



FCC Test Report
FCC Part 15.247 for FHSS systems/
CANADA RSS-210

FOR:

VX7 Handheld Computer
VX6 Wearable Computer

125 Technology Parkway
Norcross, GA 30092
U.S.A

FCC ID: KDZLXE4830P

TEST REPORT #: EMC_LXEIN_005_07002_15.247BT_VX6_VX7
DATE: 2007-11-29



Certificate # 2135.01



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(BQTF)



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CETECOM Inc. is a Delaware Corporation with Corporation number: 2113686

Board of Directors: Dr. Harald Ansoerge, Dr. Klaus Matkey, Hans Peter May



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**1 Assessment**

The following is in compliance with the applicable criteria specified in FCC rules Part 15.247 of the Code of Federal Regulations and in compliance with the applicable criteria specified in Industry Canada rules RSS210.

Company	Description	Model #
LXE Inc.	Vehicle Mount Computer	VX7, VX6

Technical responsibility for area of testing:

Juan Martinez

2007-11-29 EMC & Radio (EMC Project Engineer)

Date

Section

Name

Signature

The test results of this test report relate exclusively to the test item specified in Identification of the Equipment under Test. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.

This report is prepared by:

Peter Mu

2007-11-29 EMC & Radio (EMC Project Engineer)

Date

Section

Name

Signature



2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	EMC
Address:	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Responsible Test Lab Manager:	Lothar Schmidt
Responsible Project Leader:	Peter Mu
Date of test:	2007-9-18 to 2007-10-15

2.2 Identification of the Client

APPLICANT	
Applicant (Company Name)	LXE, Inc
Street Address	125 Technology Parkway
City/Zip Code	Norcross, Georgia, US 30092
Country	USA
Contact Person	Cyril Binnom Jr.
Telephone	(770) 447-4224 x3240
Fax	(770) 447-6928
e-mail	Binnom_c@lxe.com

2.3 Identification of the Manufacturer

MANUFACTURER	
Manufacturer	LXE, Inc
Street Address	125 Technology Parkway
City/Zip Code	Norcross, Georgia, US 30092
Country	U.S.A

3 Equipment under Test (EUT)

3.1 Specification of the Equipment under Test

Marketing Name:	VX7, VX6
Description:	Vehicle Mount Computer
Model No:	VX7, VX6
Antenna Type:	0dBi
Type(s) of Modulation:	CCK, OFDM
Frequency Band(s) of Operation:	2412 - 2462MHz
Numbers of Channels:	11
Equipment Classification: (CLASS)	<input type="checkbox"/> FIXED <input checked="" type="checkbox"/> VEHICULAR <input type="checkbox"/> PORTABLE <input type="checkbox"/> MODULE
Equipment Classification: (POWER(AC MAINS))	<input type="checkbox"/> 230VAC (<i>GROUND</i>) <input type="checkbox"/> 230VAC (<i>NO GROUND</i>) <input type="checkbox"/> 12VDC <input checked="" type="checkbox"/> 24VDC

3.2 Identification of the Equipment Under Test (EUT)

EUT #	TYPE	MANF.	MODEL	SERIAL #
1	EUT	LXE Inc	VX7	VX707375954
2	EUT	LXE Inc	VX6	VX607332071

3.3 Identification of Accessory equipment

AE #	TYPE	MANF.	MODEL	SERIAL #
1	VX7 AC/DC Adaptor	LXE, INC	PW132	N.A
2	VX7 External keyboard	LXE, INC	159010-00001/A	N/A
3	VX6 AC/DC Adaptor	LXE, INC	PW132	N.A

3.4 Test mode

All tests are done with both BT and WLAN module transmitting at the same time.



4 Subject Of Investigation

This test report is to support the class II permissive change to add the stated hosts to the FCC approved WLAN module under FCC ID KDZLXE4830P. All testing was performed on the product referred to in Section 3 as EUT. This test report contains full radiated testing as per FCC15.247 on the EUT with the WLAN module. For conducted measurement results please refer to the conducted test report in the original filing of the module.

Transmitter Radiated Spurious Emission testing were done on both the VX7 and the VX6 model with both WLAN and BT module transmitting at the same time. The results show that the VX6 model with the internal integrated keyboard has a worse case emission signature. Furthermore, the WLAN modules themselves used in the two models have identical components. Therefore all conducted measurements, band edge, and EIRP are measured with the VX6 model only. Test results apply to both models.

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT as specified by requirements listed in FCC rules Part 15.247 of Title 47 of the Code of Federal Regulations and Industry Canada rules RSS210. The maximization of portable equipment is conducted in accordance with ANSI C63.4.

5 Measurements (Radiated)

5.1 MAXIMUM PEAK OUTPUT POWER

EIRP: 802.11b

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2412	2437	2462
T _{nom} (23)°C	V _{nom} VDC	21.77	21.96	21.69
Measurement uncertainty		±0.5dBm		

EIRP: 802.11g

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2412	2437	2462
T _{nom} (23)°C	V _{nom} VDC	20.44	21.3	21.59
Measurement uncertainty		±0.5dBm		

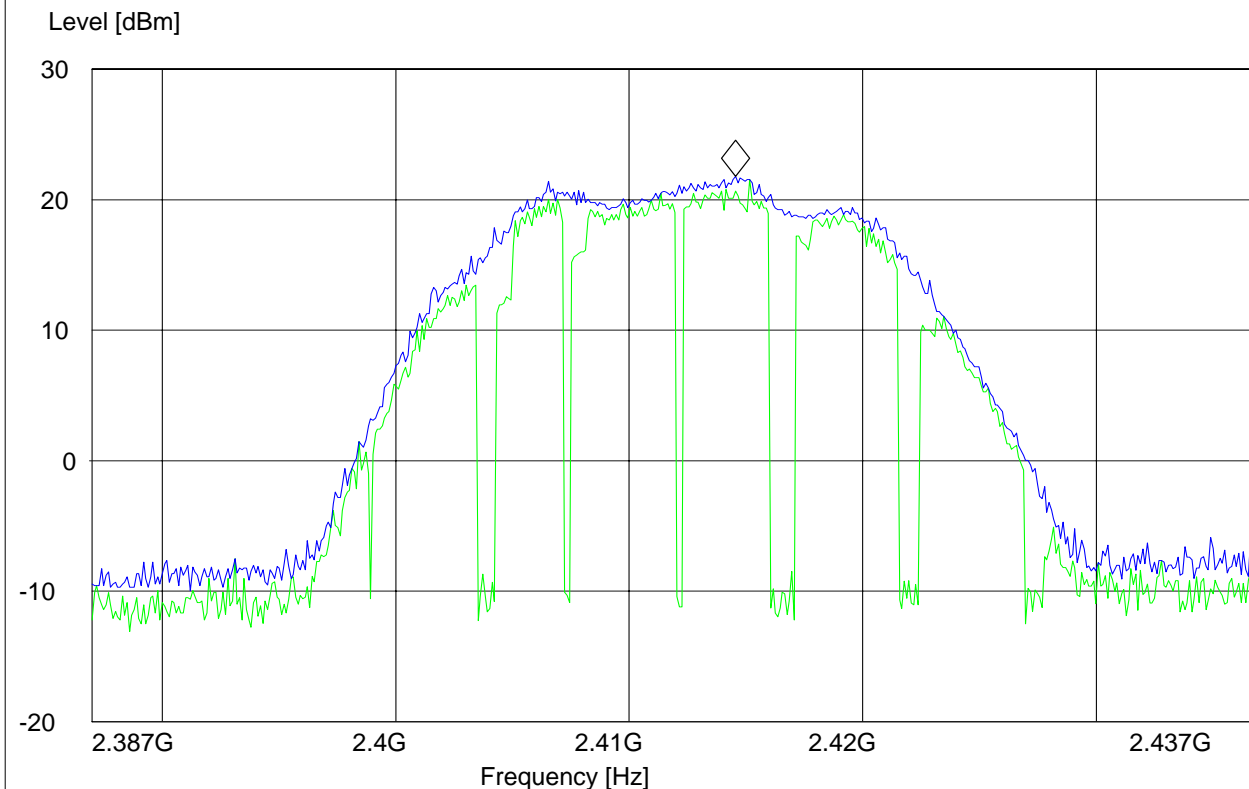
EIRP LOW CHANNEL-802.11b

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "EIRP RLAN CH1"

Short Description:		EIRP RLAN channel-2412 MHz			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.4 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM
		MaxPeak			

Marker: 2.41455511 GHz 21.77 dBm



**EIRP MIDDLE CHANNEL-802.11b**

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

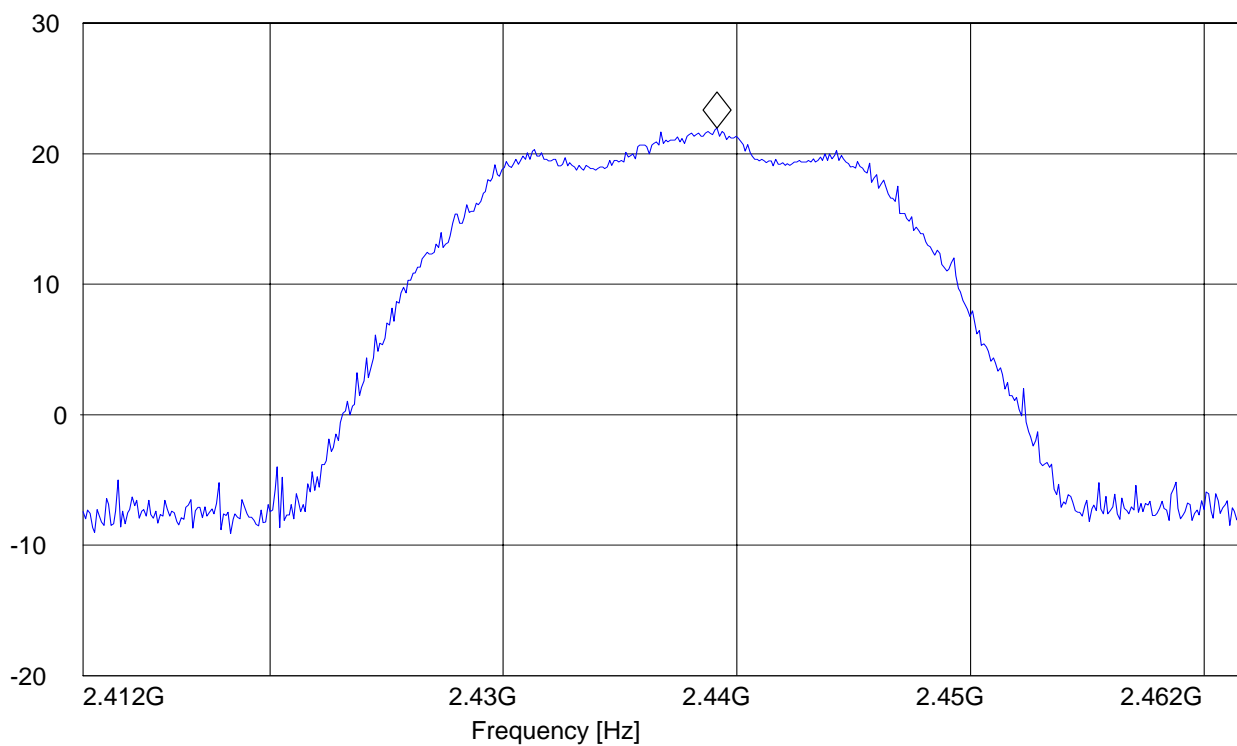
SWEEP TABLE: "EIRP RLAN CH6"

Short Description:		EIRP RLAN channel-2437 MHz			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.5 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM
		MaxPeak			

Marker: 2.439154309 GHz

21.96 dBm

Level [dBm]



**EIRP HIGH CHANNEL-802.11b**

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

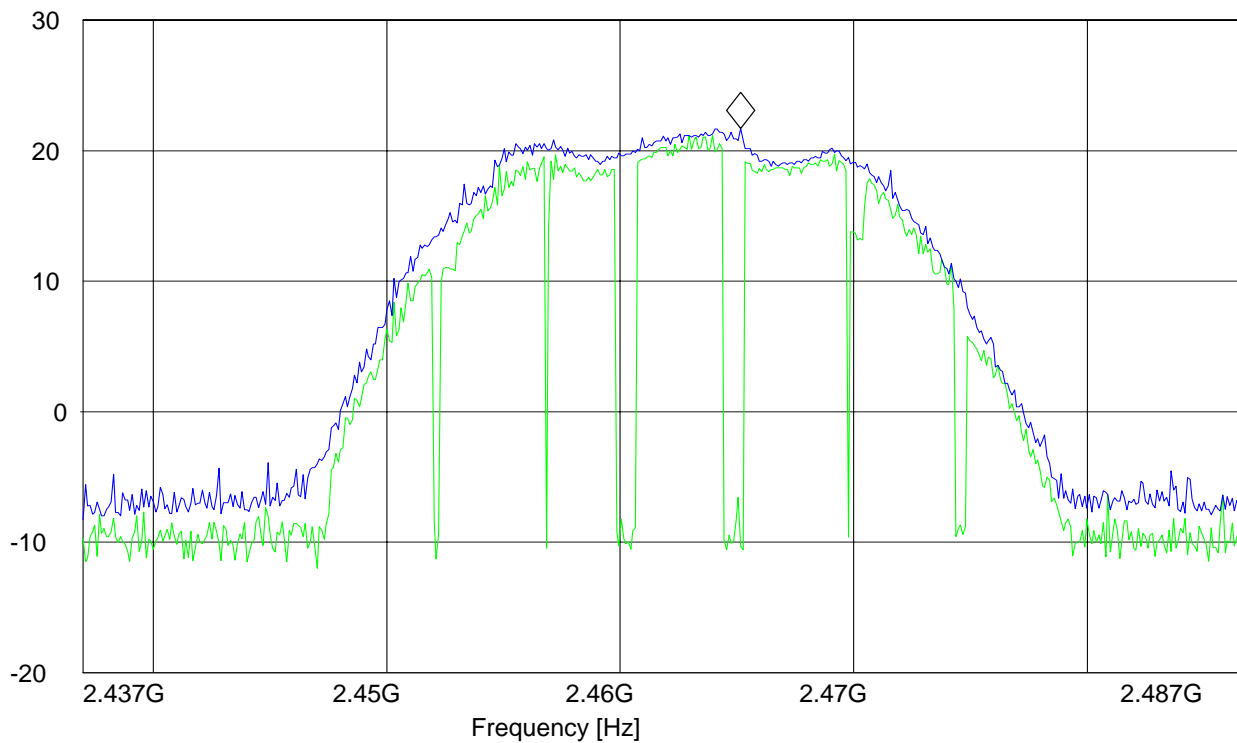
SWEEP TABLE: "EIRP RLAN CH11"

