



**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

**Bluetooth™**  
Bluetooth  
Qualification Test  
Facility  
(BQTF)

**CTIA Authorized Test Lab**

LAB CODE 20020328-00

**FCC listed**  
**A2LA Accredited**

**IC recognized #**  
**3462B**

**CETECOM Inc.**

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Board of Directors: Dr. Harald Ansorge, 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.**

<b>Company</b>	<b>Description</b>	<b>Model #</b>
<b>LXE Inc.</b>	<b>Vehicle Mount Computer</b>	<b>VX7, VX6</b>

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

### **2.2 Identification of the Client**

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

### **2.3 Identification of the Manufacturer**

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

### **3 Equipment under Test (EUT)**

#### **3.1 Specification of the Equipment under Test**

Marketing Name:	<b>VX7, VX6</b>
Description:	<b>Vehicle Mount Computer</b>
Model No:	<b>VX7, VX6</b>
Antenna Type:	<b>0dBi</b>
Type(s) of Modulation:	<b>CCK, OFDM</b>
Frequency Band(s) of Operation:	<b>2412 - 2462MHz</b>
Numbers of Channels:	<b>11</b>
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 (GROUND) <input type="checkbox"/> 230VAC (NO GROUND) <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	<b>LXE Inc</b>	<b>VX7</b>	VX707375954
2	EUT	<b>LXE Inc</b>	<b>VX6</b>	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 <sub>nom</sub> (23)°C	V <sub>nom</sub> VDC	21.77	21.96	21.69
Measurement uncertainty		±0.5dBm		

**EIRP: 802.11g**

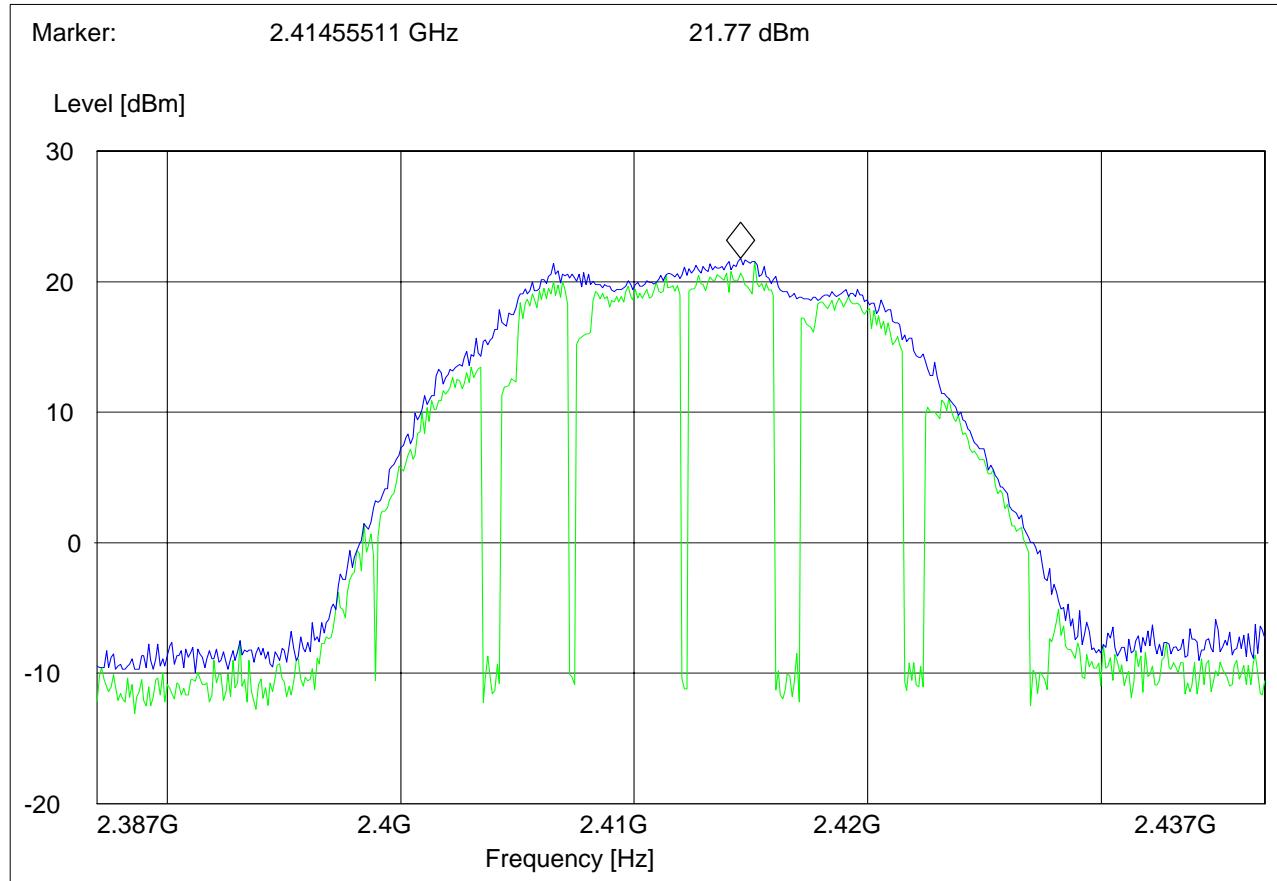
TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2412	2437	2462
T <sub>nom</sub> (23)°C	V <sub>nom</sub> VDC	20.44	21.3	21.59
Measurement uncertainty		±0.5dBm		

