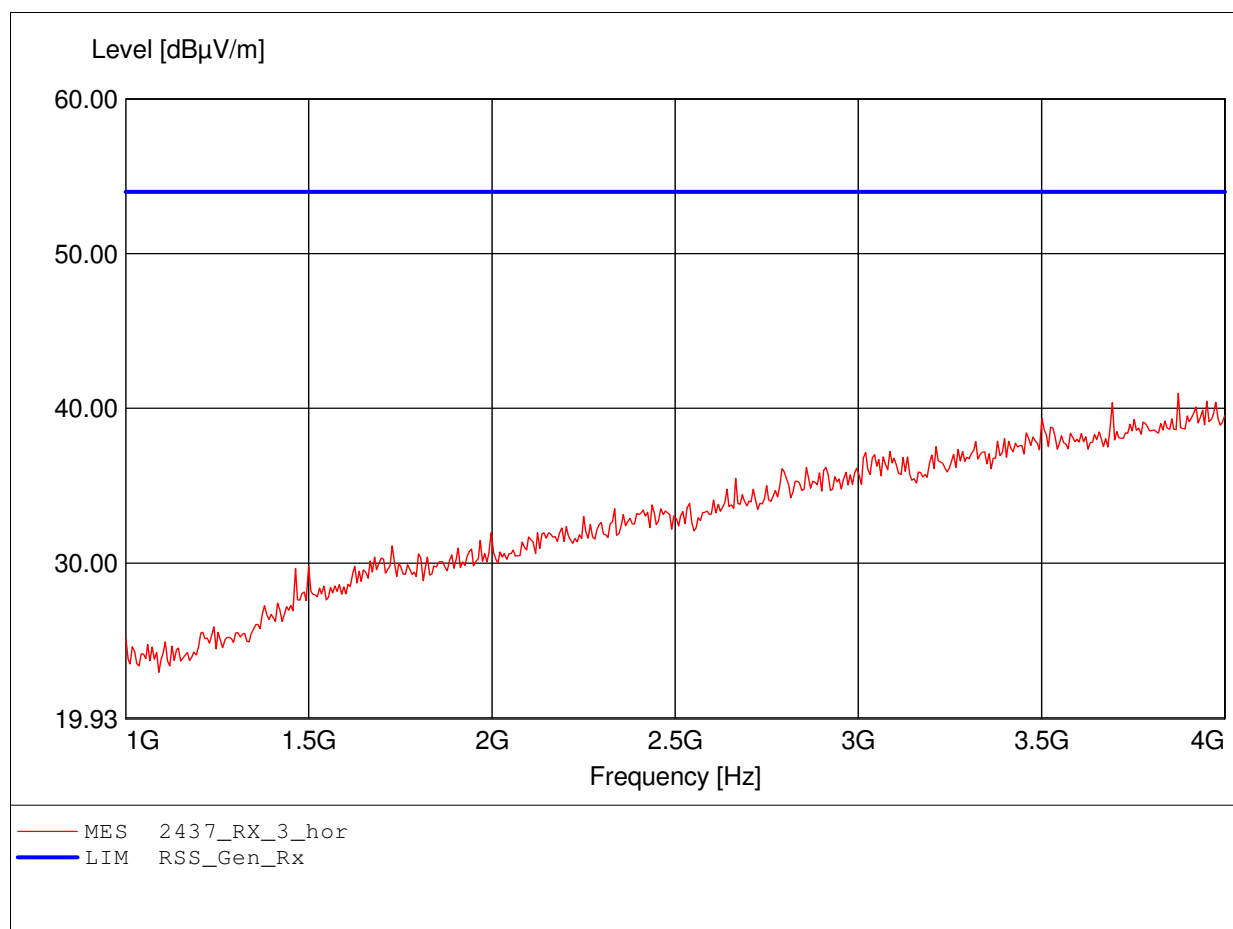
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:3.886GHz Emax:40.51dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

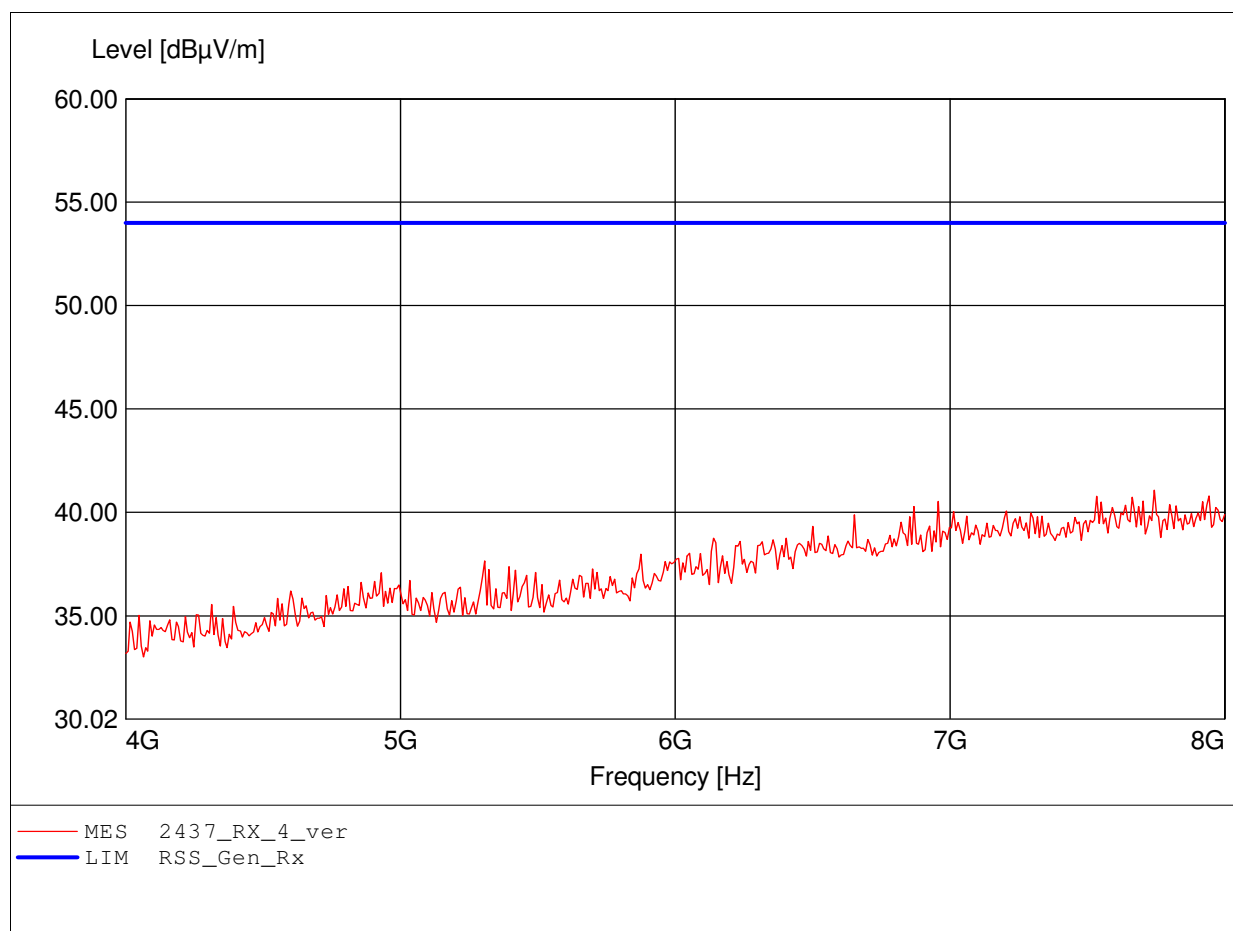
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:3.874GHz