Short Description:		EIRP RLAN channel-2462 MHz			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.5 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM
		MaxPeak			

Marker: 2.465156313 GHz

21.69 dBm

Level [dBm]



EIRP LOW CHANNEL- 802.11g

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

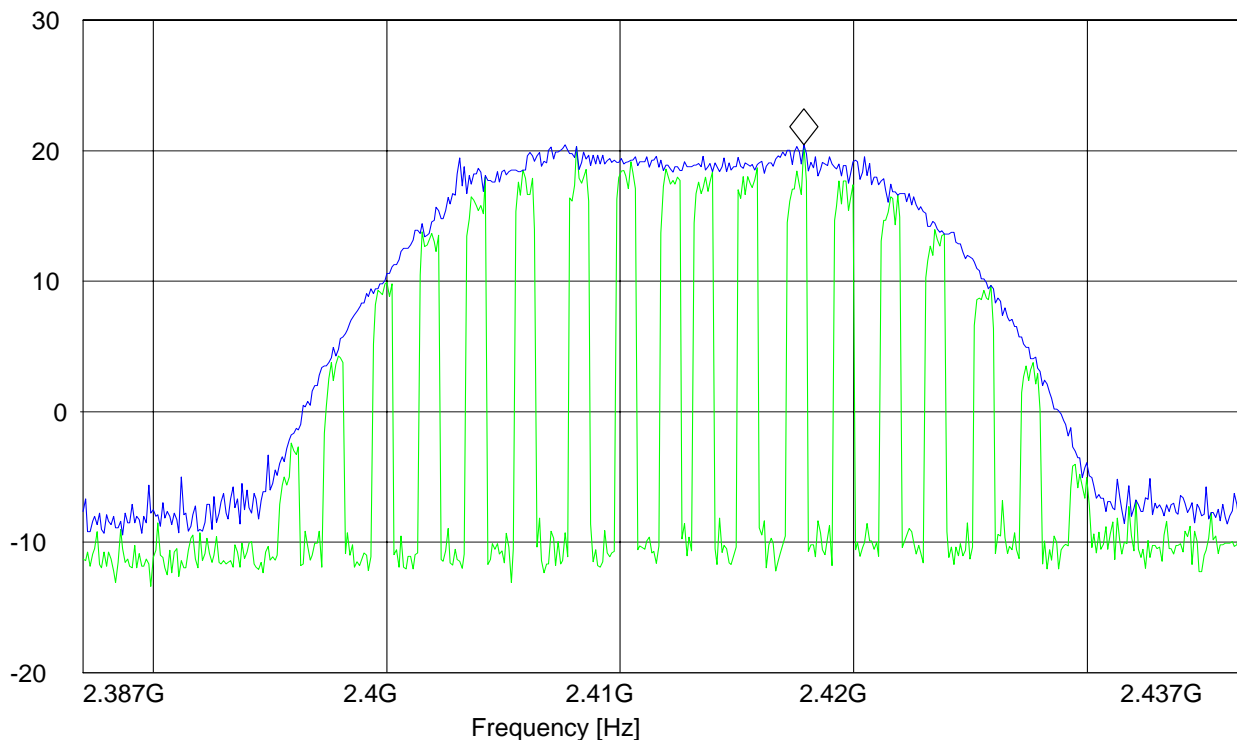
SWEEP TABLE: "EIRP RLAN CH1"

Short Description:		EIRP RLAN channel-2412 MHz			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.4 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM
		MaxPeak			

Marker: 2.417861723 GHz

20.44 dBm

Level [dBm]



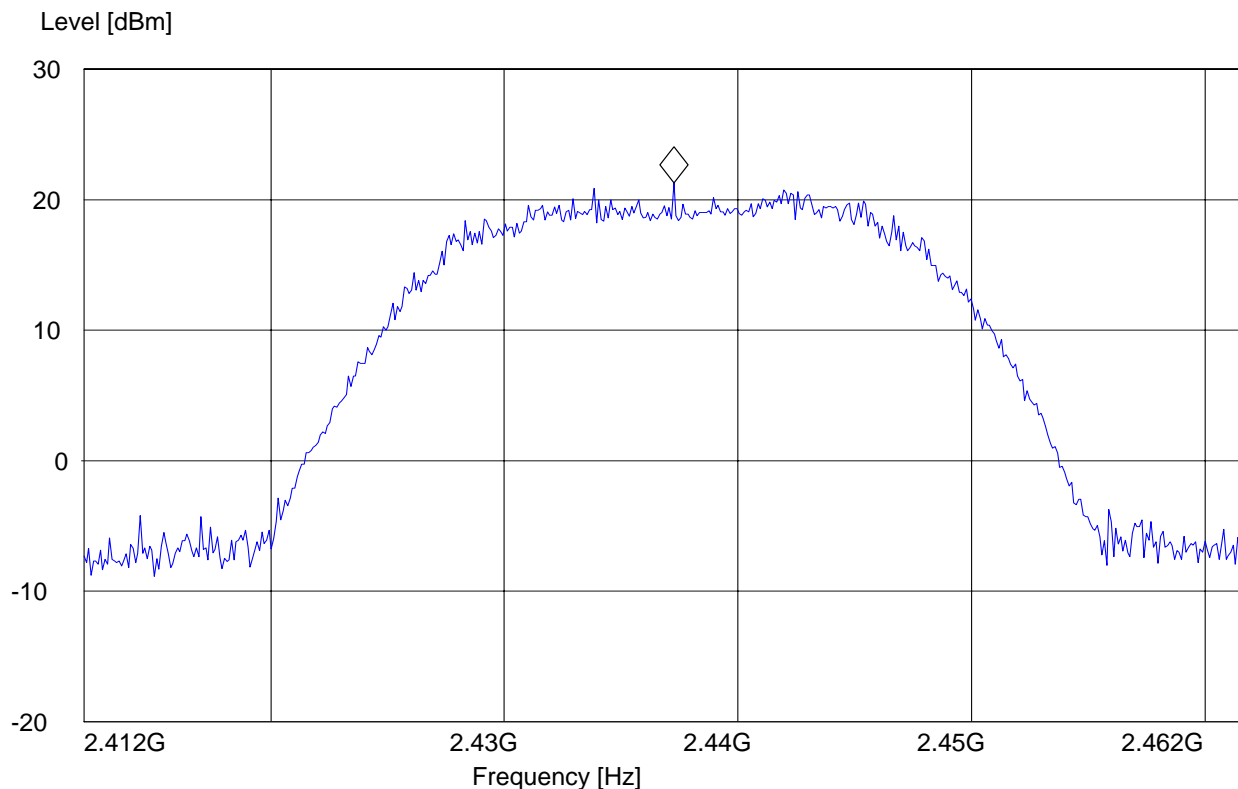
**EIRP MIDDLE CHANNEL- 802.11g**

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "EIRP RLAN CH6"

Short Description:		EIRP RLAN channel-2437 MHz			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.5 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM
		MaxPeak			

Marker: 2.437250501 GHz 21.3 dBm



EIRP HIGH CHANNEL- 802.11g

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

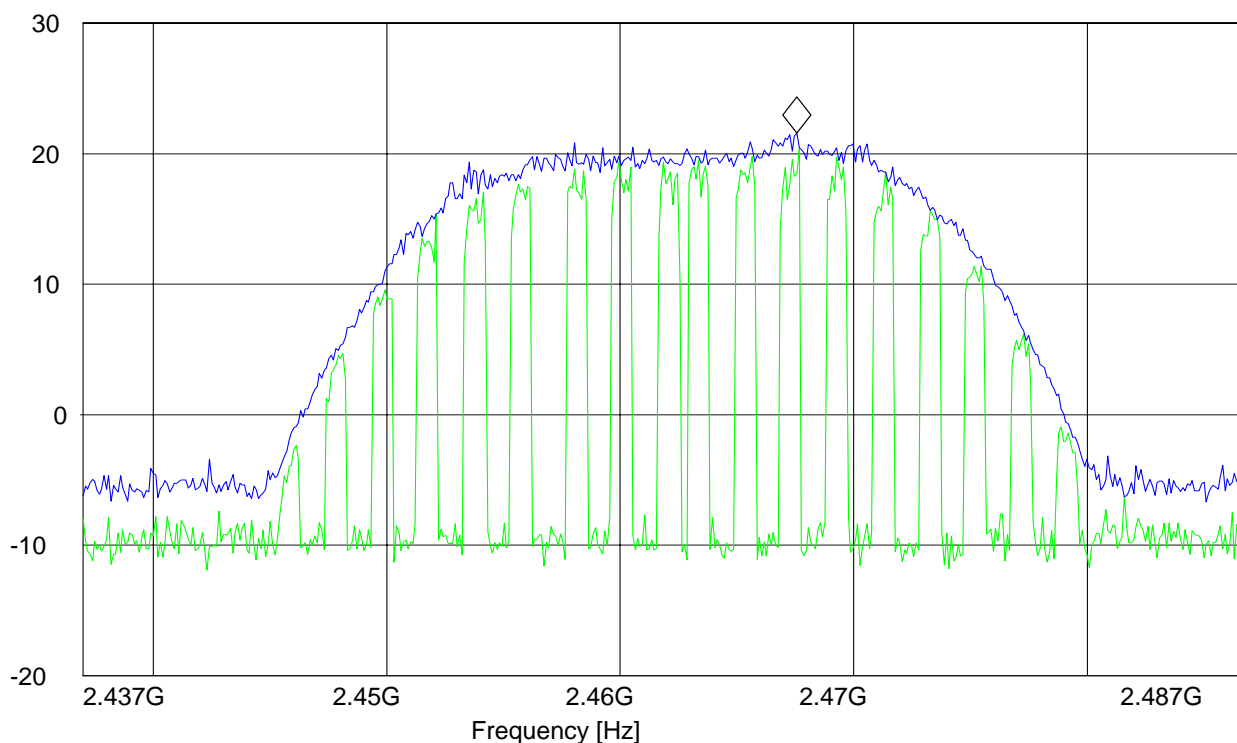
SWEEP TABLE: "EIRP RLAN CH11"

Short Description:		EIRP RLAN channel-2462 MHz			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
2.4 GHz	2.5 GHz	MaxPeak	Coupled	10 MHz	DUMMY-DBM
		MaxPeak			

Marker: 2.467561122 GHz

21.59 dBm

Level [dBm]



5.2 RESTRICTED BAND EDGE COMPLIANCE RADIATED §15.247/15.205

5.2.1 LIMITS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

*PEAK LIMIT= 74dBuV/m

*AVG. LIMIT= 54dBuV/m

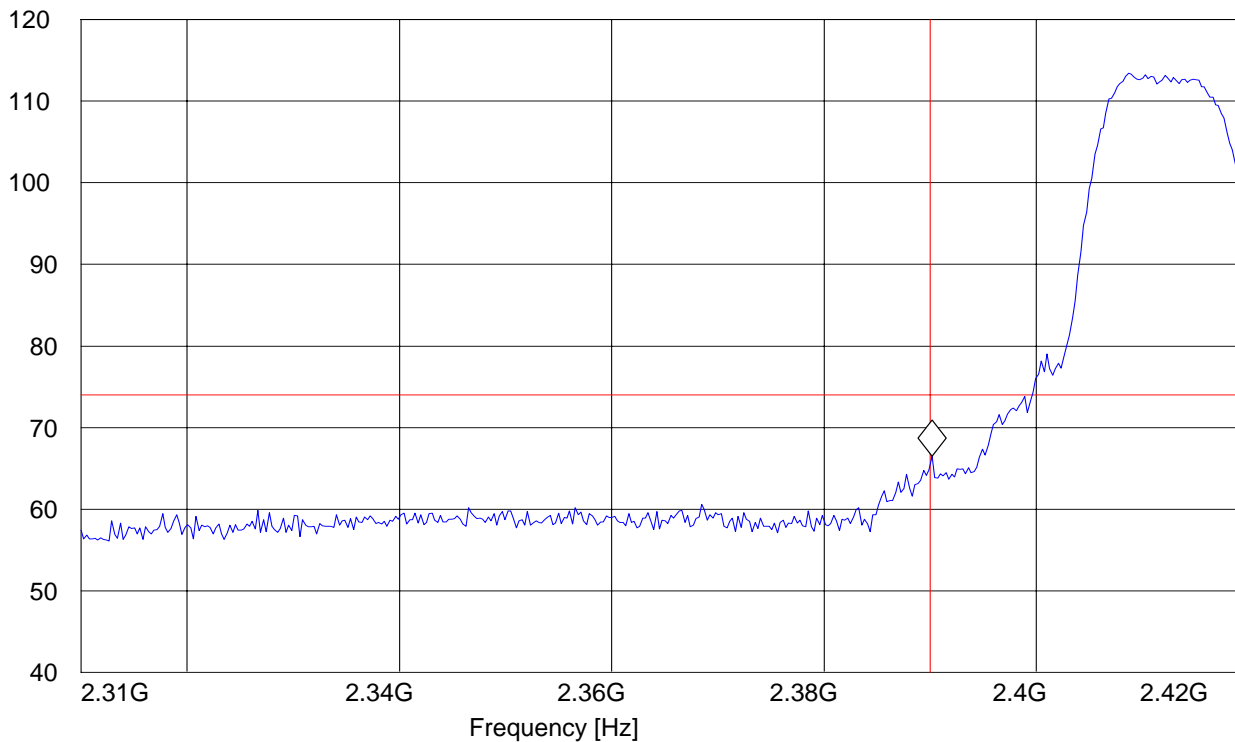
5.2.2 RESULTS: 802.11b**(2412MHz) LOWER BAND EDGE PEAK 802.11b**