## 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°

### ***SWEET TABLE: "EIRP RLAN CH1"***

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

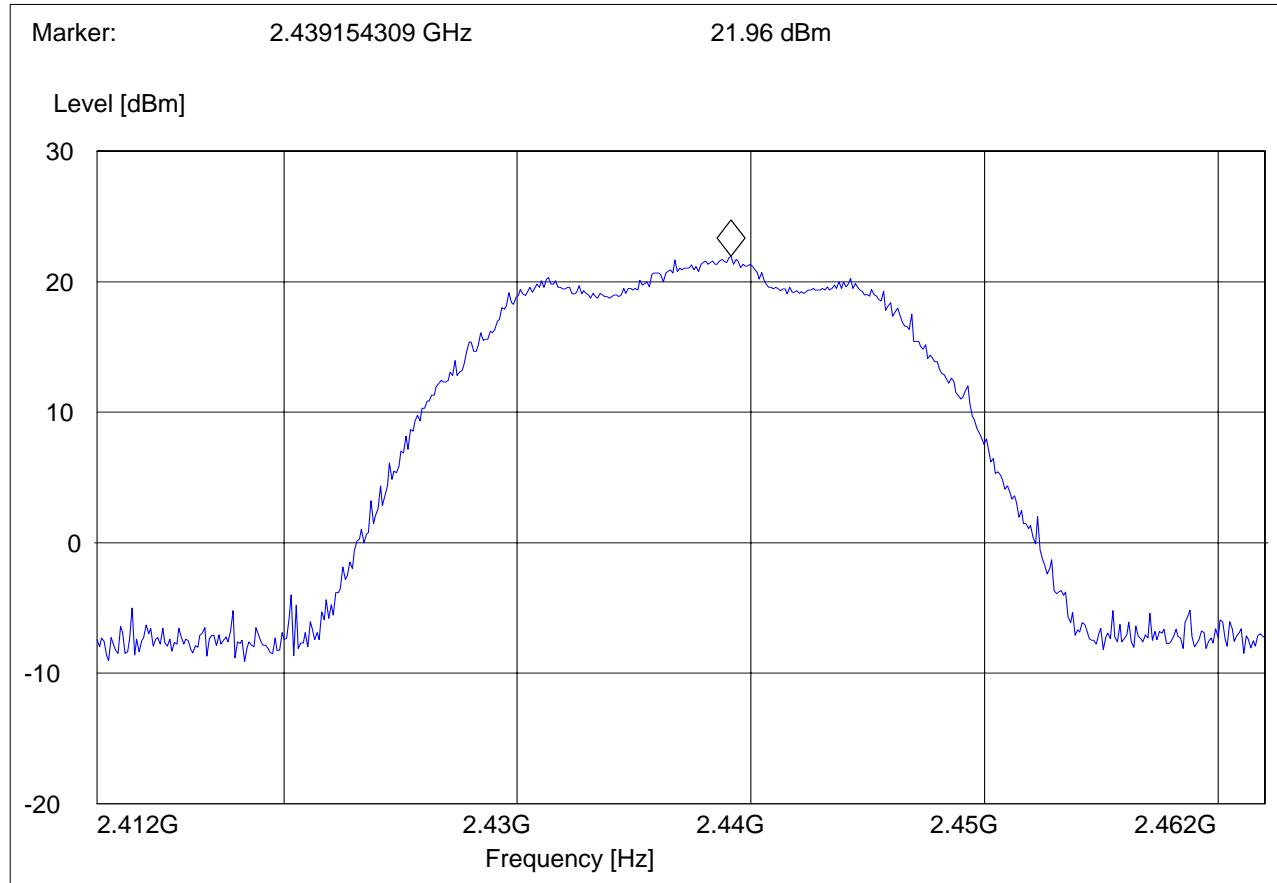


### EIRP MIDDLE CHANNEL-802.11b

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

#### ***SWEET TABLE: "EIRP RLAN CH6"***

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

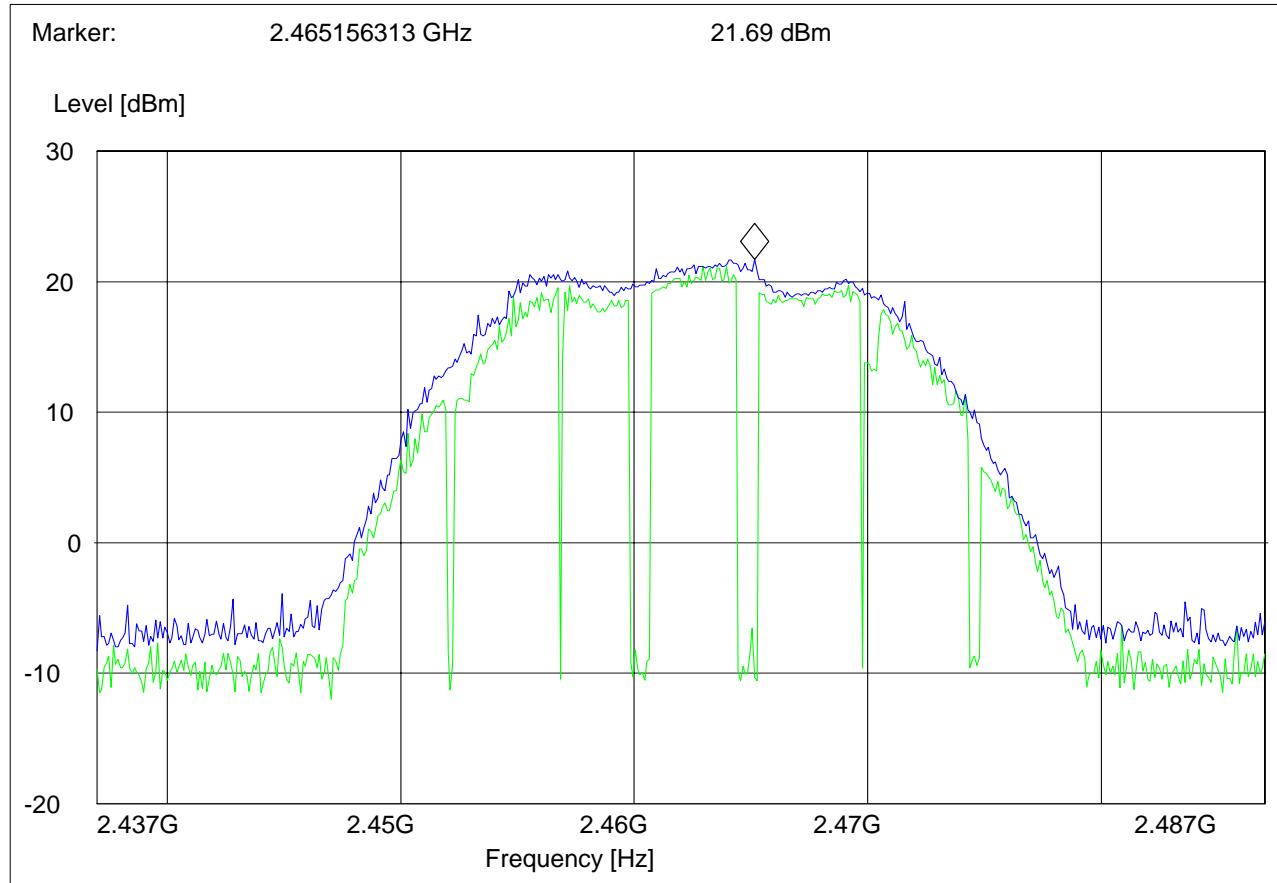


### **EIRP HIGH CHANNEL-802.11b**

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

#### ***SWEET TABLE: "EIRP RLAN CH11"***

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

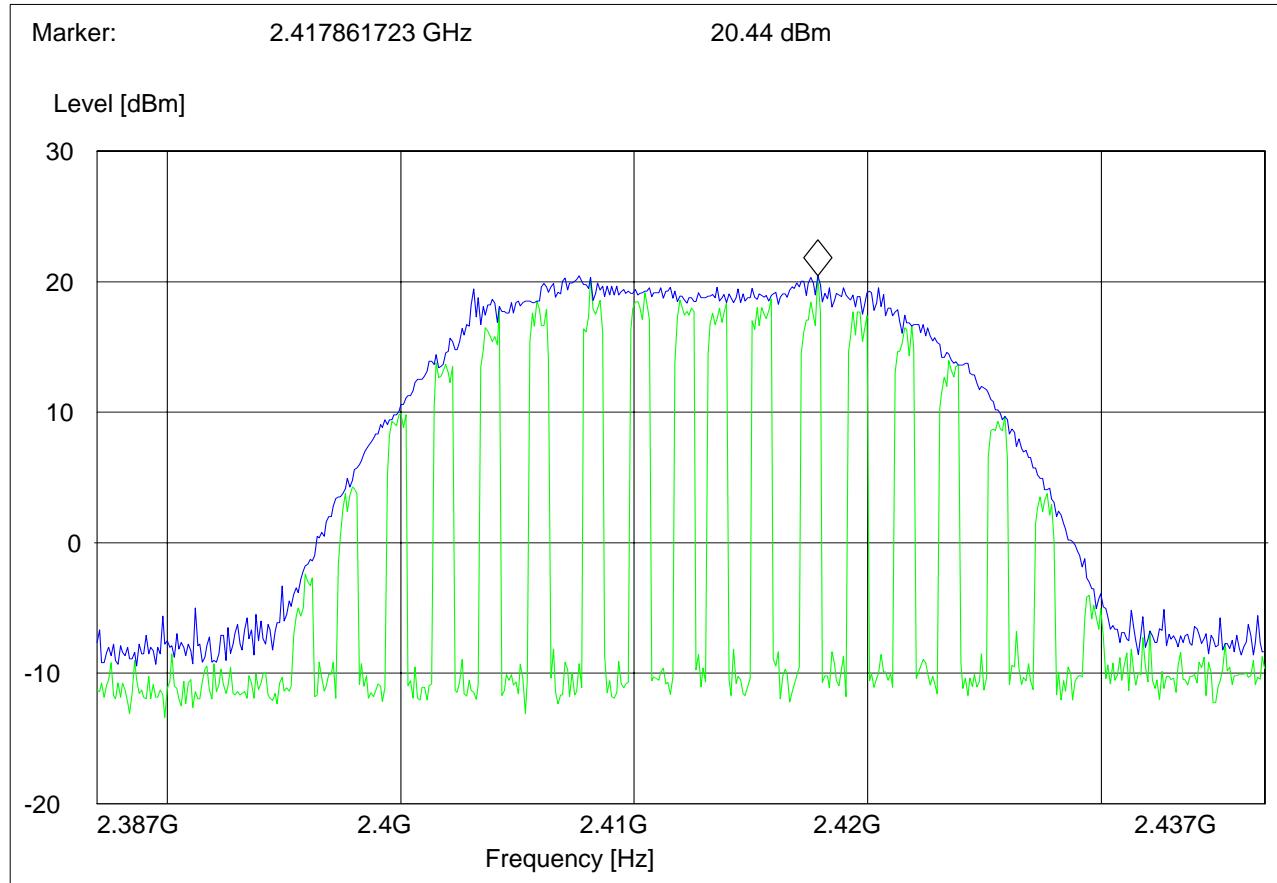


### EIRP LOW CHANNEL- 802.11g

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

#### ***SWEET TABLE: "EIRP RLAN CH1"***

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

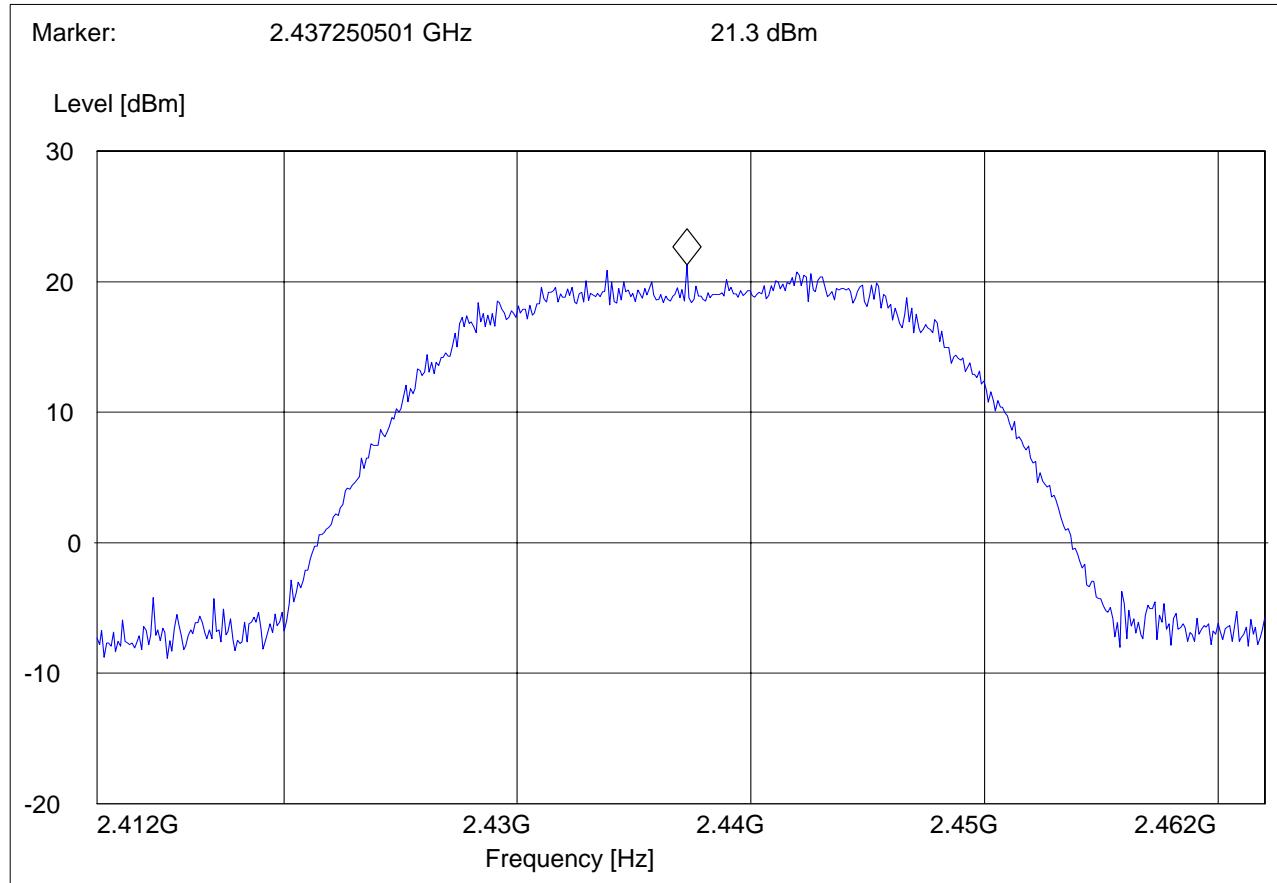


### EIRP MIDDLE CHANNEL- 802.11g

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

#### ***SWEET TABLE: "EIRP RLAN CH6"***

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

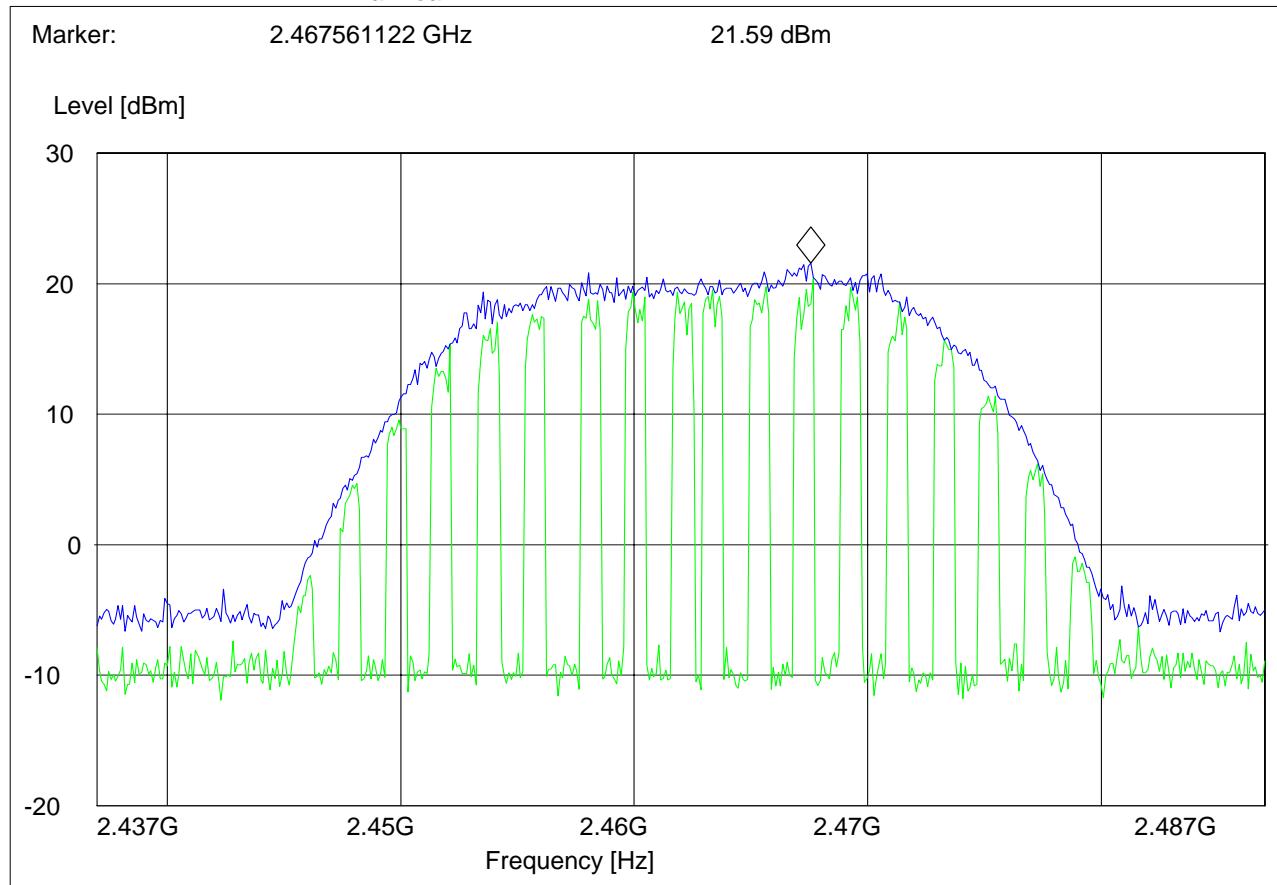


## EIRP HIGH CHANNEL- 802.11g

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

### ***SWEET TABLE: "EIRP RLAN CH11"***

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



## 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
<sup>1</sup> 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	( <sup>2</sup> )
13.36 - 13.41			

\*PEAK LIMIT= 74dB<sub>UV</sub>/m

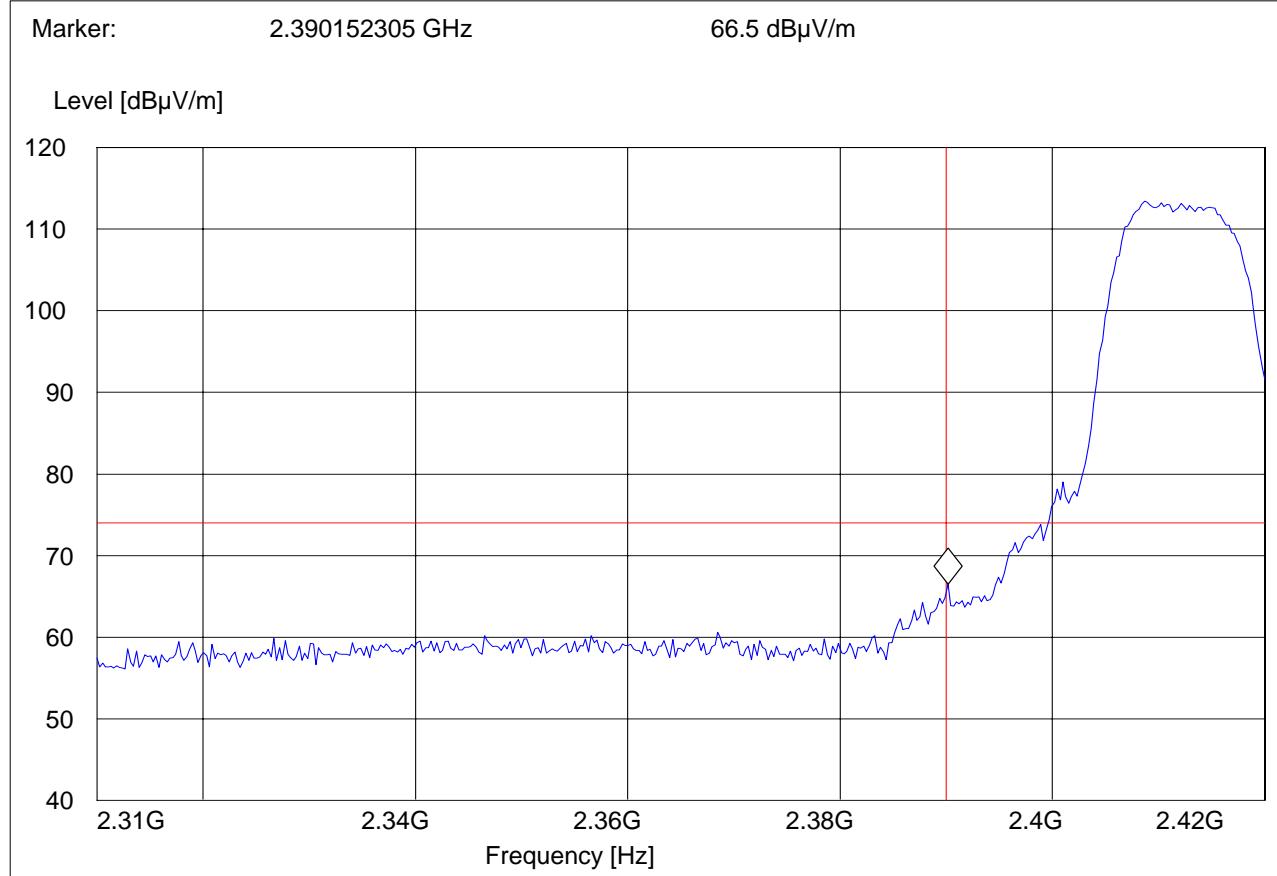
\*AVG. LIMIT= 54dB<sub>UV</sub>/m

## 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.	IF	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Time Coupled	1 MHz	#326horn_AF_vert