Emax:40.98dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

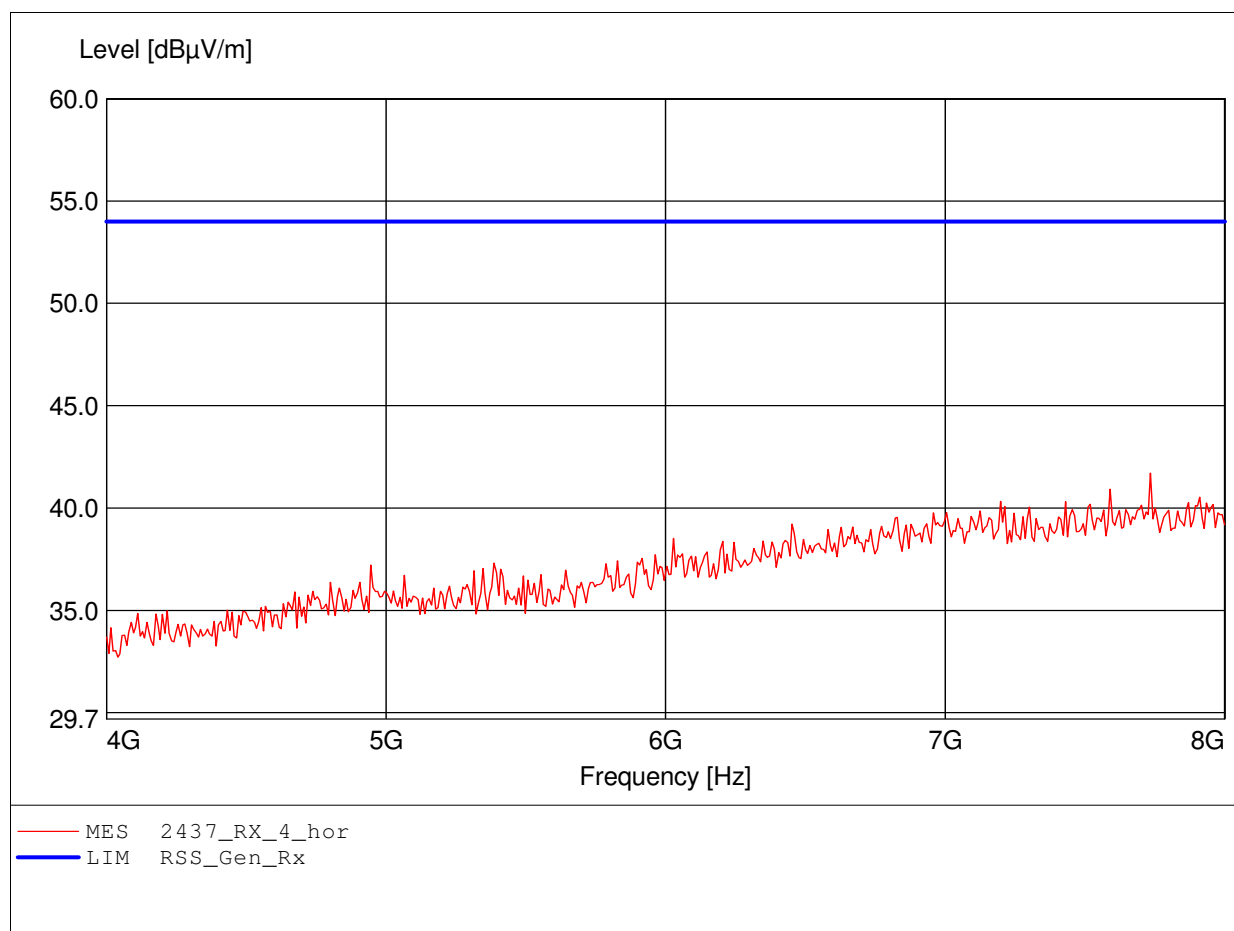
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:7.743GHz Emax:41.09dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

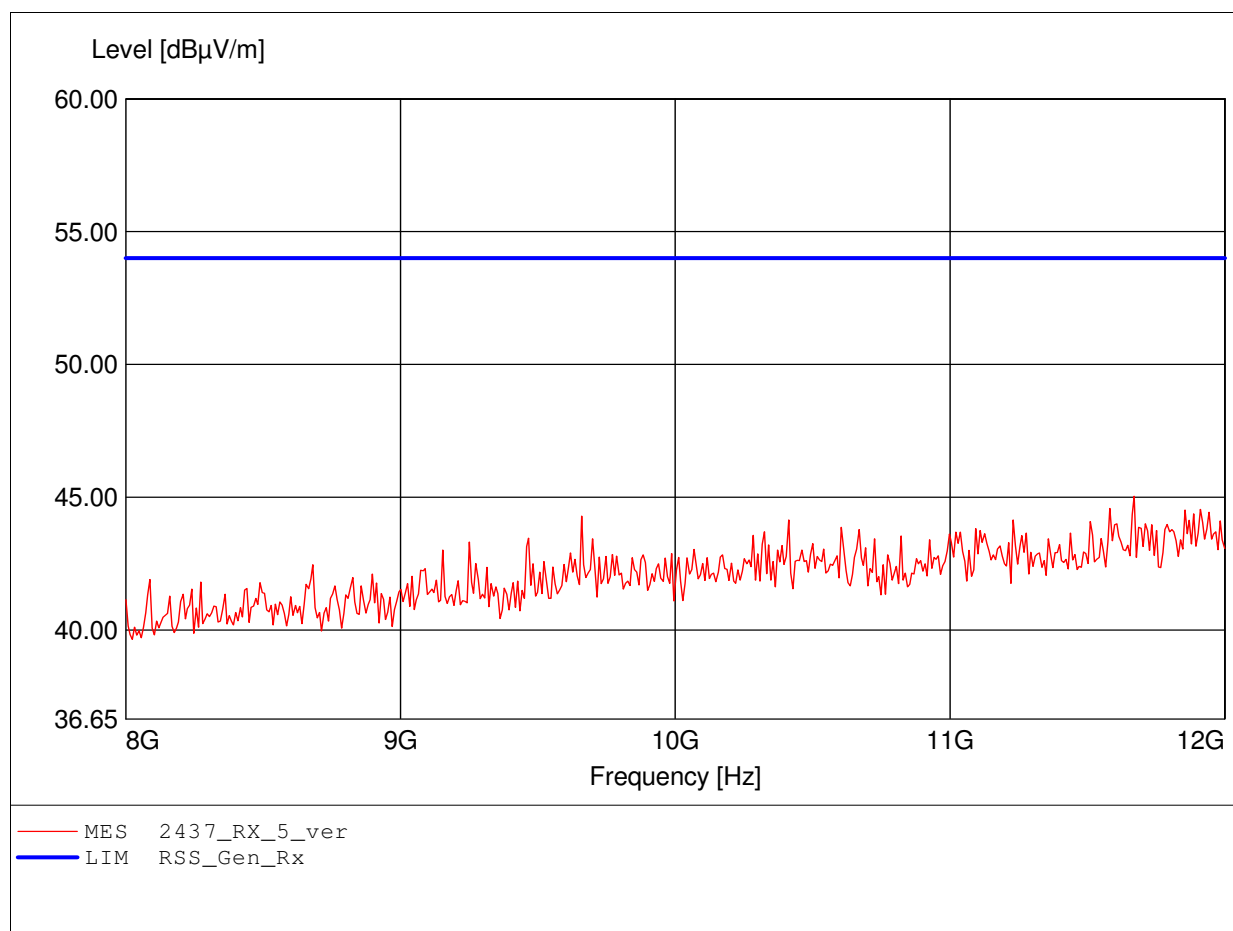
Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:7.735GHz Emax:41.71dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:11.671GHz Emax:45.03dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

Approval Holder: lesswire AG / GOM-1109-1387
EUT / Model: WLAN- Bluetooth module / WiBear SF1 STA #1 Ant ext - ver
Setup: CH 6 / RX - mode / y-axis
Test Site / Operator: Eurofins Product Service GmbH / Mr. Pudell
Test Condition: Tnom: 24°C / Vnom.: 3.3V DC
Test Specification: Freq. / CH: 2437
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:11.679GHz Emax:44.25dBµV/m RBW: 1 MHz