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.390152305 GHz

66.5 dB μ V/mLevel [dB μ V/m]

(2412MHz) LOWER BAND EDGE AVERAGE -802.11b

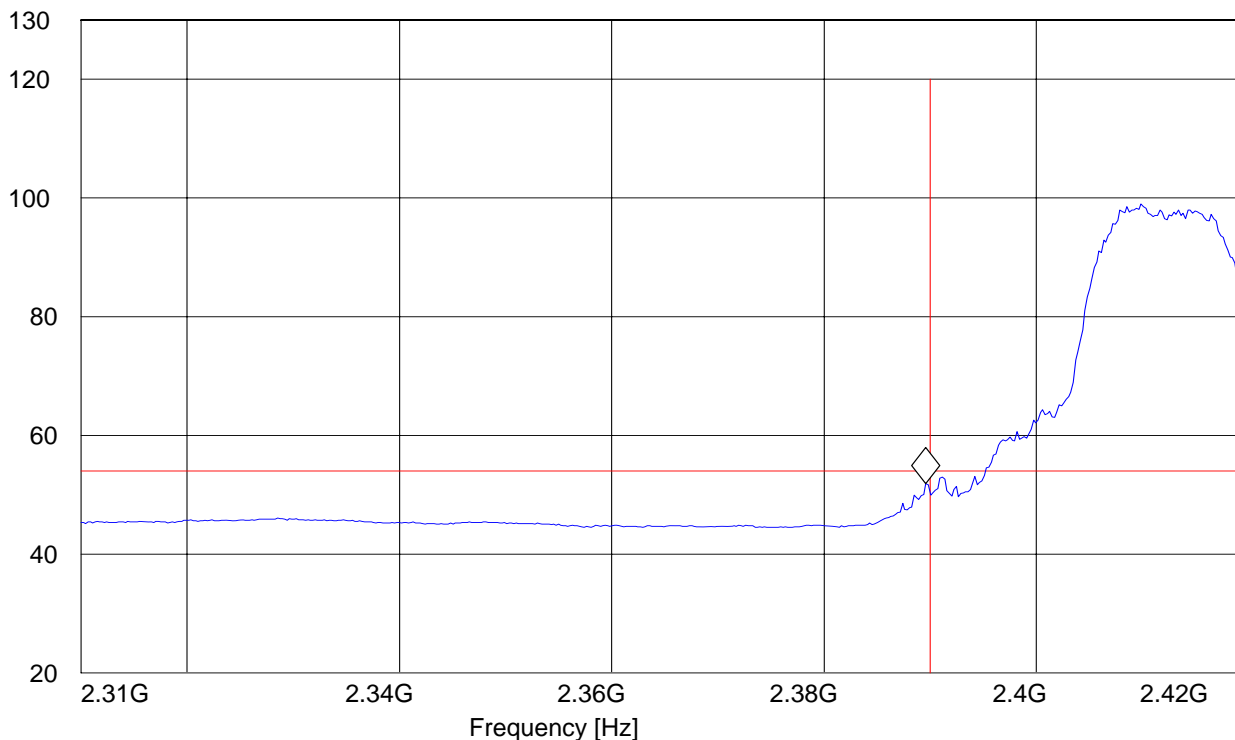
EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.389579158 GHz 51.92 dBμV/m

Level [dBμV/m]



(2462MHz) HIGHER BAND EDGE PEAK -802.11b

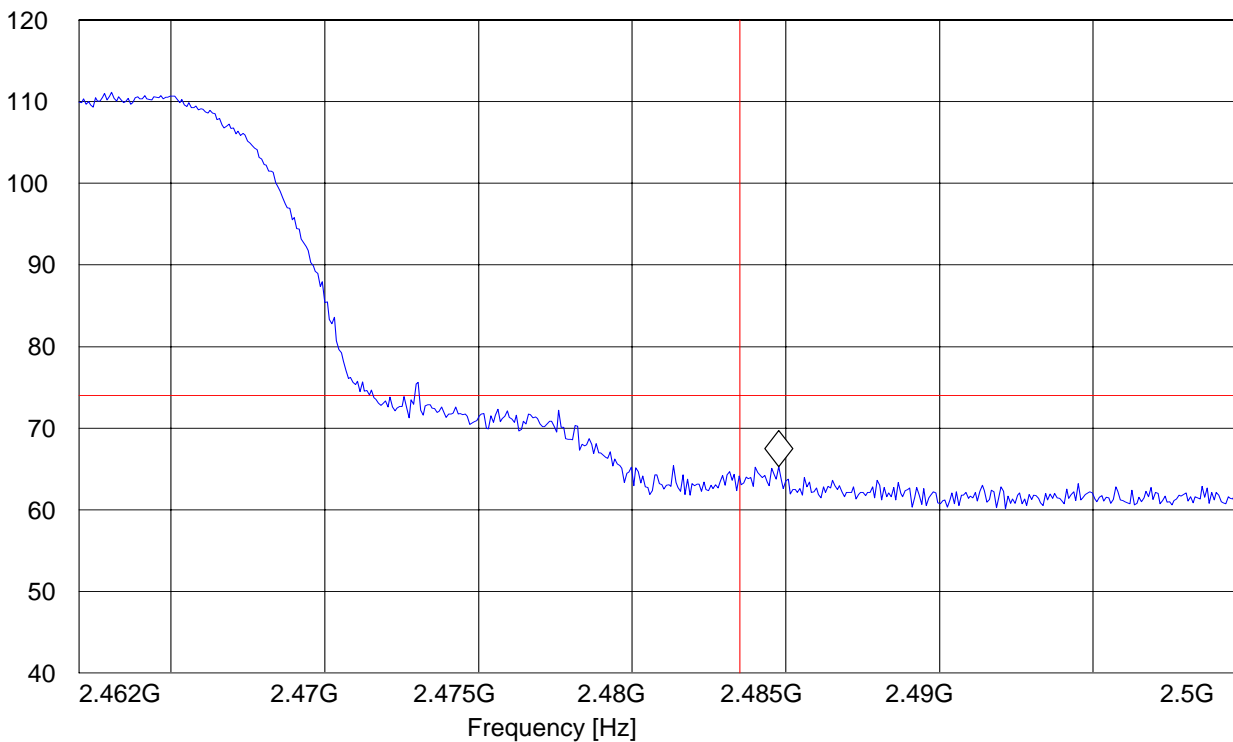
EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 HBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.484769539 GHz 65.27 dBµV/m

Level [dBµV/m]



**(2462MHz) HIGHER BAND EDGE AVERAGE**

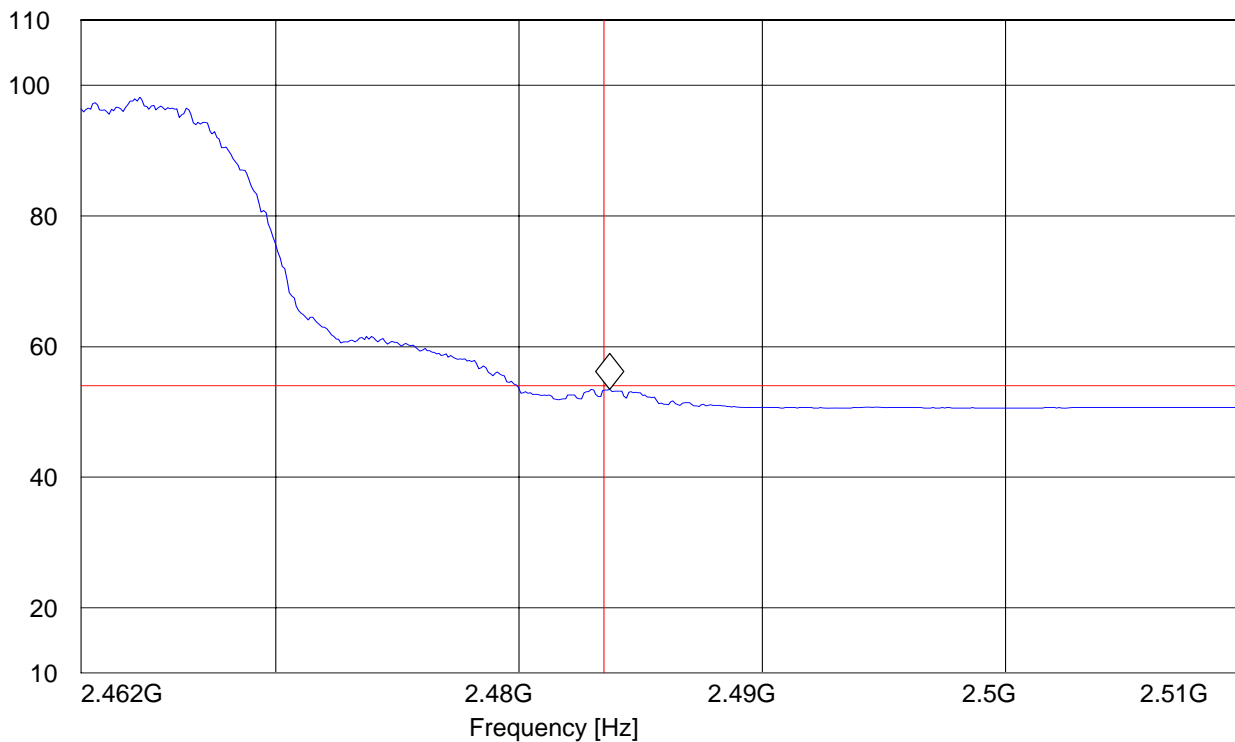
EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11B
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 HBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz

Marker: 2.483739479 GHz 53.38 dBμV/m

Level [dBμV/m]



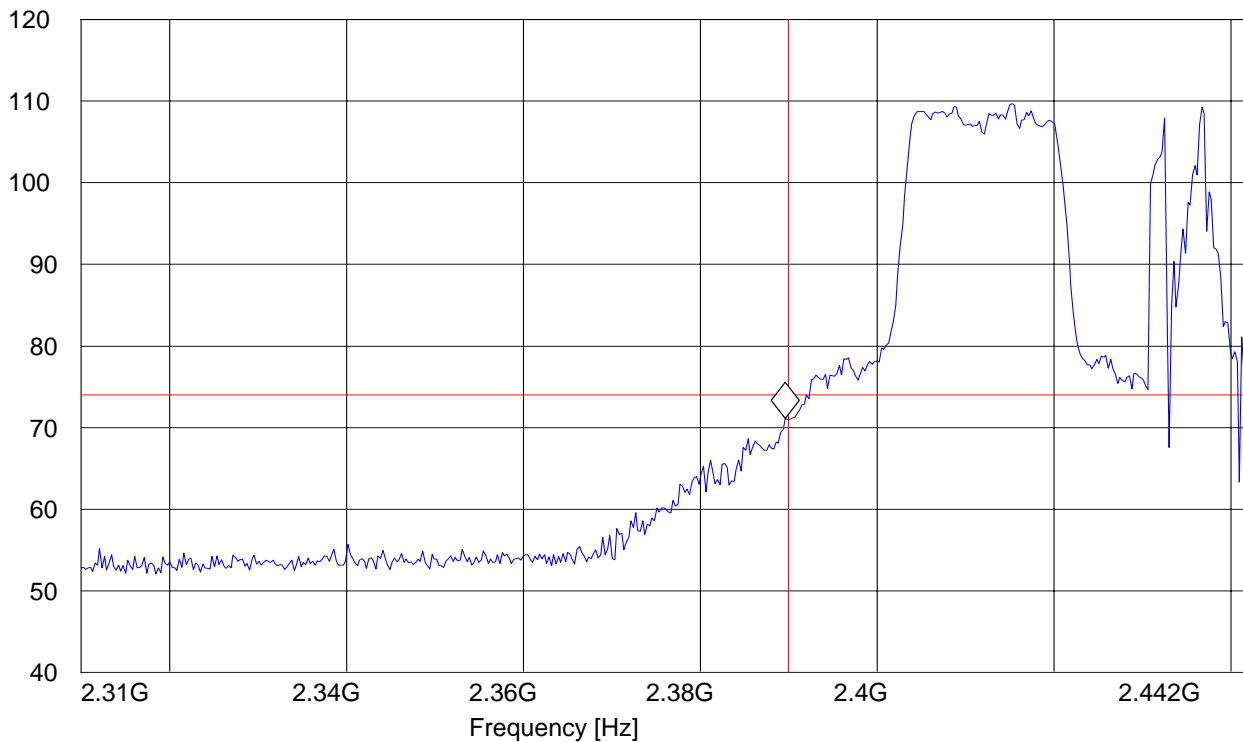
**5.2.3 RESULTS: 802.11g
(2412MHz) LOWER BAND EDGE PEAK – 802.11g**

EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.389623246 GHz

71.11 dB μ V/mLevel [dB μ V/m]