**(2412MHz) LOWER BAND EDGE AVERAGE -802.11b**

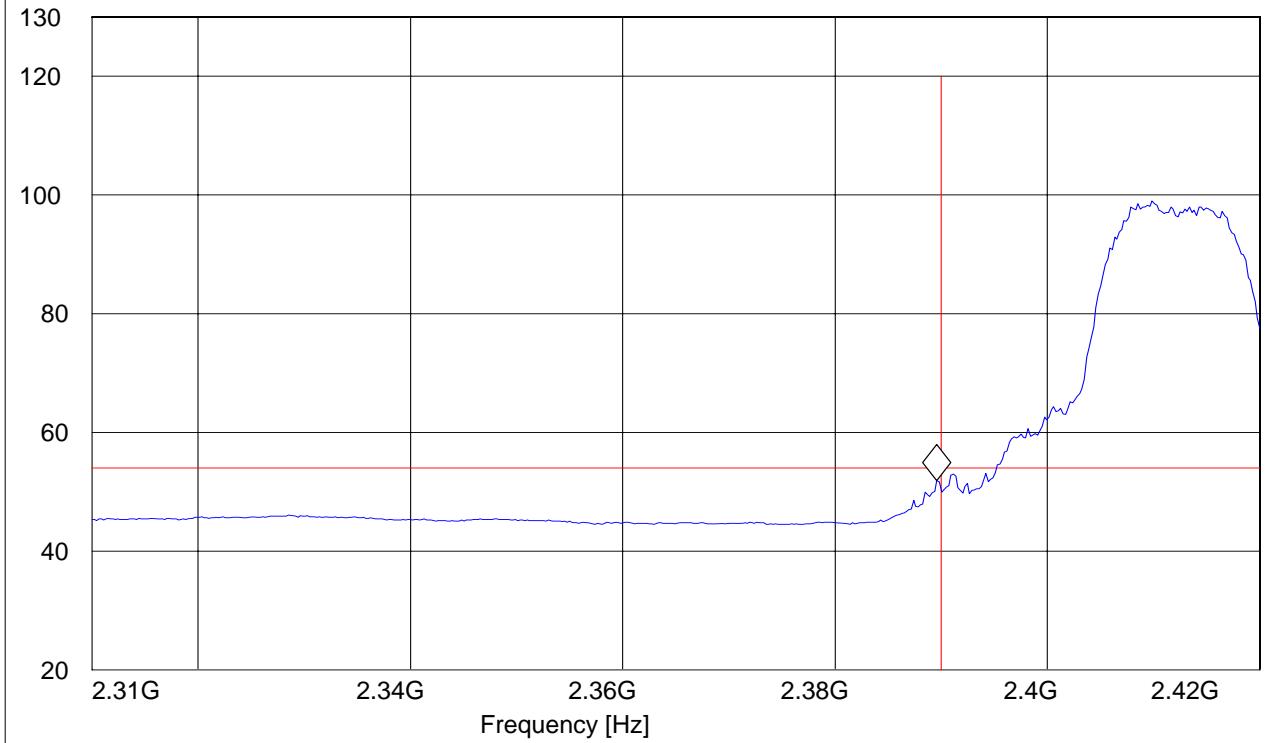
EUT: VX6  
Customer:: LXE  
Test Mode: WLAN 802.11B  
ANT Orientation: V  
EUT Orientation: V  
Test Engineer: Peter  
Voltage: AC ADAPTOR  
Comments: TT302°

***SWEET 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 dB $\mu$ V/m

Level [dB $\mu$ V/m]



**(2462MHz) HIGHER BAND EDGE PEAK -802.11b**

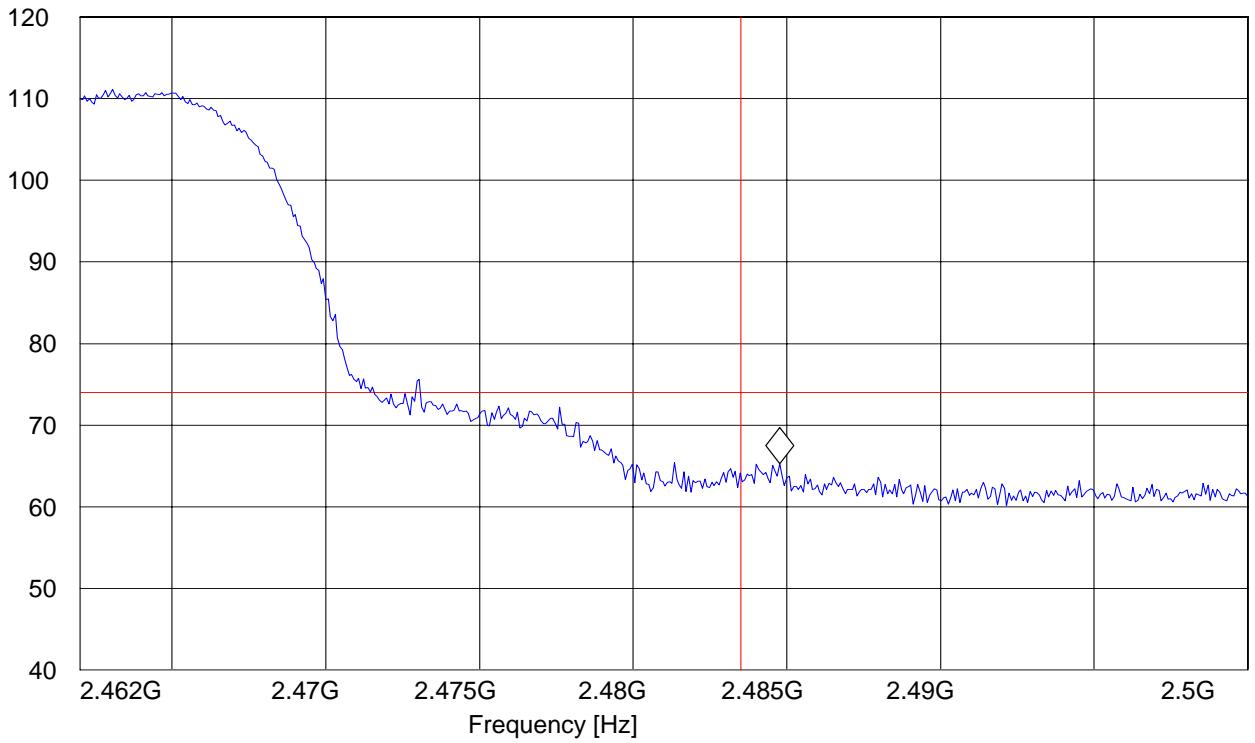
EUT: VX6  
Customer:: LXE  
Test Mode: WLAN 802.11B  
ANT Orientation: V  
EUT Orientation: V  
Test Engineer: Peter  
Voltage: AC ADAPTOR  
Comments: TT302°

***SWEET 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 dB $\mu$ V/m

Level [dB $\mu$ V/m]



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

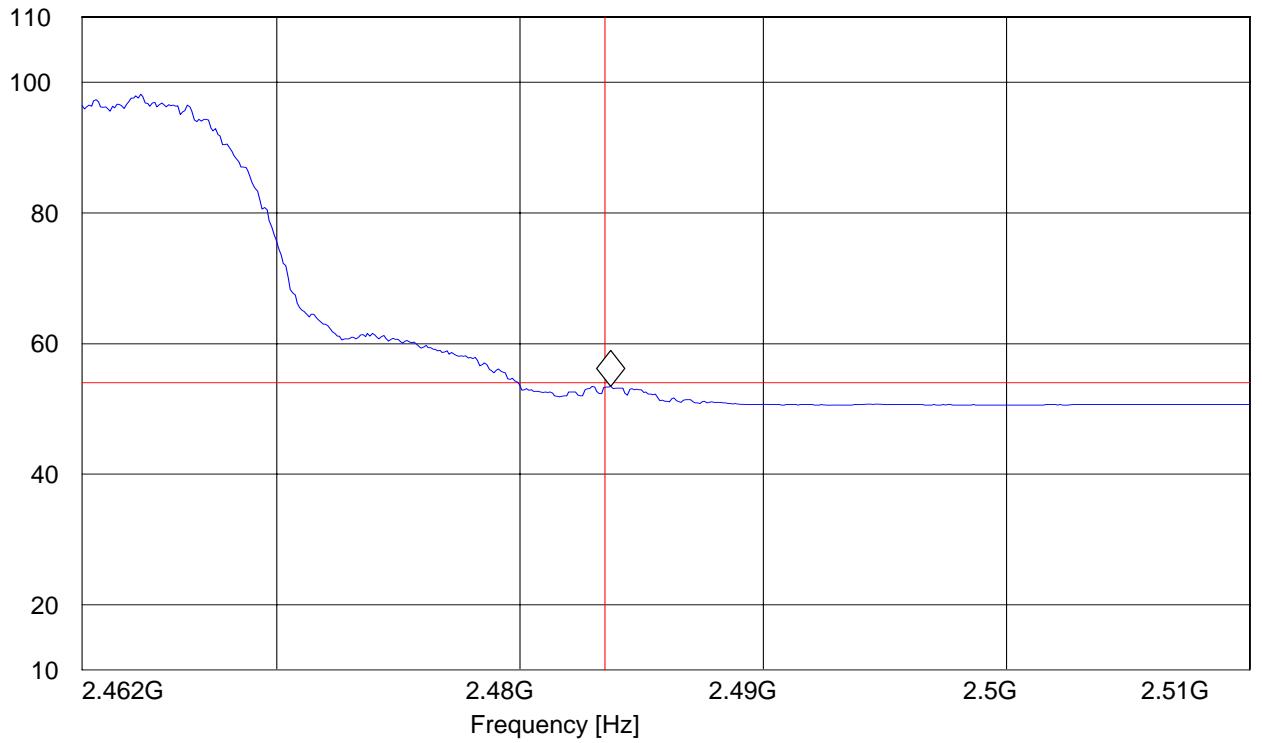
EUT: VX6  
Customer:: LXE  
Test Mode: WLAN 802.11B  
ANT Orientation: V  
EUT Orientation: V  
Test Engineer: Peter  
Voltage: AC ADAPTOR  
Comments: TT302°

***SWEET 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 dB $\mu$ V/m

Level [dB $\mu$ V/m]

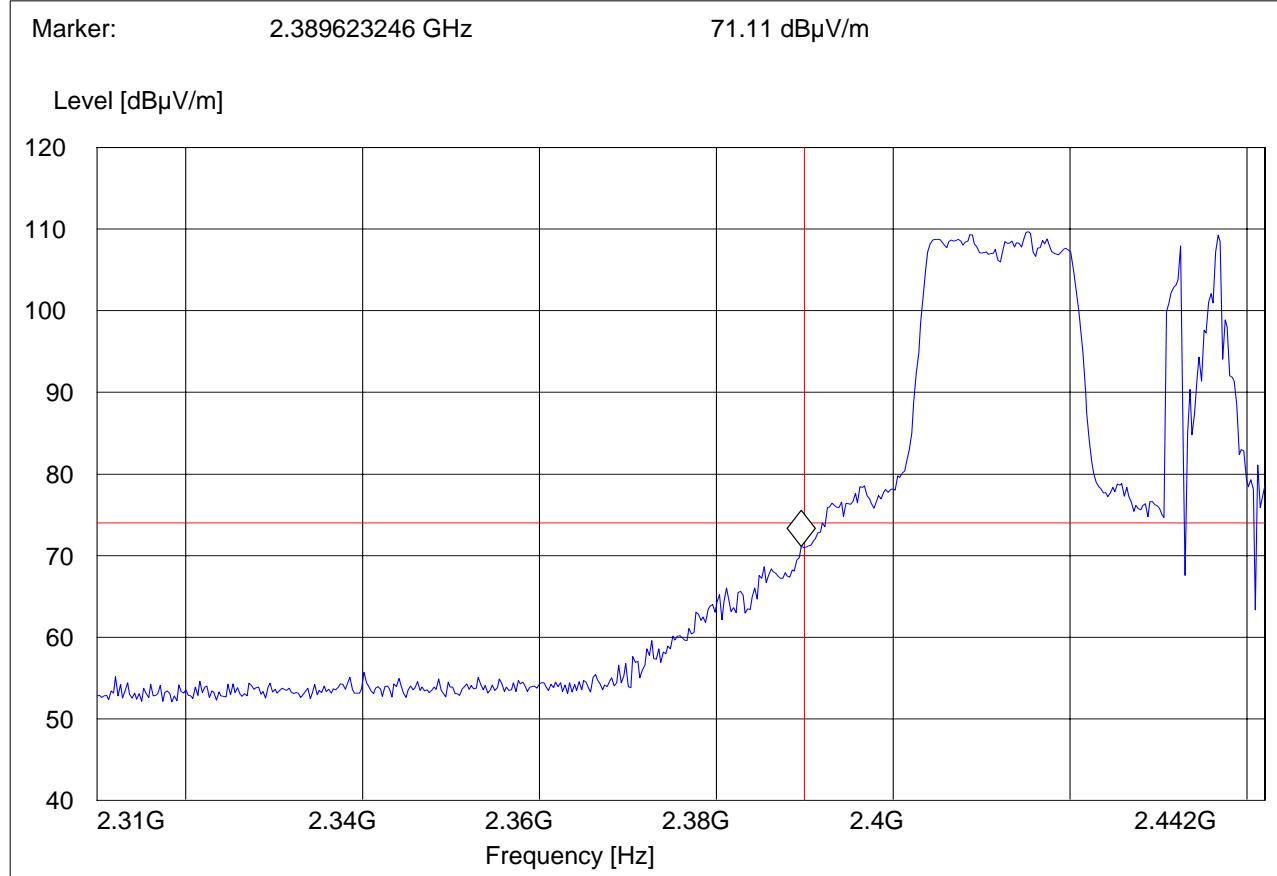


### 5.2.3 RESULTS: 802.11g (2412MHz) LOWER BAND EDGE PEAK – 802.11g

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.	IF Time	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



**(2412MHz) LOWER BAND EDGE AVERAGE - 802.11g**

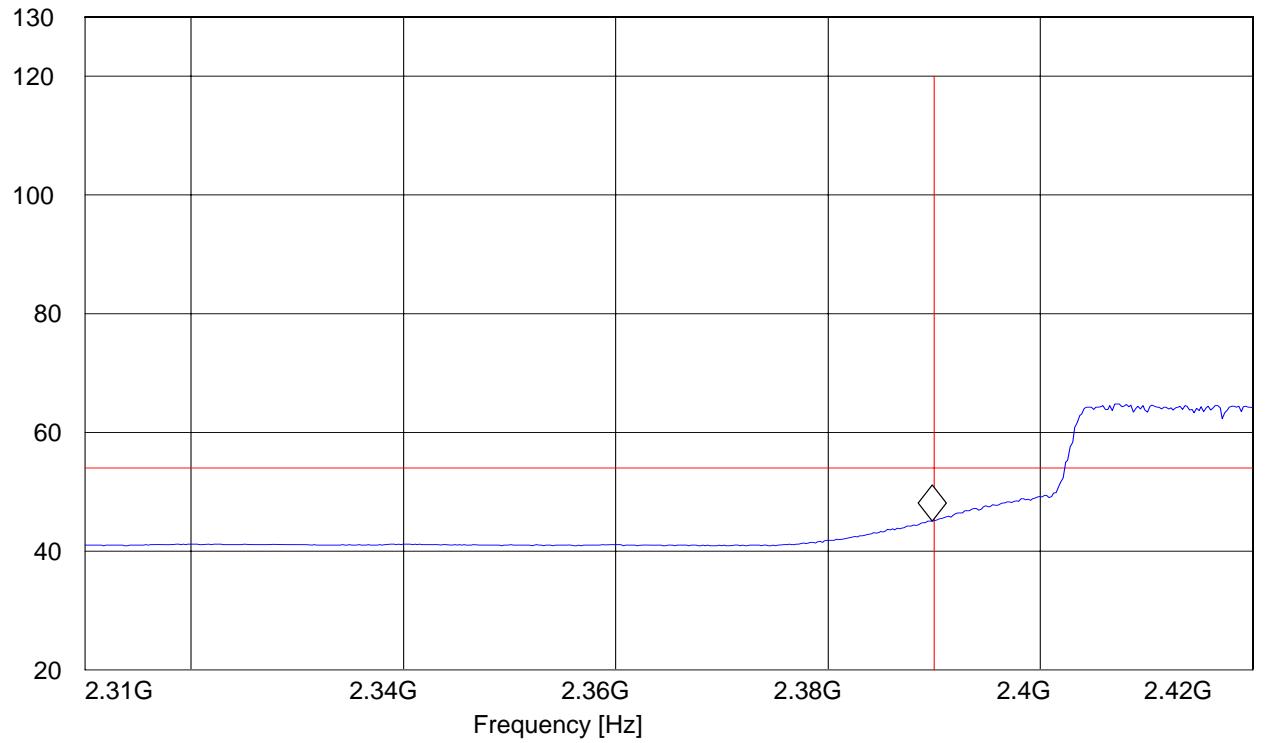
EUT: VX6  
Customer:: LXE  
Test Mode: WLAN 802.11G  
ANT Orientation: V  
EUT Orientation: V  
Test Engineer: Peter  
Voltage: AC ADAPTOR  
Comments: TT302°

***SWEET 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 dB $\mu$ V/m

Level [dB $\mu$ V/m]



**(2462MHz) HIGHER BAND EDGE PEAK – 802.11g**

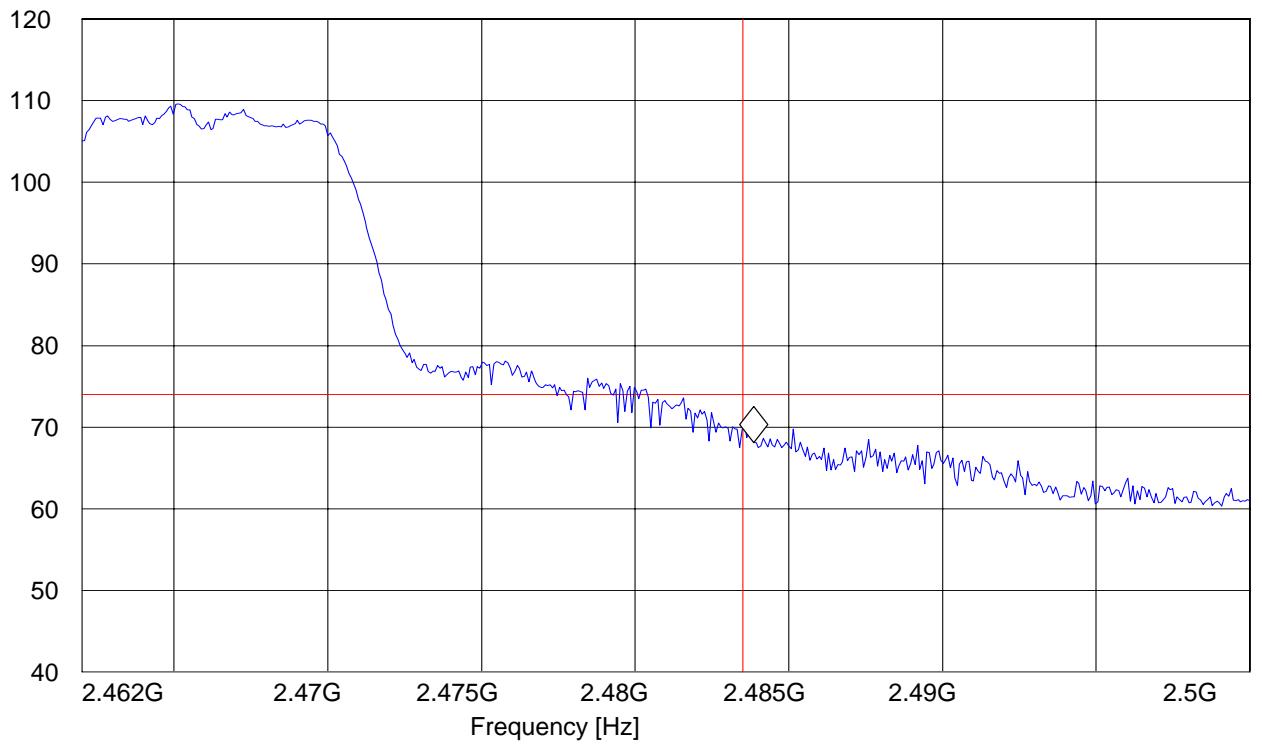
EUT: VX6  
Customer:: LXE  
Test Mode: WLAN 802.11G  
ANT Orientation: V  
EUT Orientation: V  
Test Engineer: Peter  
Voltage: AC ADAPTOR  
Comments: TT302°

***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 dB $\mu$ V/m

Level [dB $\mu$ V/m]



**(2462MHz) HIGHER BAND EDGE AVERAGE- 802.11g**

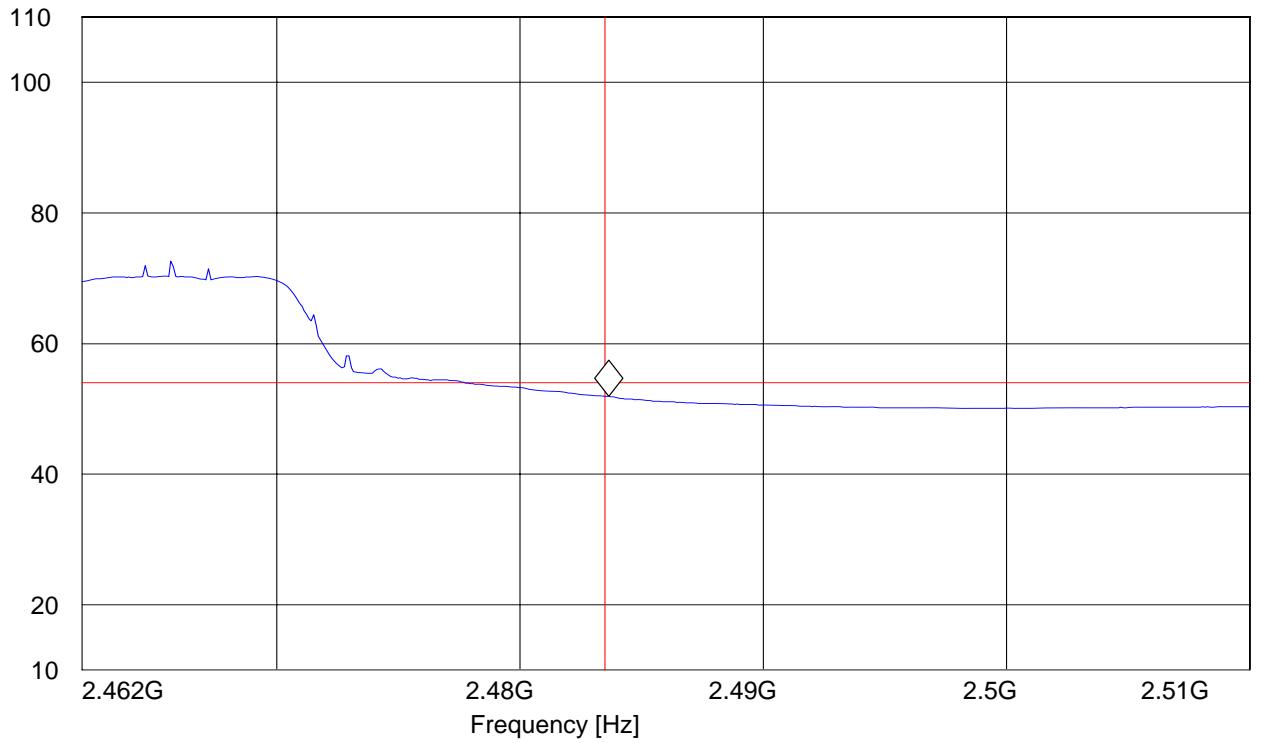
EUT: VX6  
Customer:: LXE  
Test Mode: WLAN 802.11G  
ANT Orientation: V  
EUT Orientation: V  
Test Engineer: Peter  
Voltage: AC ADAPTOR  
Comments: TT302°

***SWEET 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 dB $\mu$ V/m

Level [dB $\mu$ V/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
<sup>1</sup> 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	( <sup>2</sup> )
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  $95.64\text{dBuV/m}$ .