(2412MHz) LOWER BAND EDGE AVERAGE - 802.11g

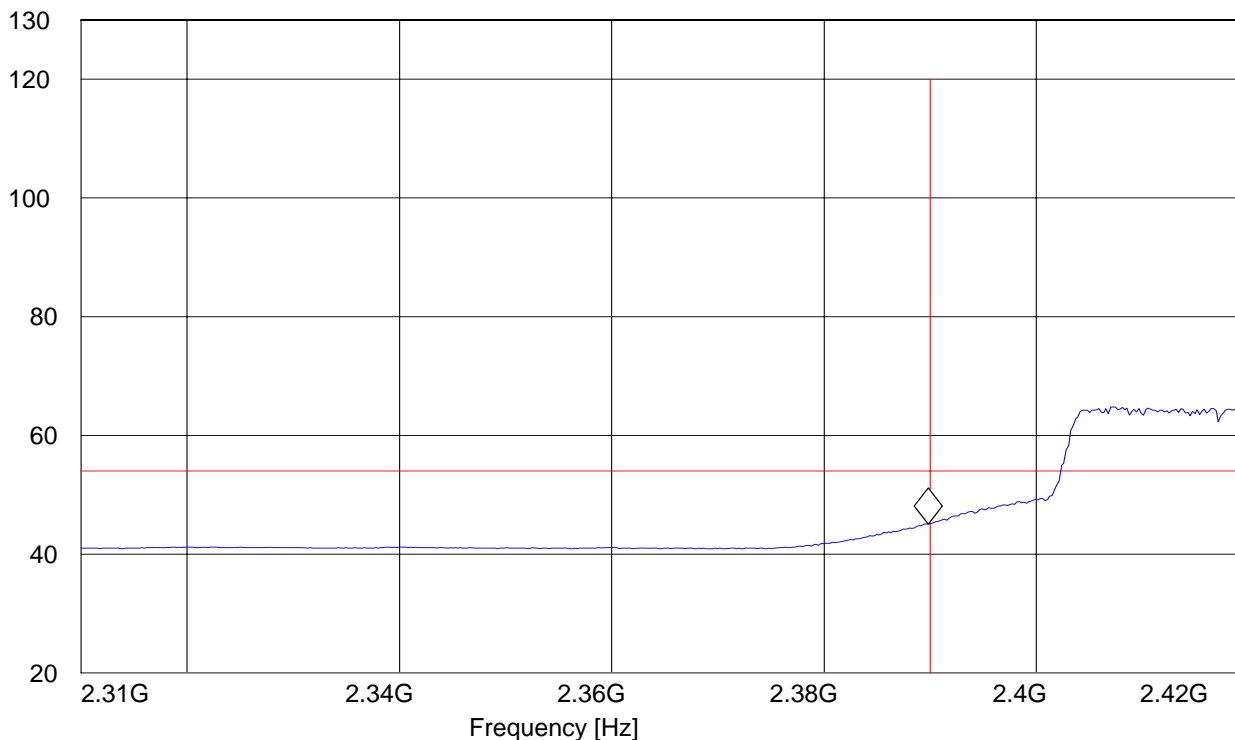
EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.389799599 GHz 45.12 dBμV/m

Level [dBμV/m]



(2462MHz) HIGHER BAND EDGE PEAK – 802.11g

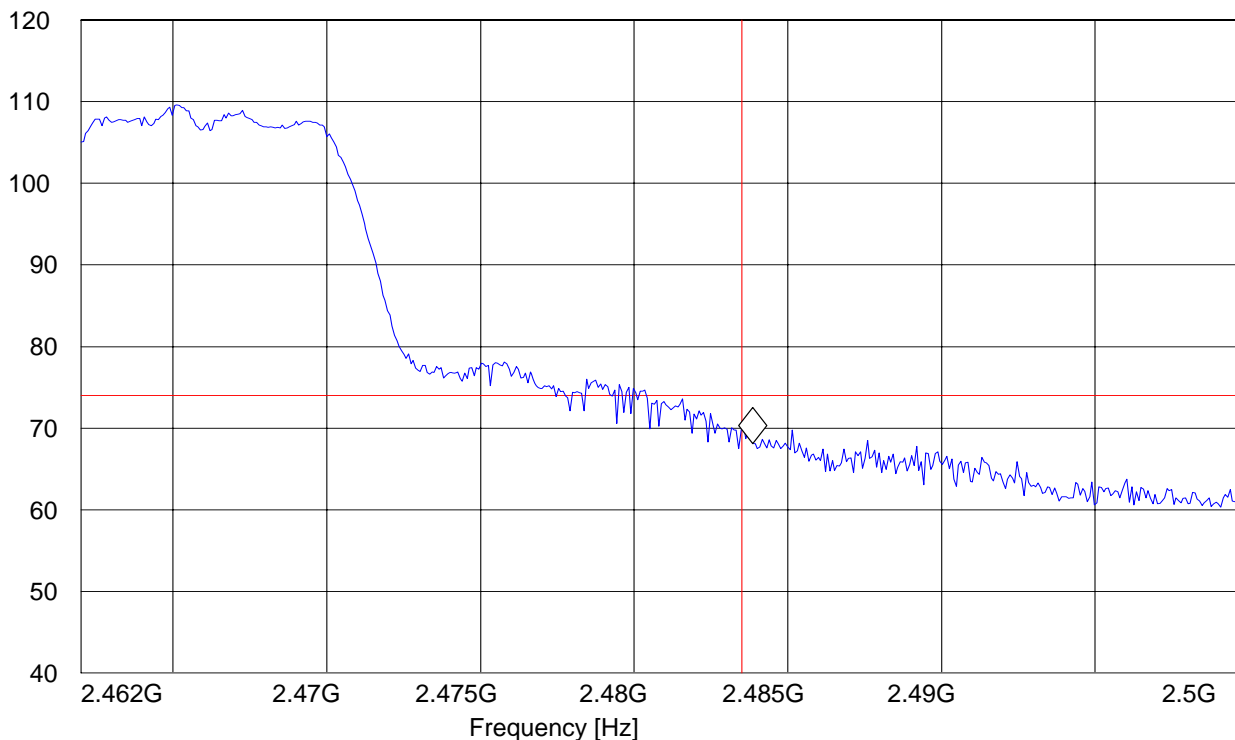
EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 HBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.483855711 GHz 68.11 dBμV/m

Level [dBμV/m]



(2462MHz) HIGHER BAND EDGE AVERAGE- 802.11g

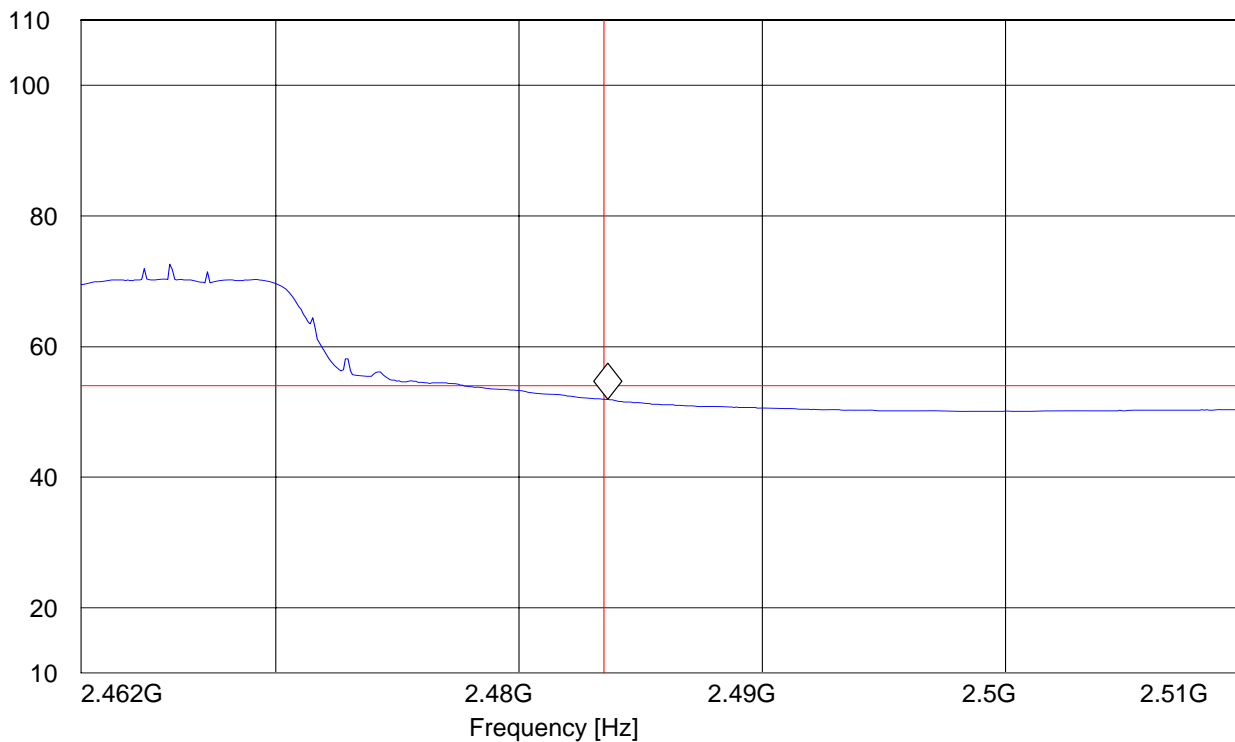
EUT: VX6
Customer:: LXE
Test Mode: WLAN 802.11G
ANT Orientation: V
EUT Orientation: V
Test Engineer: Peter
Voltage: AC ADAPTOR
Comments: TT302°

SWEEP TABLE: "FCC15.247 HBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz

Marker: 2.483643287 GHz 51.87 dBμV/m

Level [dBμV/m]



5.3 TRANSMITTER SPURIOUS EMISSIONS RADIATED § 15.247/15.205/15.209

5.3.1 LIMITS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

*PEAK LIMIT= 74dBuV/m

*AVG. LIMIT= 54dBuV/m

NOTE:

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.

2. All measurements are done in peak mode using an average limit , unless specified with the plots.

Results for the radiated measurements below 30MHz according § 15.33

Frequency	Measured values	Remarks
9KHz – 30MHz	No emissions found, caused by the EUT	This is valid for all the tested channels



5.3.2 RESULTS, VX6

Quasipeak measurements of radiated spurious emission shows that all emissions are below the limit.

Highest measured radiated spurious emissions are at least 20dB below the field strength of the fundamental transmission. These emissions from the end product that are over the 15.209 limits are non-restricted. The limit for these non-restricted emissions is calculated as follows: Lowest measured EIRP is $20.44\text{dBm} + 95.2\text{dB} = 115.64\text{dBuV/m}$ at 3 meters. Per FCC rule 15.247 (d) out of band emission are to be 20dB below the fundamental which is 95.64dBuV/m .

Additional test results have been included to show that the hosts themselves pass class A emission limit and therefore satisfy FCC 15.109 requirements.

30MHz – 1GHz**Antenna: vertical**

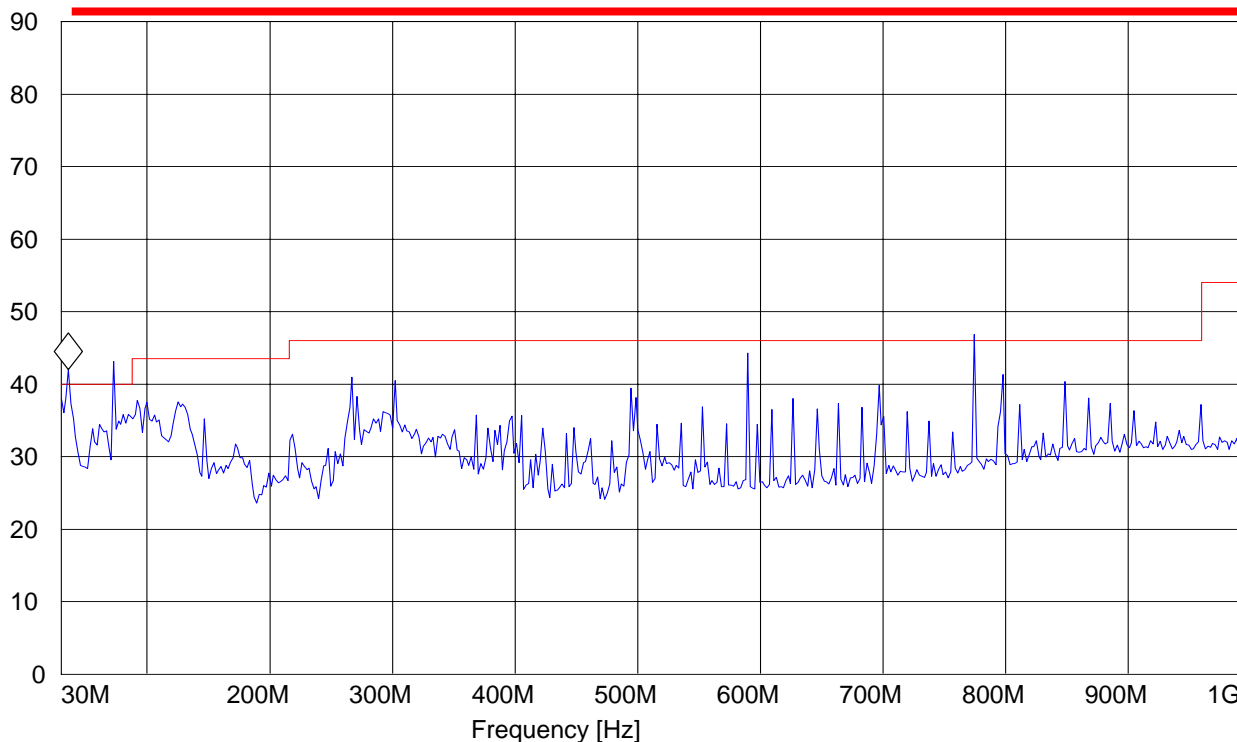
EUT: VX6
Customer:: LXE
Test Mode: WLAN
ANT Orientation: V
EUT Orientation: V
Test Engineer: PETER
Voltage: AC ADAPTOR
Comments:

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert

Marker: 35.831663 MHz 42.05 dBμV Intentional Radiator Limit

Level [dBμV/m]