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

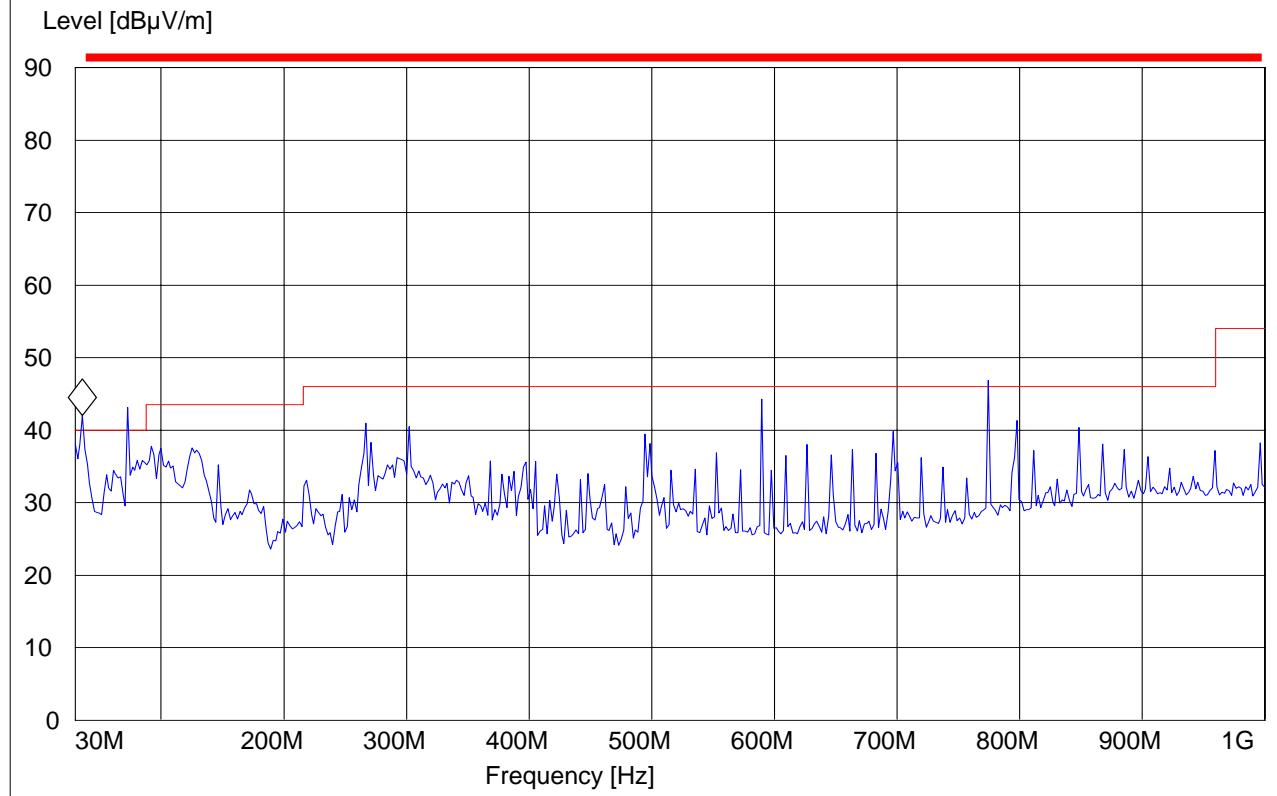
### Antenna: vertical

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

#### ***SWEET TABLE: "FCC15.247\_30M-1G\_Ver"***

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

Marker: 35.831663 MHz 42.05 dB $\mu$ V/m **Intentional Radiator Limit**



#### QUASIPeAK MEASUREMENTS:

35.831663MHz: 37.05dB $\mu$ V/m

72.765531MHz: 38.14dB $\mu$ V/m

774.50901MHz: 41.58dB $\mu$ V/m

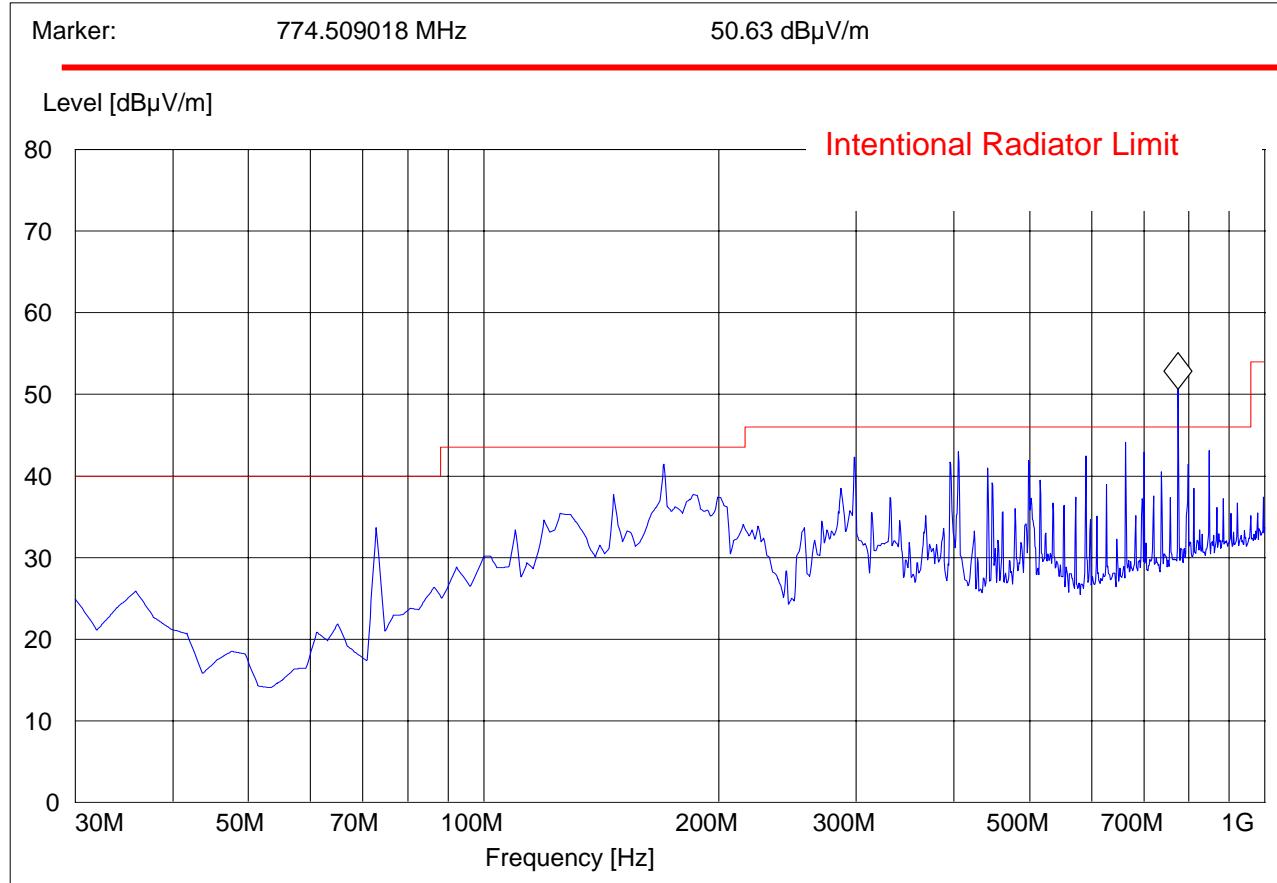
## 30MHz – 1GHz

### Antenna: horizontal

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

#### ***SWEET TABLE: "FCC15.247\_30M-1G\_Hor"***

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



### QUASIEAK MEASUREMENT

774.50901MHZ: 45.48 dB $\mu$ V/m

### 1-3GHz (2412MHz)

**Note: The peak above the limit line is the carrier freq.**

**Note: Peak Reading vs. Average limit**

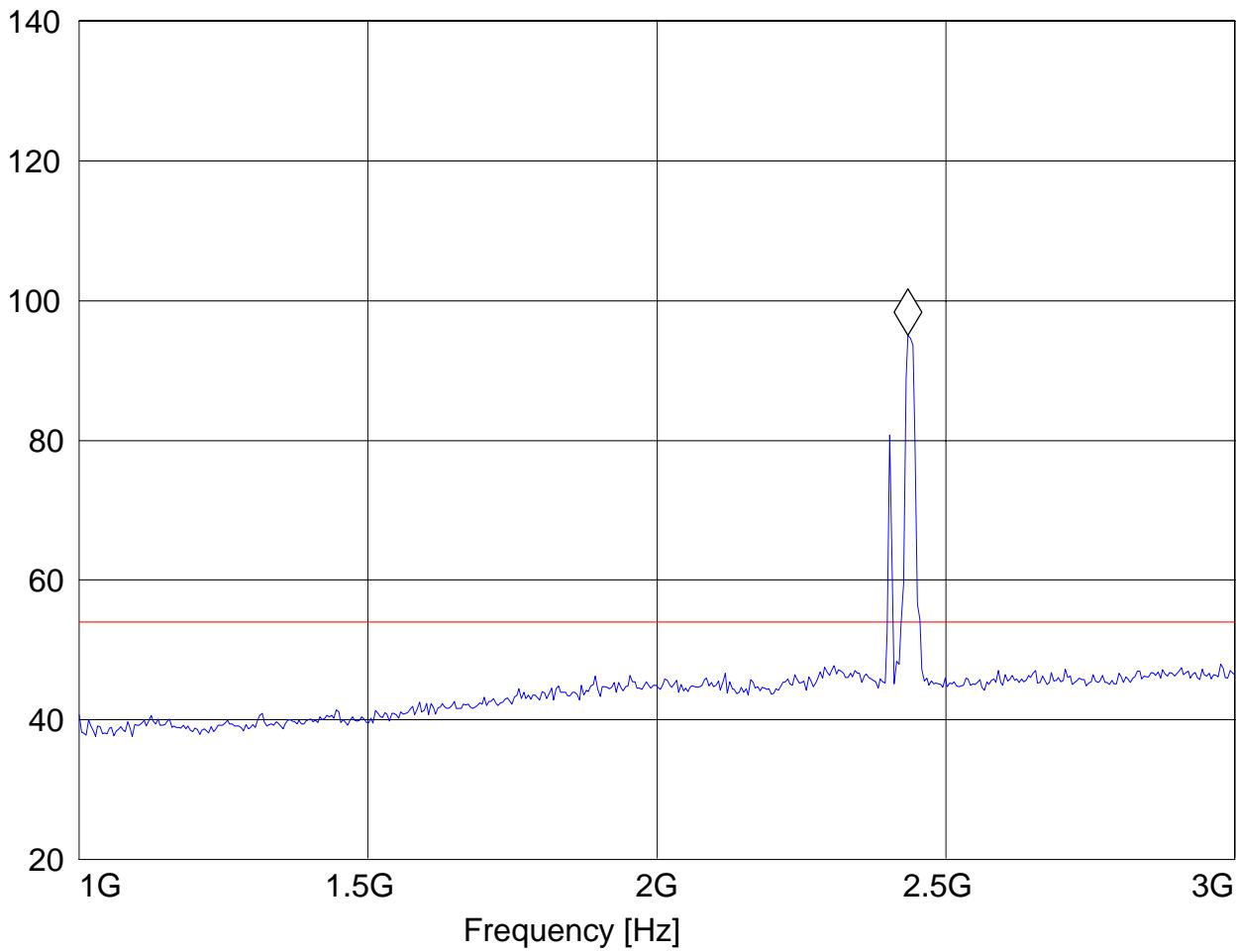
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: PETER MU  
Power Supply: BATTERY  
Comments: MARKER PLACED ON WLAN CH 6; UNMARKED PEAK IS BT GFSK CH0

#### ***SWEET TABLE: "FCC15.247\_1-3G"***

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

Marker: 2.434869739 GHz 95.04 dB $\mu$ V/m

Level [dB $\mu$ V/m]