**QUASISPEAK MEASUREMENTS:**

35.831663MHz: 37.05dBuV/m

72.765531MHz: 38.14dBuV/m

774.50901MHz: 41.58dBuV/m

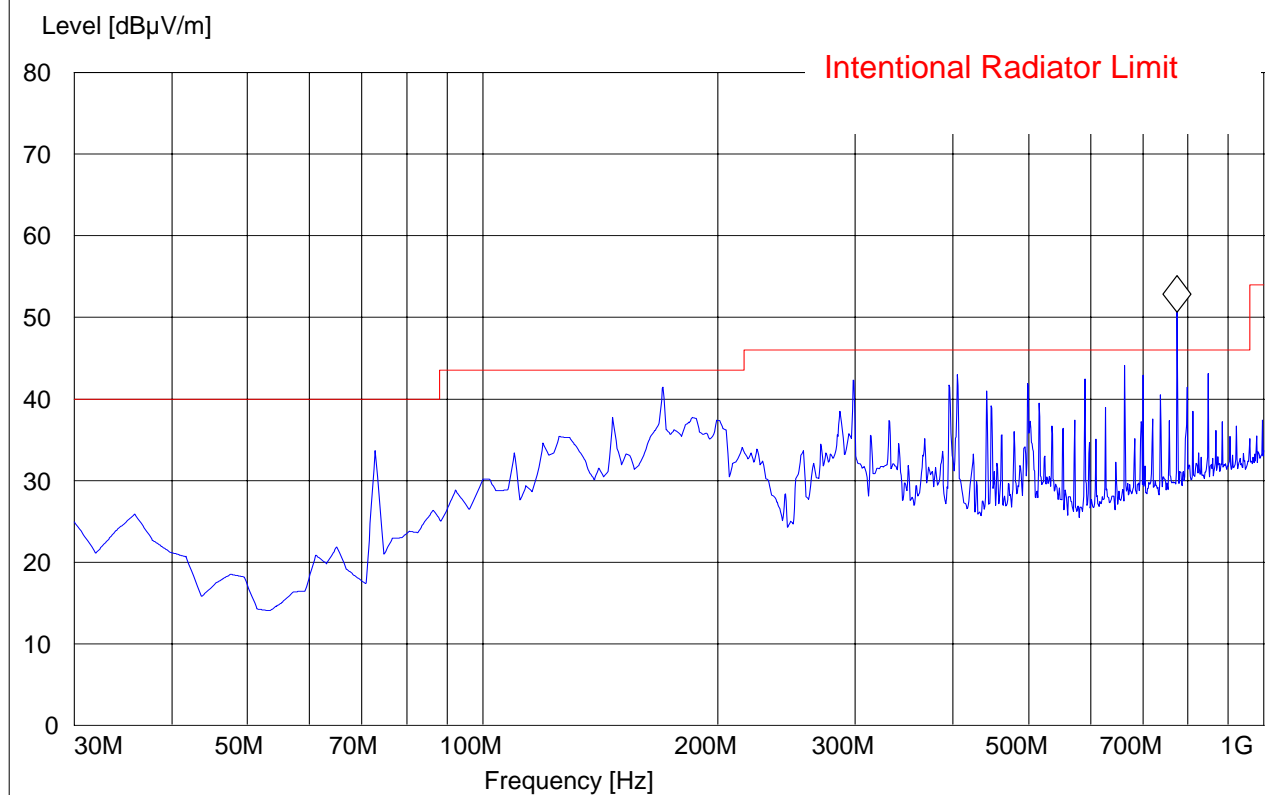
30MHz – 1GHz**Antenna: horizontal**

EUT: VX6
Customer:: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: PETER
Voltage: AC ADAPTOR
Comments:

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz

Marker: 774.509018 MHz

50.63 dB μ V/m**QUASISPEAK MEASUREMENT**774.50901MHz: 45.48 dB μ V/m

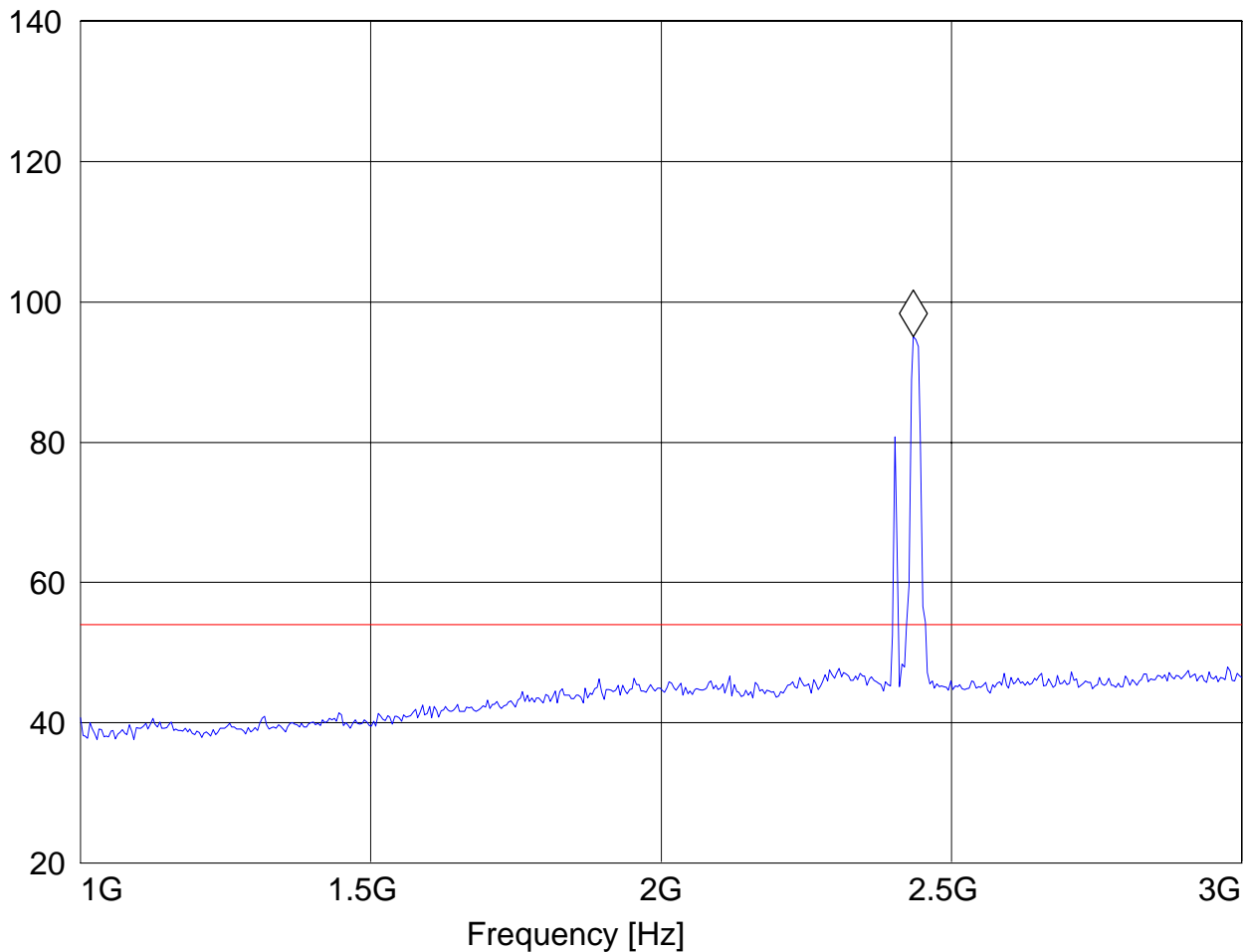
**1-3GHz (2412MHz)****Note: The peak above the limit line is the carrier freq.****Note: Peak Reading vs. Average limit**

EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: PETER MU
Power Supply: BATTERY
Comments: MARKER PLACED ON WLAN CH 6; UNMARKED PEAK IS BT GFSK CH0

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.434869739 GHz 95.04 dB μ V/m

Level [dB μ V/m]

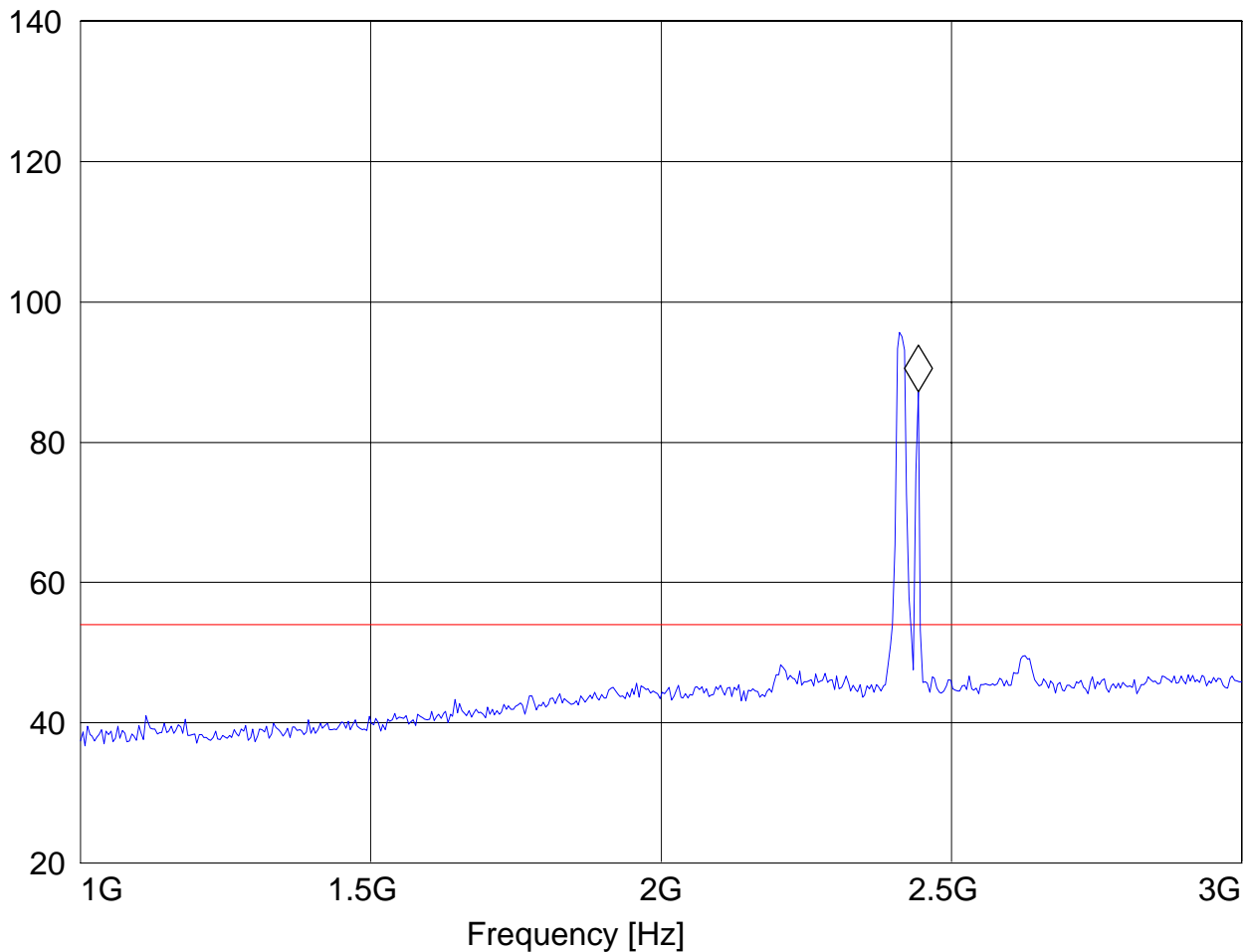
**1-3GHz (2437MHz)****Note: The peaks above the limit line is the carrier freq.****Note: Peak Reading vs. Average limit**

EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: SAM
Power Supply: BATTERY
Comments: UNMARKED PEAK IS WLAN CH 1; PEAK MARKED IS BT GFSK CH39

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.442885772 GHz 87.23 dB μ V/m

Level [dB μ V/m]

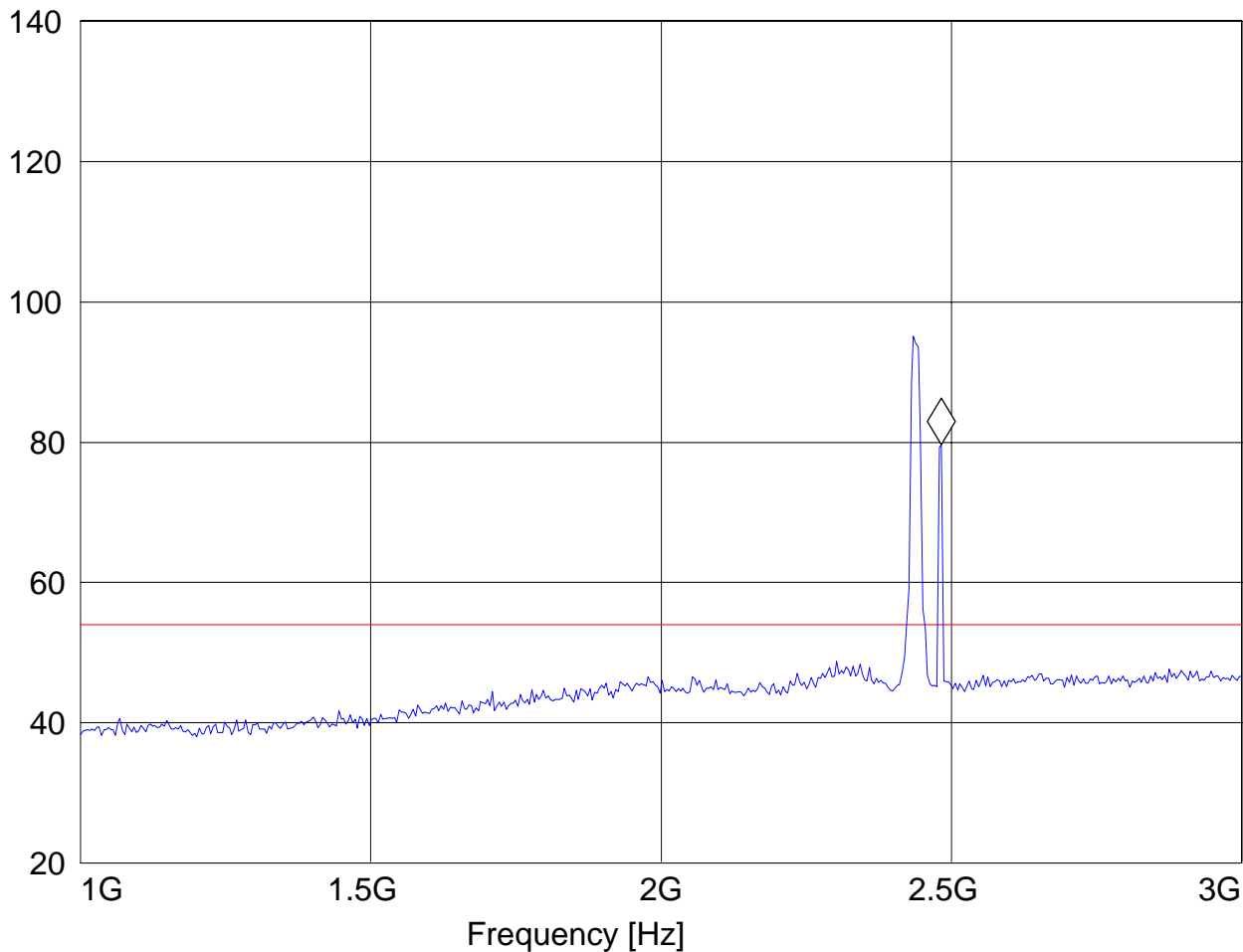
**1-3GHz (2462MHz)****Note: The peaks above the limit line is the carrier freq.****Note: Peak Reading vs. Average limit**

EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: PETER MU
Power Supply: BATTERY
Comments: UNMARKED PEAK IS WLAN CH 6; PEAK MARKED IS BT GFSK CH78

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.482965932 GHz 79.7 dB μ V/m

Level [dB μ V/m]

3-18GHz (2412MHz)**Note: Peak Reading vs. Average limit**

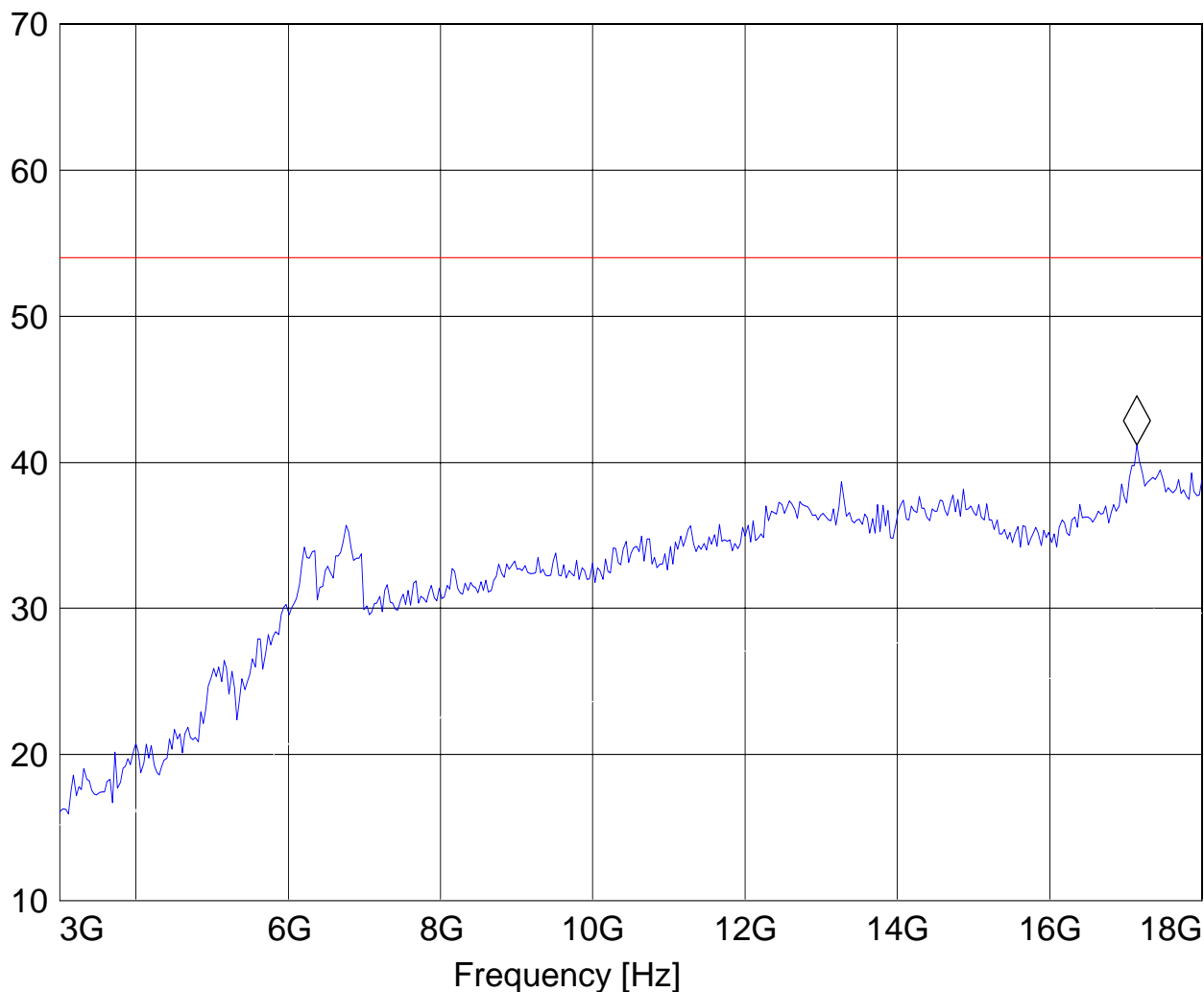
EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: PETER MU
Power Supply: BATTERY
Comments:

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 17.148296593 GHz 41.19 dB μ V/m

Level [dB μ V/m]



**3-18GHz (2437MHz)****Note: Peak Reading vs. Average limit**

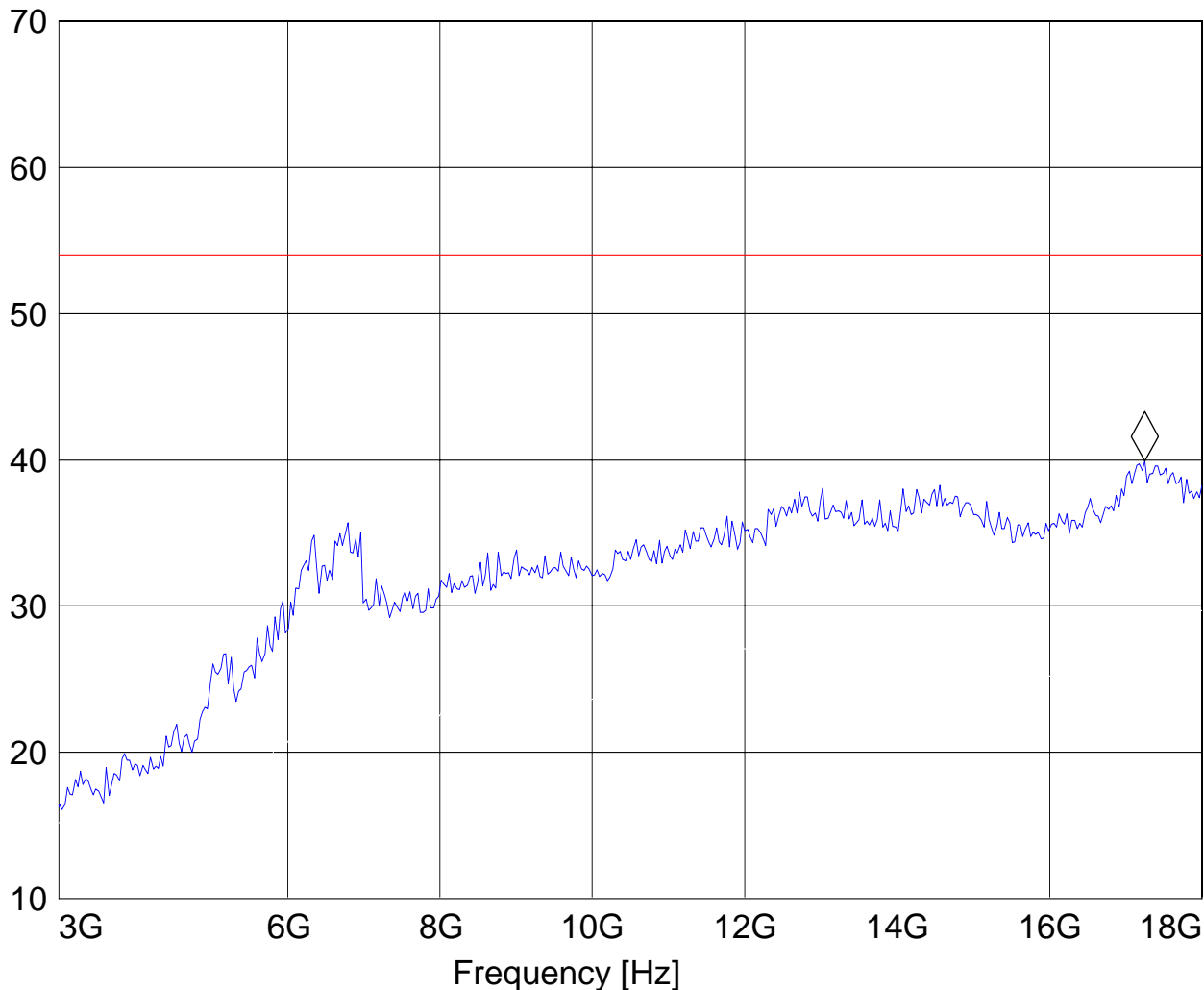
EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: SAM
Power Supply: BATTERY
Comments:

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 17.250501002 GHz 39.91 dB μ V/m

Level [dB μ V/m]



**3-18GHz (2462MHz)****Note: Peak Reading vs. Average limit**

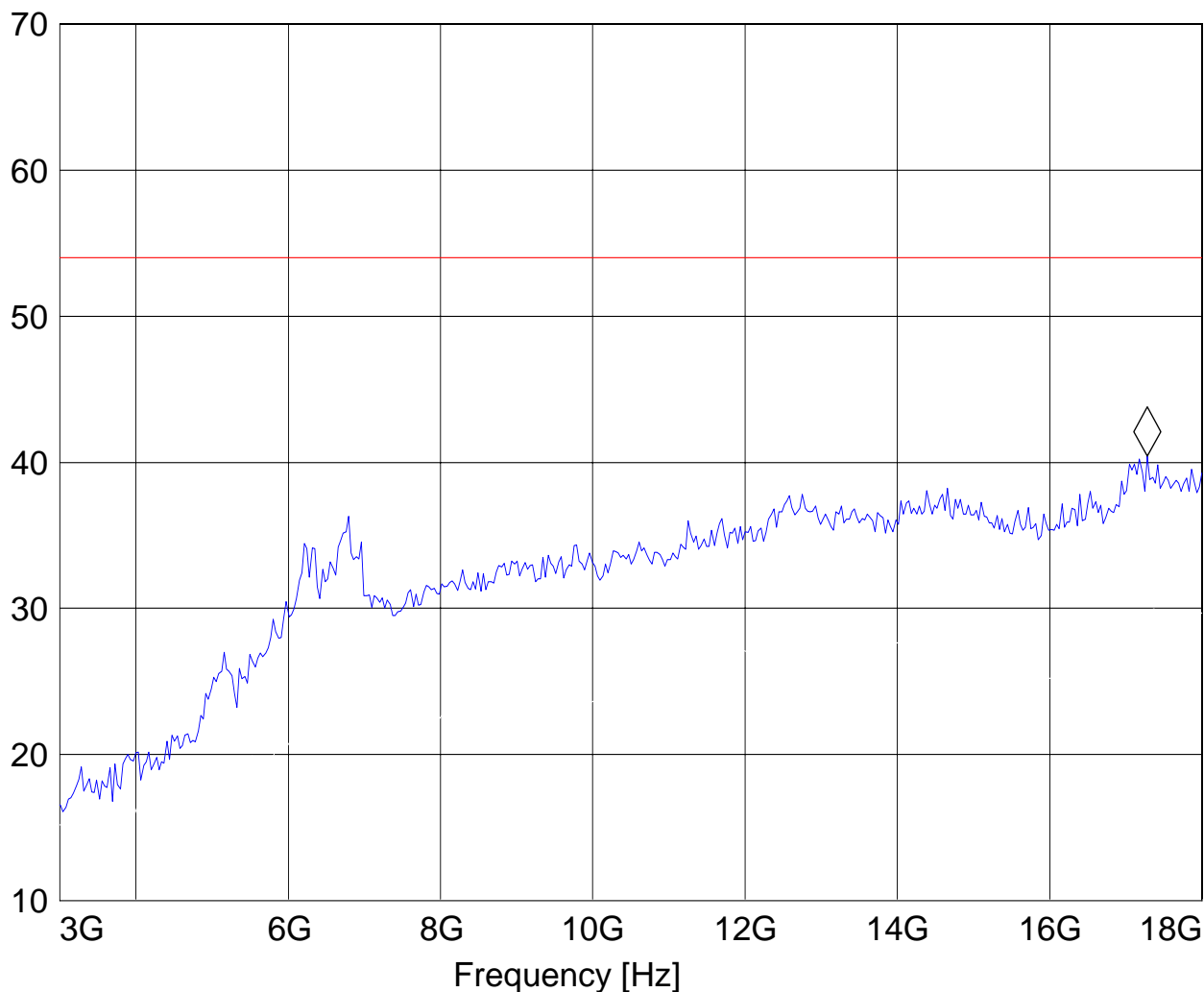
EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: PETER MU
Power Supply: BATTERY
Comments:

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 17.284569138 GHz 40.42 dB μ V/m

Level [dB μ V/m]



**18-25GHz****Note: This plot is valid for low, mid, high channels (worst-case plot)****Note: Peak Reading vs. Average limit**