### 1-3GHz (2437MHz)

**Note: The peaks above the limit line is the carrier freq.**

**Note: Peak Reading vs. Average limit**

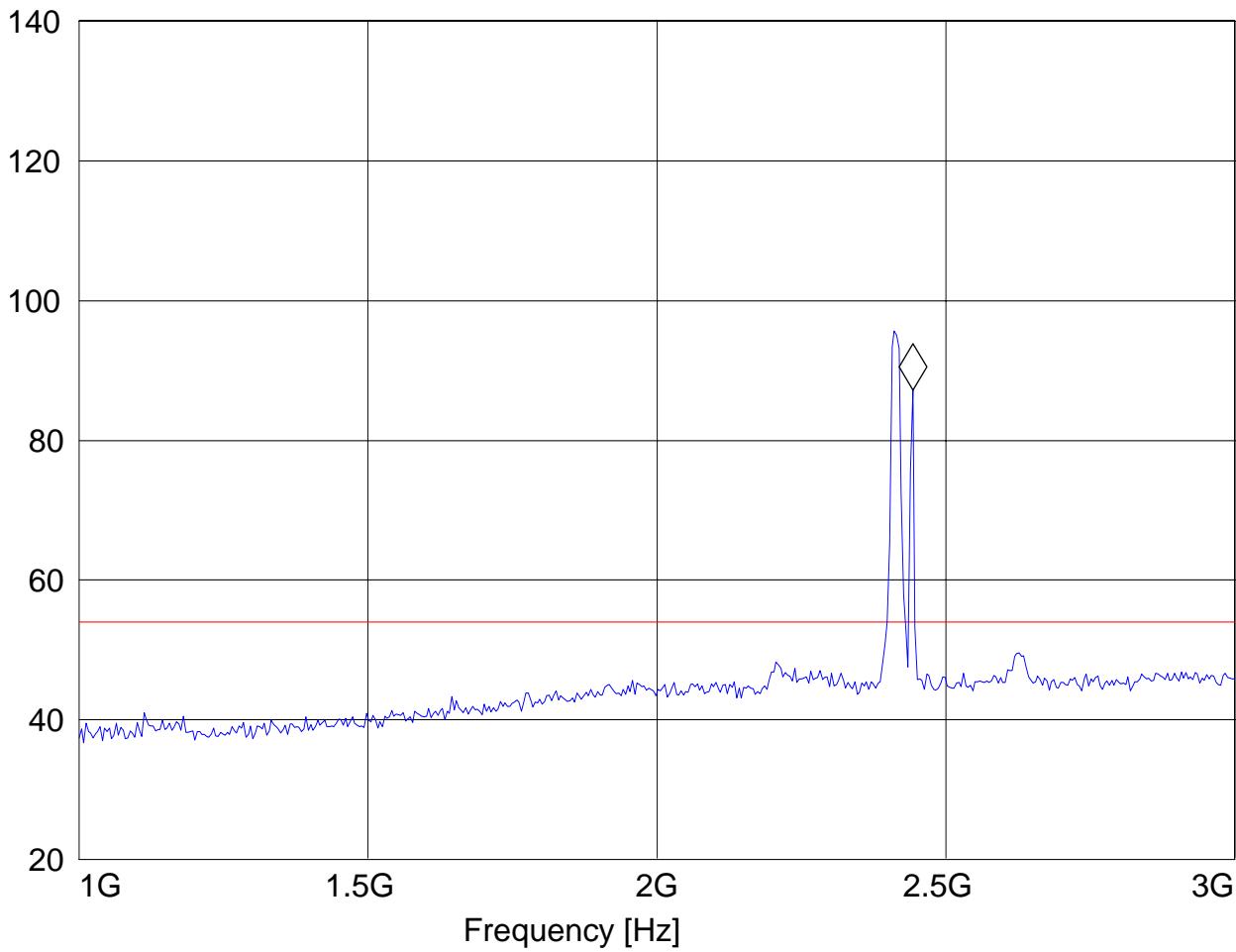
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: SAM  
Power Supply: BATTERY  
Comments: UNMARKED PEAK IS WLAN CH 1; PEAK MARKED IS BT GFSK CH39

#### ***SWEEP TABLE: "FCC15.247\_1-3G"***

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

Marker: 2.442885772 GHz 87.23 dB $\mu$ V/m

Level [dB $\mu$ V/m]



**1-3GHz (2462MHz)**

**Note: The peaks above the limit line is the carrier freq.**

**Note: Peak Reading vs. Average limit**

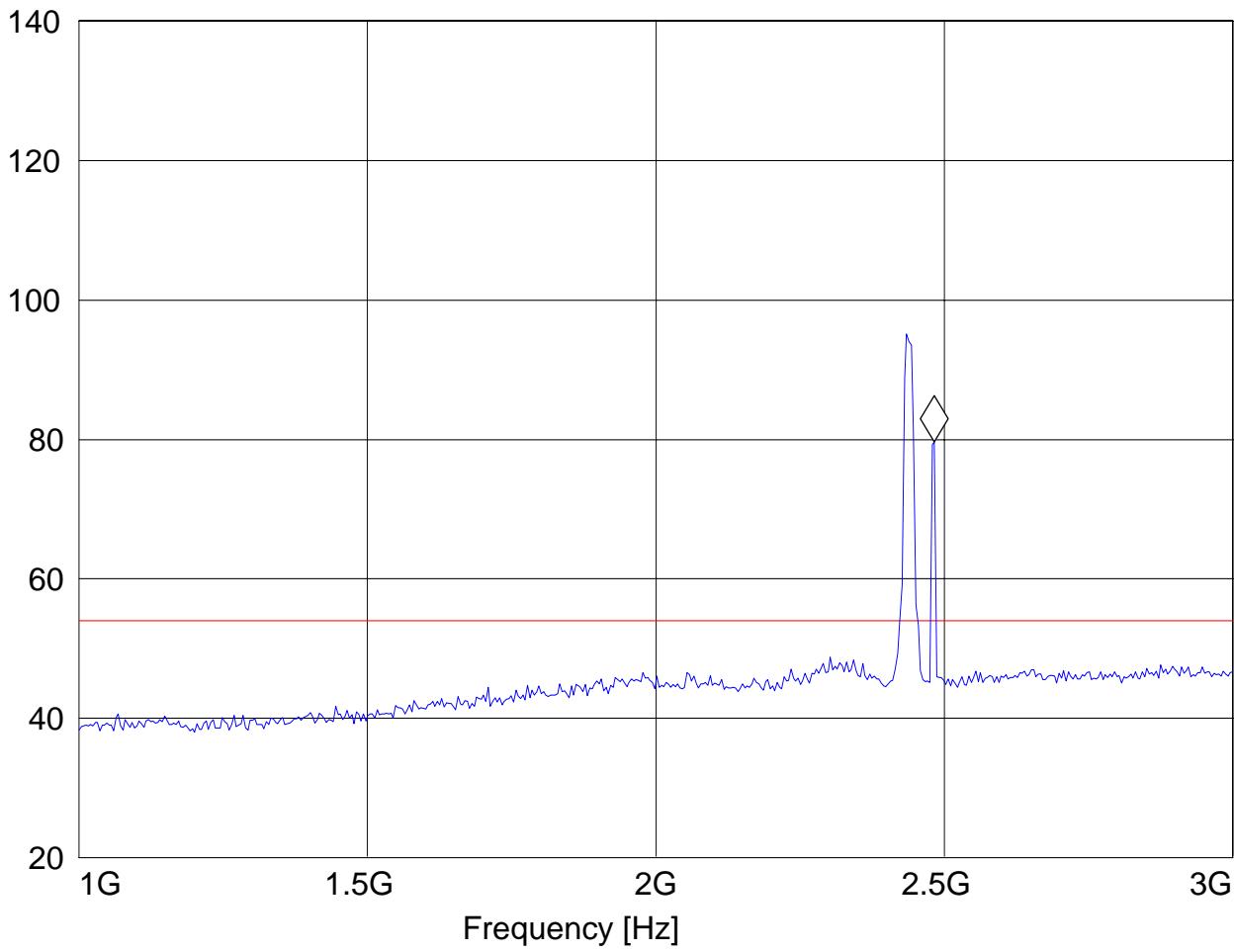
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: PETER MU  
Power Supply: BATTERY  
Comments: UNMARKED PEAK IS WLAN CH 6; PEAK MARKED IS BT GFSK CH78

***SWEET TABLE: "FCC15.247\_1-3G"***

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

Marker: 2.482965932 GHz 79.7 dB $\mu$ V/m

Level [dB $\mu$ V/m]



### 3-18GHz (2412MHz)

#### Note: Peak Reading vs. Average limit

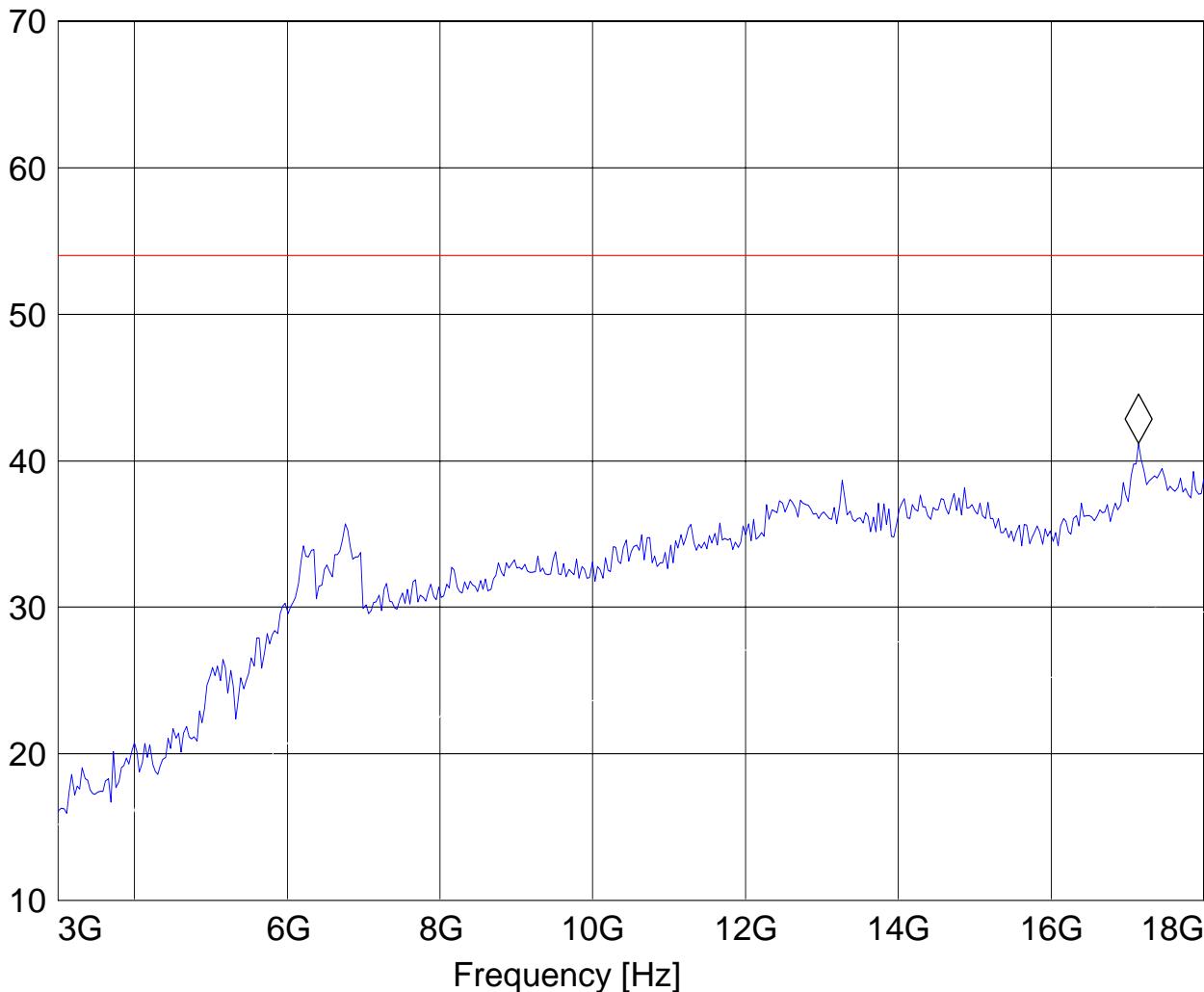
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: PETER MU  
Power Supply: BATTERY  
Comments:

#### ***SWEET TABLE: "FCC15.247\_3-18G"***

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

Marker: 17.148296593 GHz 41.19 dB $\mu$ V/m

Level [dB $\mu$ V/m]