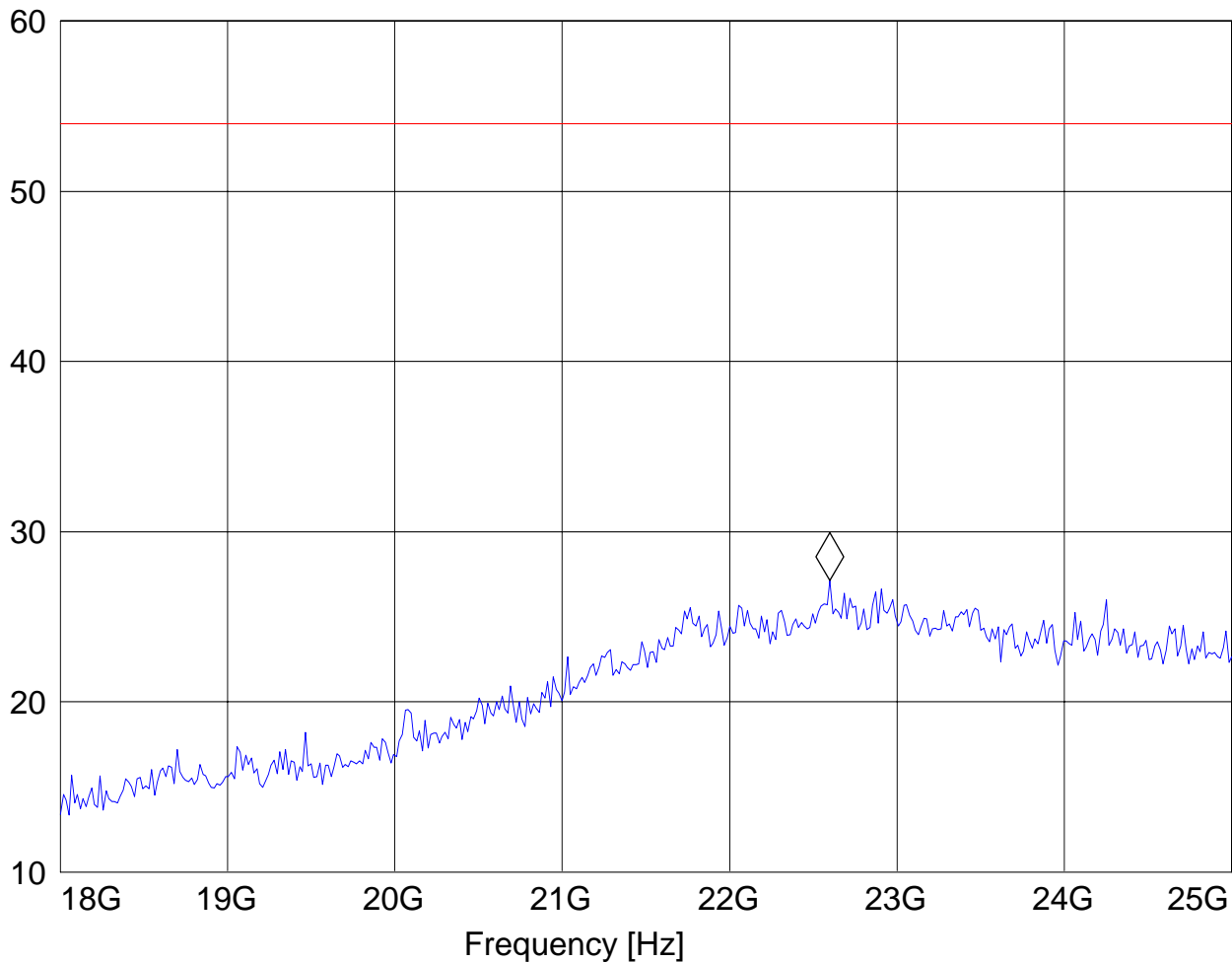
EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: PETER MU
Power Supply: BATTERY
Comments:

SWEEP TABLE: "FCC15.247_18-26.5G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
18.0 GHz	26.5 GHz	MaxPeak	Coupled	1 MHz	#572 horn AF

Marker: 22.599198397 GHz 27.15 dBμV/m

Level [dBμV/m]



**5.4 RECEIVER RADIATED EMISSIONS
& 133****§ 2.1053 / RSS-132****NOTE:**

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3GHz and 26.5GHz very short cable connections to the antenna was used to minimize the noise level.

Limits**SUBCLAUSE § RSS-133**

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

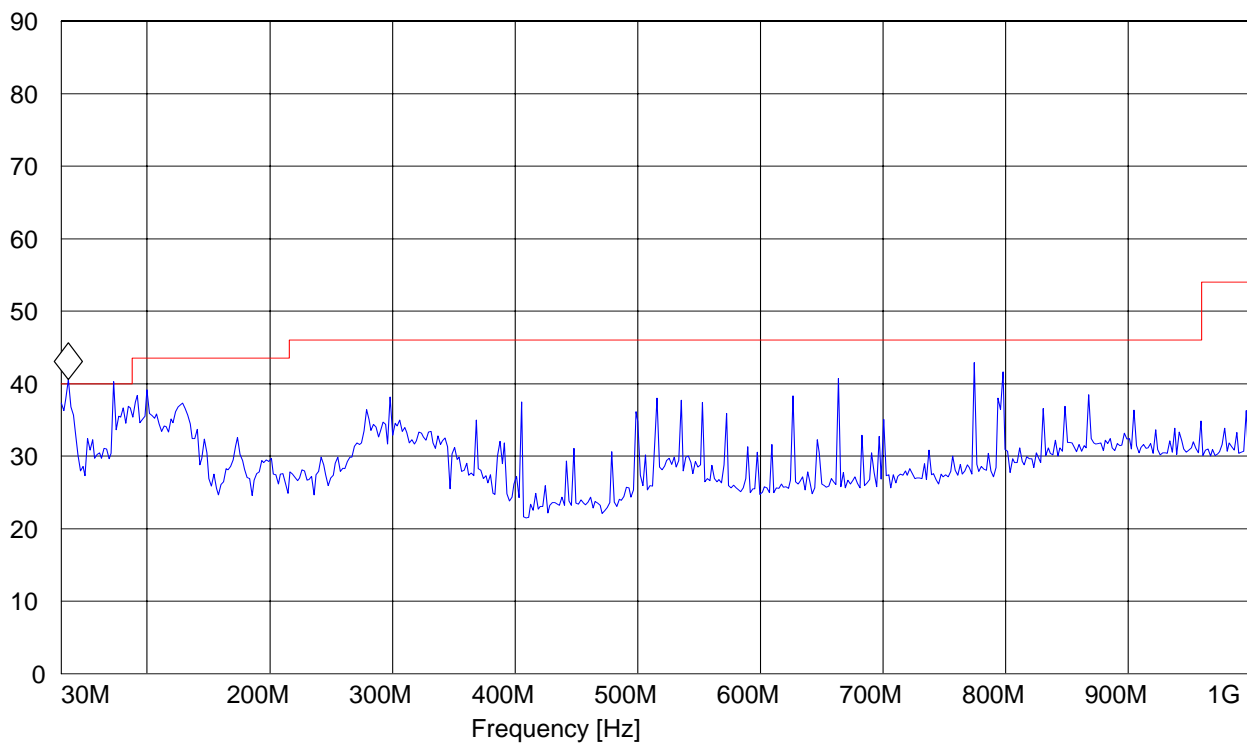
**30MHz – 1GHz****Antenna: vertical****Note: This plot is valid for low, mid, high channels (worst-case plot)**

EUT: VX6
Customer:: LXE
Test Mode: WLAN
ANT Orientation: V
EUT Orientation: V
Test Engineer: PETER
Voltage: AC ADAPTOR
Comments:

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert

Marker: 35.831663 MHz 40.57 dB μ V/m

Level [dB μ V/m]**QUASIPeAK MEASUREMENTS:**35.831663MHz: 37.05dB μ V/m

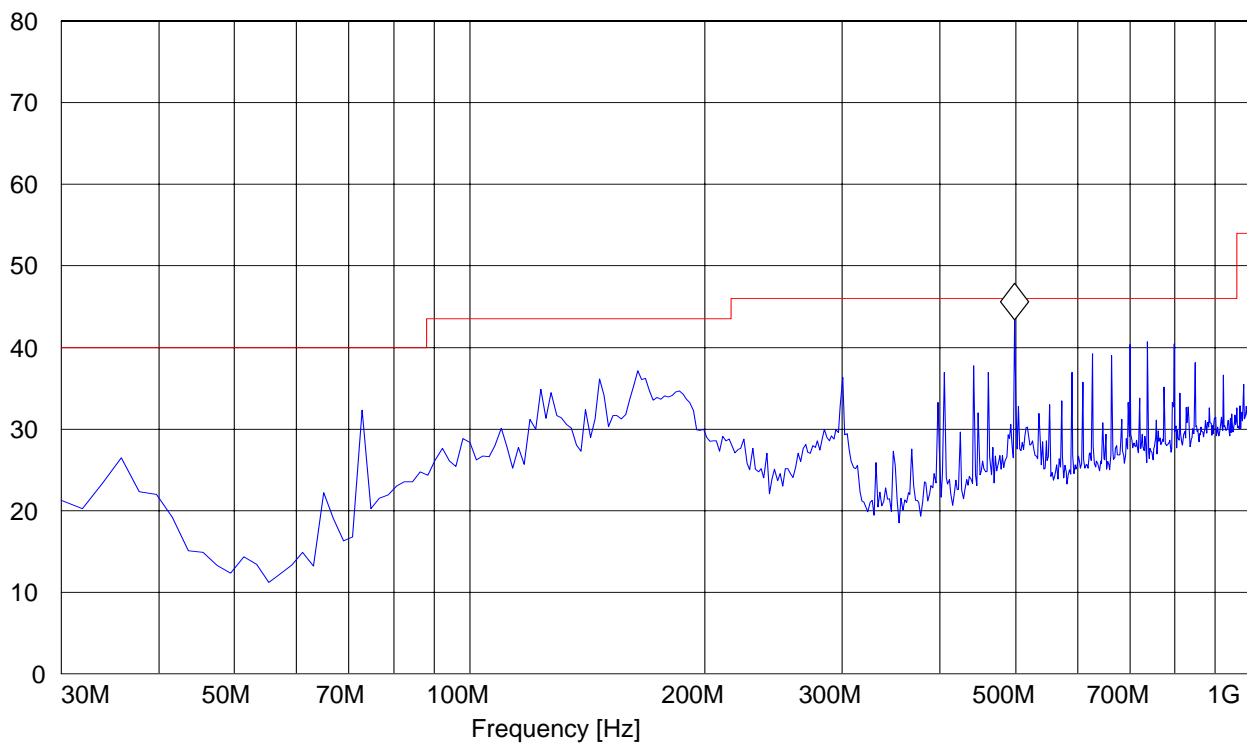
30MHz – 1GHz**Antenna: horizontal****Note: This plot is valid for low, mid, high channels (worst-case plot)**

EUT: VX6
Customer:: LXE
Test Mode: WLAN
ANT Orientation: V
EUT Orientation: V
Test Engineer: PETER
Voltage: AC ADAPTOR
Comments:

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz

Marker: 498.476954 MHz 43.38 dB μ V/m

Level [dB μ V/m]

**1-3GHz****Note: Peak Reading vs. Average limit**

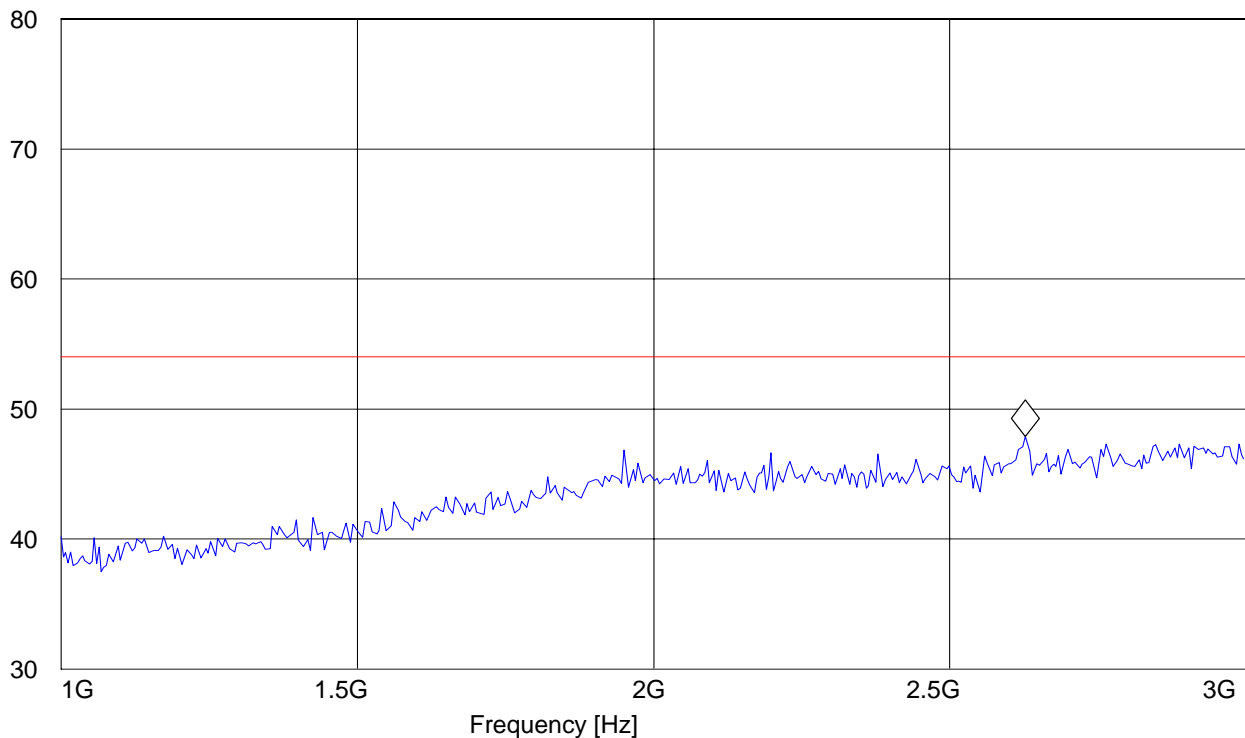
EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: SAM
Power Supply: BATTERY
Comments:

SWEEP TABLE: "CANADA RE_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 2.627254509 GHz 47.91 dB μ V/m