### 3-18GHz (2437MHz)

#### Note: Peak Reading vs. Average limit

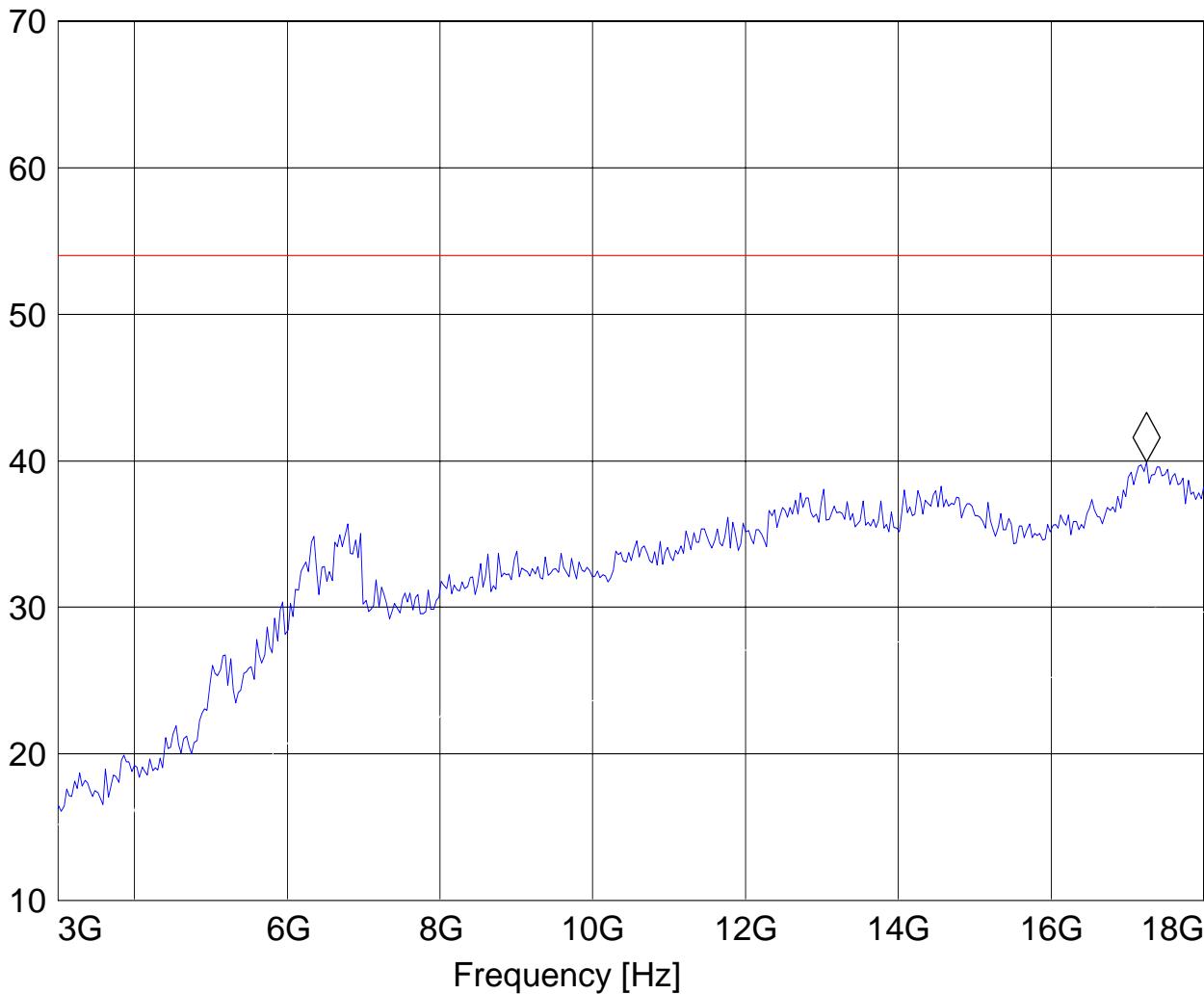
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: SAM  
Power Supply: BATTERY  
Comments:

#### ***SWEEP TABLE: "FCC15.247\_3-18G"***

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

Marker: 17.250501002 GHz 39.91 dB $\mu$ V/m

Level [dB $\mu$ V/m]



### 3-18GHz (2462MHz)

#### Note: Peak Reading vs. Average limit

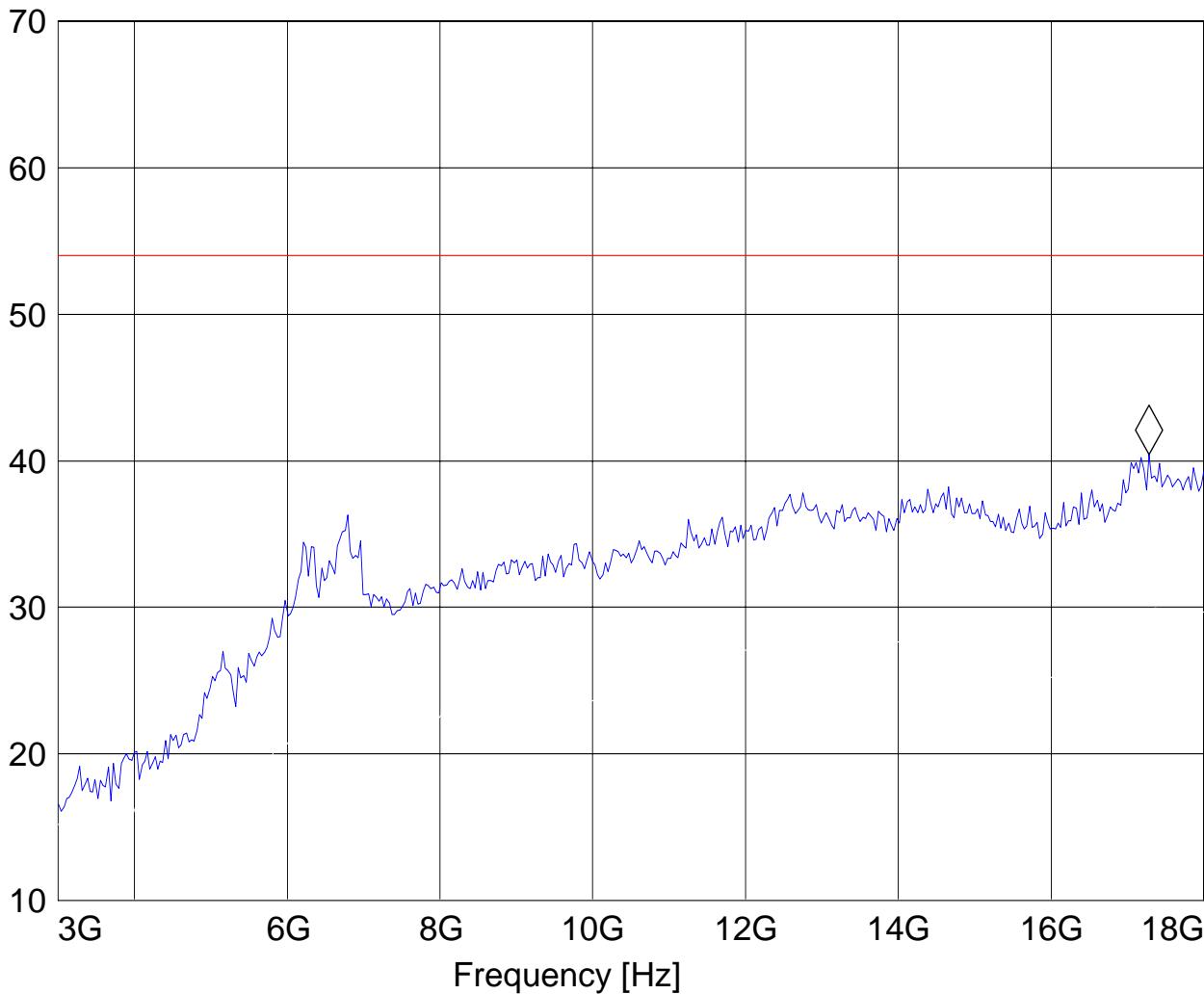
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: PETER MU  
Power Supply: BATTERY  
Comments:

#### ***SWEEP TABLE: "FCC15.247\_3-18G"***

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

Marker: 17.284569138 GHz 40.42 dB $\mu$ V/m

Level [dB $\mu$ V/m]



## 18-25GHz

**Note: This plot is valid for low, mid, high channels (worst-case plot)**

**Note: Peak Reading vs. Average limit**

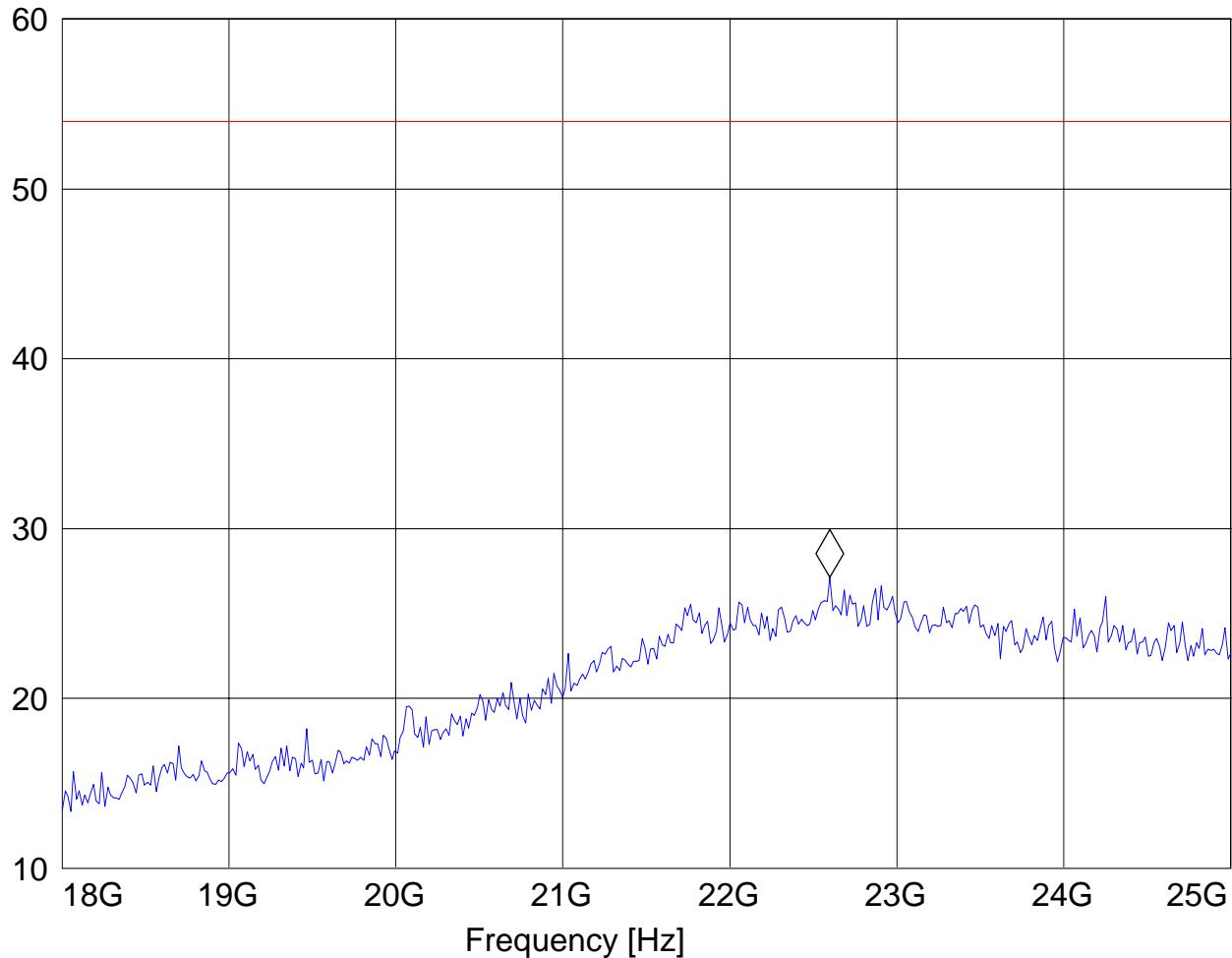
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: PETER MU  
Power Supply: BATTERY  
Comments:

### ***SWEET TABLE: "FCC15.247\_18-26.5G"***

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

Marker: 22.599198397 GHz 27.15 dB $\mu$ V/m

Level [dB $\mu$ V/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.

<b>Limits</b>		
<b>SUBCLAUSE § RSS-133</b>		
<b>Frequency (MHz)</b>	<b>Field strength (<math>\mu</math>V/m)</b>	<b>Measurement distance (m)</b>
<b>0.009 - 0.490</b>	<b>2400/F (kHz)</b>	<b>300</b>
<b>0.490 - 1.705</b>	<b>24000/F (kHz)</b>	<b>30</b>
<b>1.705 - 30.0</b>	<b>30</b>	<b>30</b>
<b>30 - 88</b>	<b>100</b>	<b>3</b>
<b>88 - 216</b>	<b>150</b>	<b>3</b>
<b>216 - 960</b>	<b>200</b>	<b>3</b>
<b>Above 960</b>	<b>500</b>	<b>3</b>