Level [dB μ V/m]



3-18GHz**Note: Peak Reading vs. Average limit**

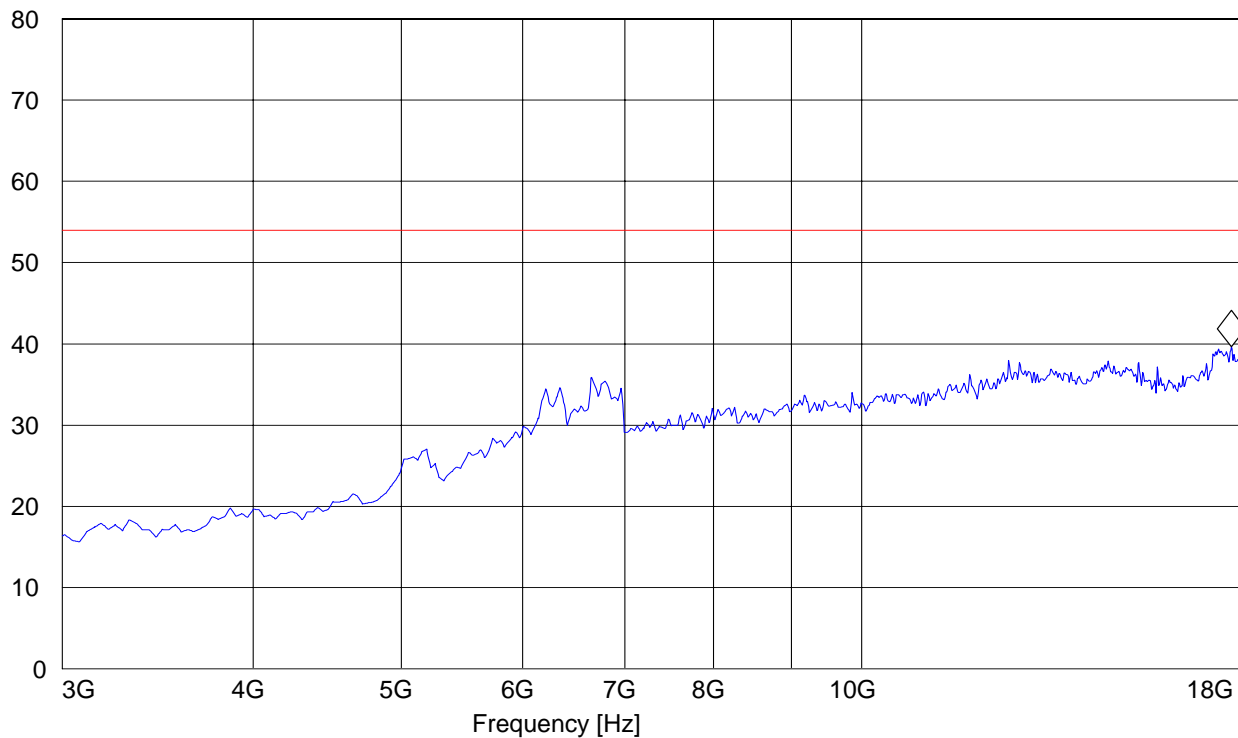
EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: SAM
Power Supply: BATTERY
Comments: STANDBY MODE

SWEEP TABLE: "CANADA RE_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

Marker: 17.45490982 GHz 39.61 dB μ V/m

Level [dB μ V/m]



**3-18GHz**

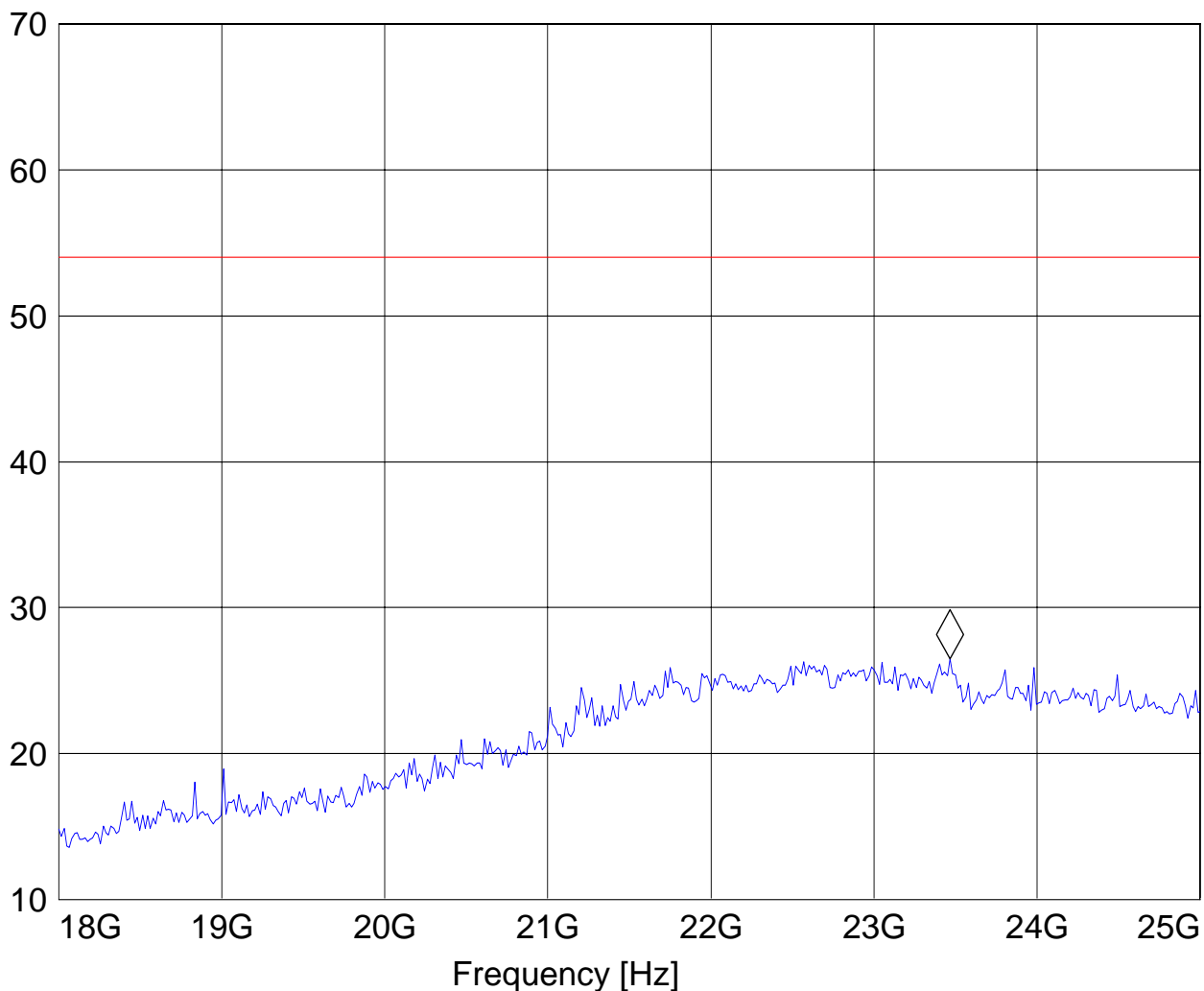
Note: Peak Reading vs. Average limit

EUT: VX6
Customer: LXE
Test Mode: WLAN
ANT Orientation: H
EUT Orientation: V
Test Engineer: SAM
Power Supply: BATTERY
Comments: STANDBY MODE

SWEEP TABLE: "CANADA RE_18-26.5G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
18.0 GHz	26.0 GHz	MaxPeak	Coupled	1 MHz	#572 horn AF

Marker: 23.466933868 GHz 26.48 dB μ V/m

Level [dB μ V/m]



6 Measurements (Conducted)

6.1 MAXIMUM PEAK OUTPUT POWER § 15.247 (CONDUCTED)

6.1.1 LIMIT SUB CLAUSE § 15.247 (b) (1)

Frequency range	RF power output
2412-2462 MHz	30dBm

*limit is based upon antenna gain of less than or equal to 6dBi.

6.1.2 RESULTS:

Test not conducted.



6.2 20dB BANDWIDTH

6.2.1 LIMIT SUB CLAUSE § 15.247 (a) (1) (i) (ii) (iii)

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

6.2.2 RESULTS:

Test not conducted.

6.3 CARRIER FREQUENCY SEPARATION

6.3.1 LIMIT SUB CLAUSE § 15.247 (a) (1) (i) (ii) (iii)

SEPARATION
> 25 KHz or > 20 dB BANDWIDTH

6.3.2 RESULTS:

Test not conducted.

6.4 NUMBER OF HOPPING CHANNELS

6.4.1 LIMIT SUB CLAUSE § 15.247 (a) (1) (iii)

NUMBER OF CHANNELS
> 15

6.4.2 RESULTS:

Test not conducted.



6.5 TIME OF OCCUPANCY (DWELL TIME)

6.5.1 LIMIT SUB CLAUSE § 15.247 (a) (1) (i) (ii) (iii)

FREQUENCY RANGE	AVERAGE TIME OF OCCUPANCY PER 31.6 SECONDS (LIMIT)
2412-2462MHz	0.4 SECONDS

6.5.2 RESULTS:

Test not conducted.



6.6 CONDUCTED SPURIOUS EMISSION

6.6.1 LIMIT SUB CLAUSE § 15.247 (d)

FREQUENCY RANGE	limit
30M-25GHz	-20dBc

6.6.2 RESULTS: Tnom(23)°C VnomVDC

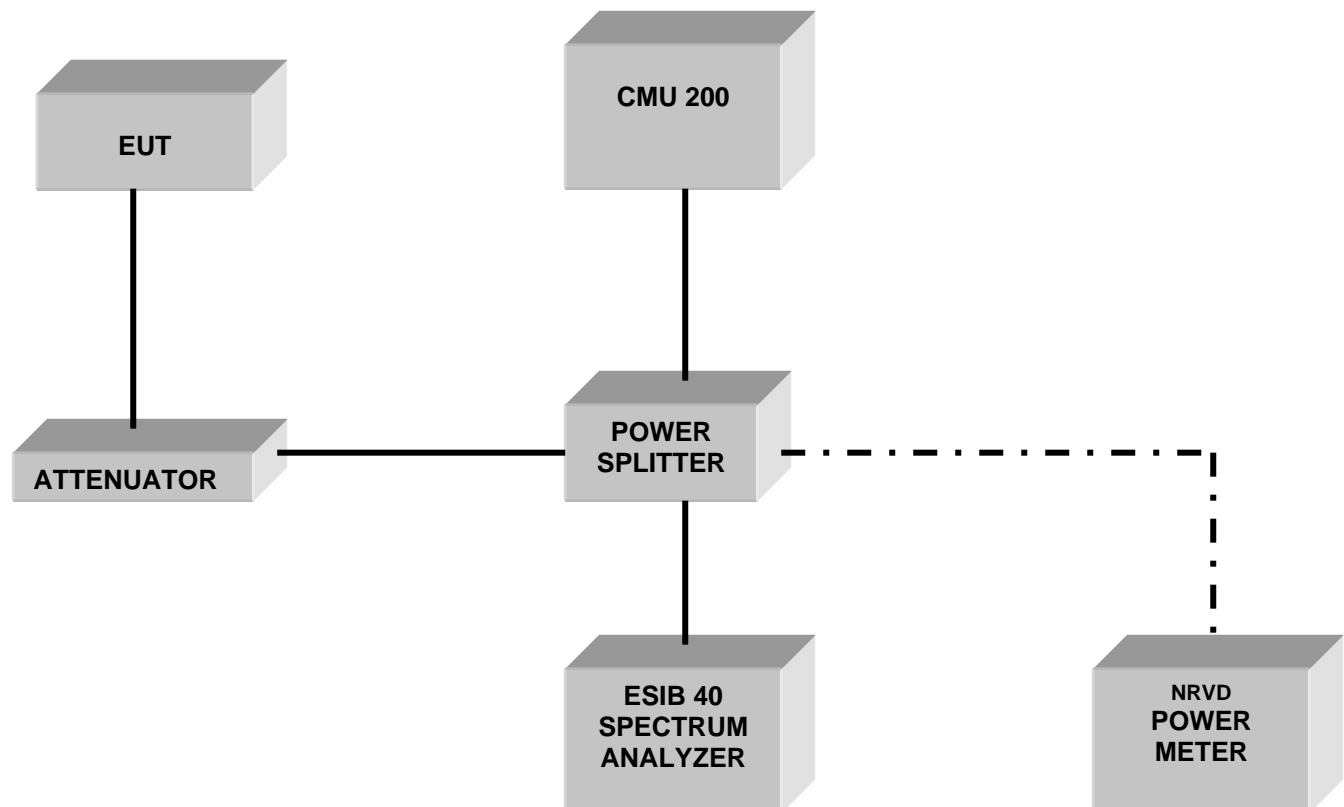
Test not conducted.

7 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal Due	Interval
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2008	1 year
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	100017	August 2008	1 year
03	Signal Generator	SMY02	Rohde & Schwarz	836878/011	May 2008	1 year
04	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02	May 2008	1 year
05	Biconilog Antenna	3141	EMCO	0005-1186	June 2008	1 year
06	Horn Antenna (1-18GHz)	SAS-200/571	AH Systems	325	June 2008	1 year
07	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240	June 2008	1 year
08	Power Splitter	11667B	Hewlett Packard	645348	n/a	n/a
09	Climatic Chamber	VT4004	Voltsch	G1115	May 2008	1 year
10	High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a	n/a
11	High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a	n/a
12	Pre-Amplifier	JS4-00102600	Miteq	00616	May 2008	1 year
13	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807	May 2008	1 year
14	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008	May 2008	1 year
15	Universal Radio Comm. Tester	CMU 200	Rohde & Schwarz	832221/06	May 2008	1 year
16	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2008	1 year
17	Loop Antenna	6512	EMCO	00049838	July 2008	2 years

8 BLOCK DIAGRAMS

Conducted Testing



Radiated Testing

ANECHOIC CHAMBER