## 30MHz – 1GHz

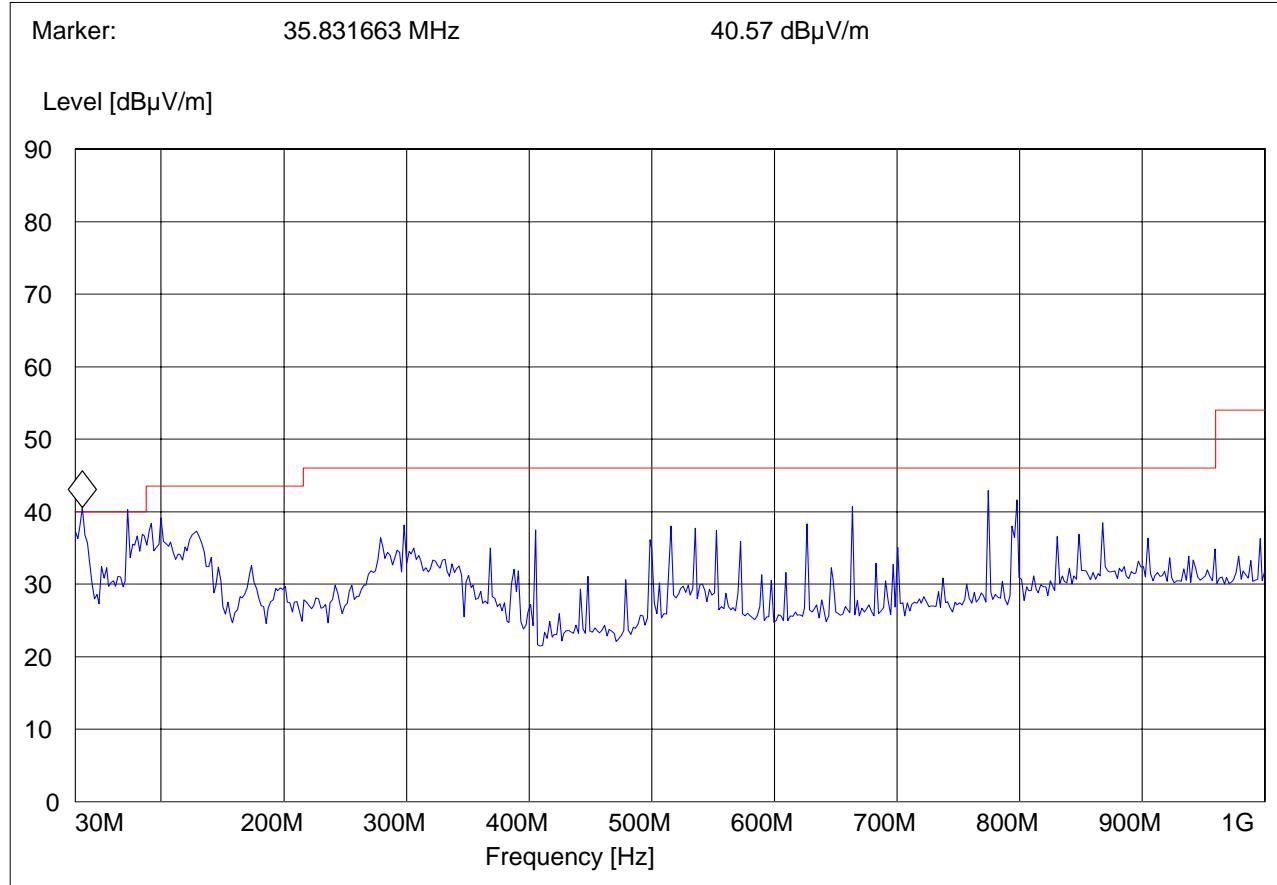
**Antenna: vertical**

**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:

### ***SWEET TABLE: "FCC15.247\_30M-1G\_Ver"***

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



### **QUASIEPEAK MEASUREMENTS:**

35.831663MHz: 37.05dB $\mu$ V/m

## 30MHz – 1GHz

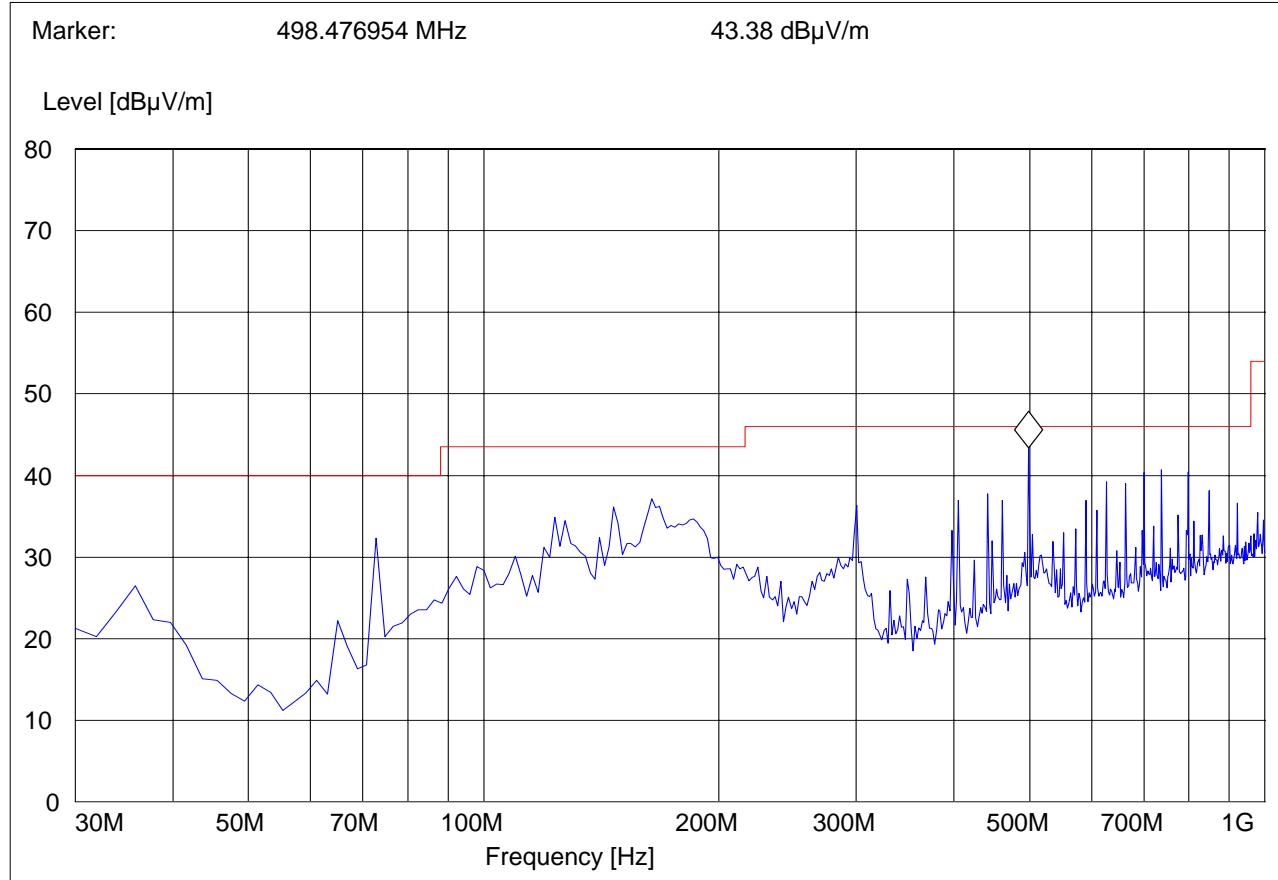
### Antenna: horizontal

**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:

#### ***SWEET TABLE: "FCC15.247\_30M-1G\_Hor"***

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



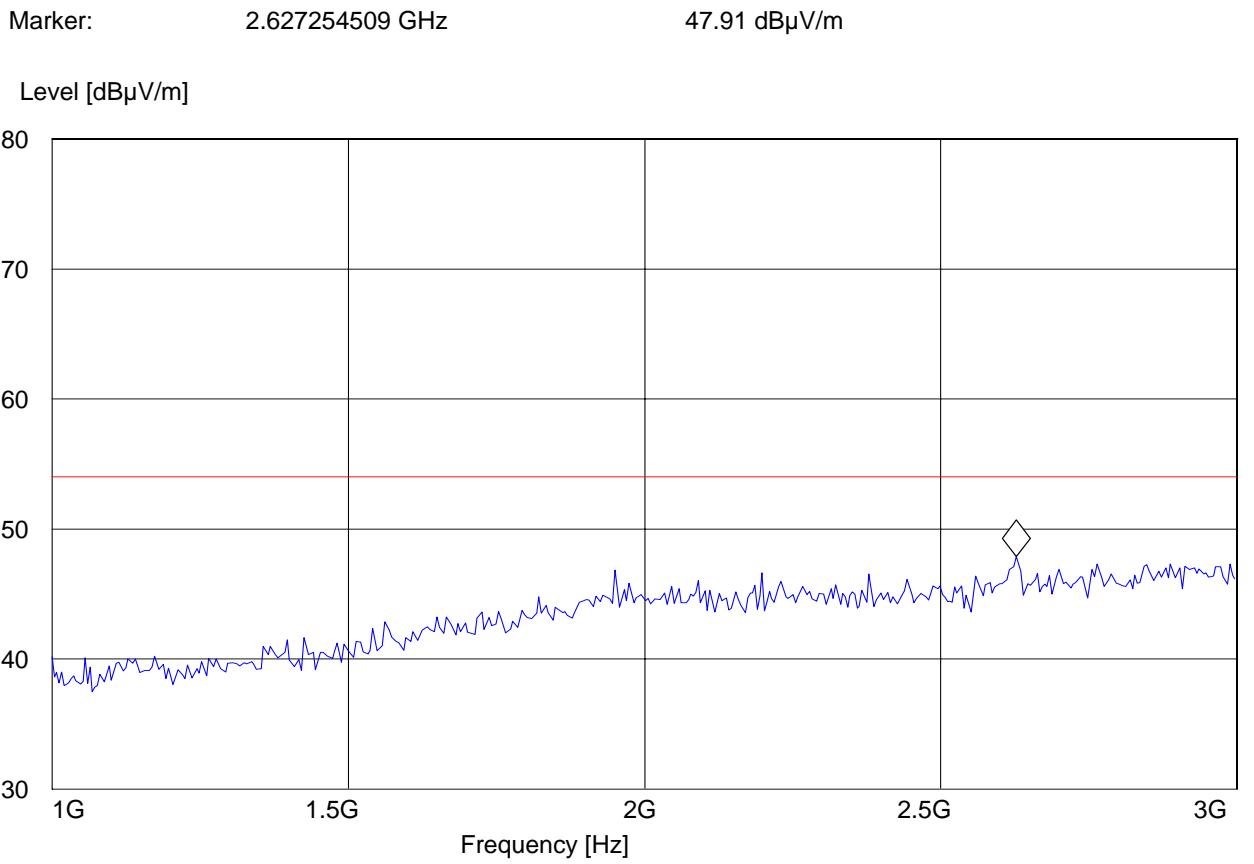
## 1-3GHz

### 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.	IF Time	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



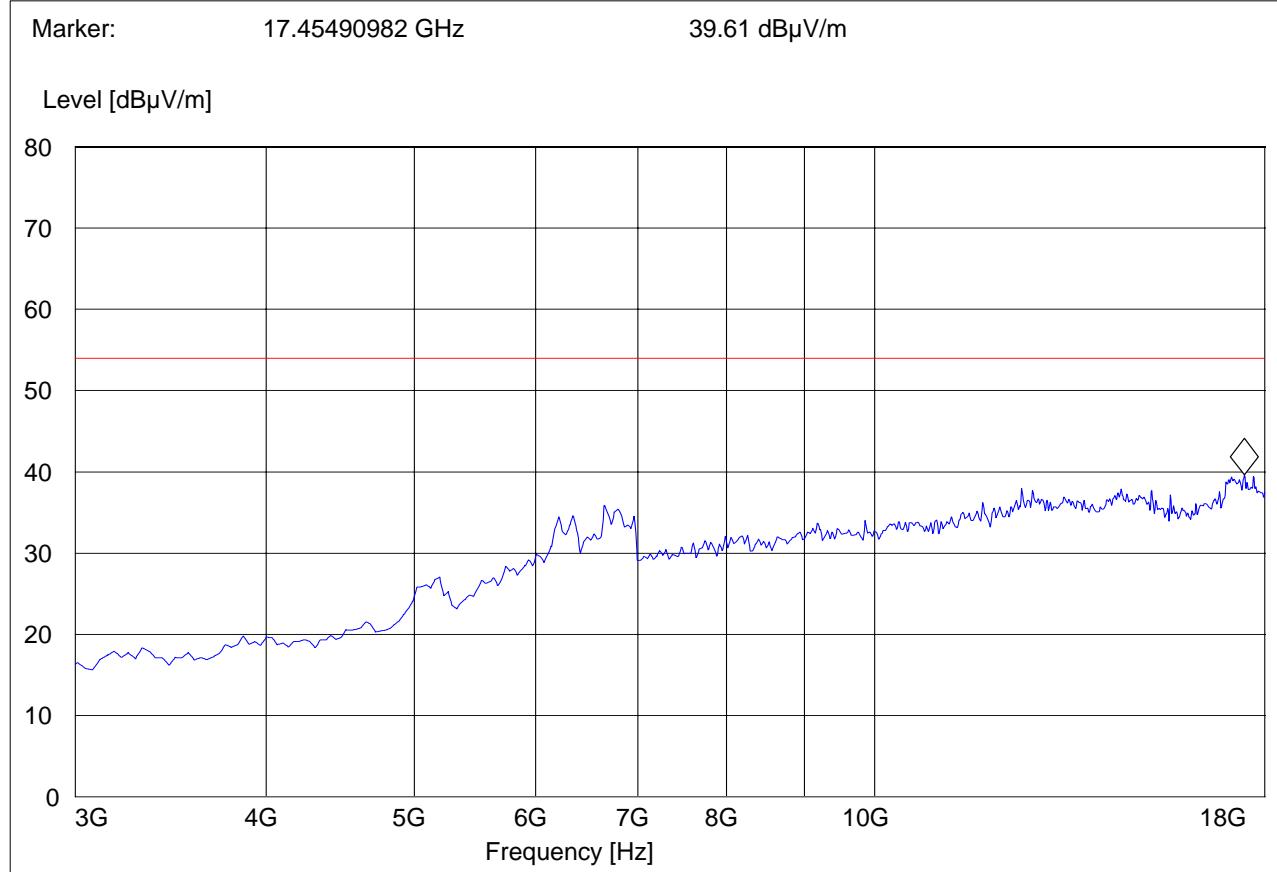
### 3-18GHz

#### 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.	IF	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Time Coupled	1 MHz	#326horn_AF_vert



### 3-18GHz

Note: Peak Reading vs. Average limit

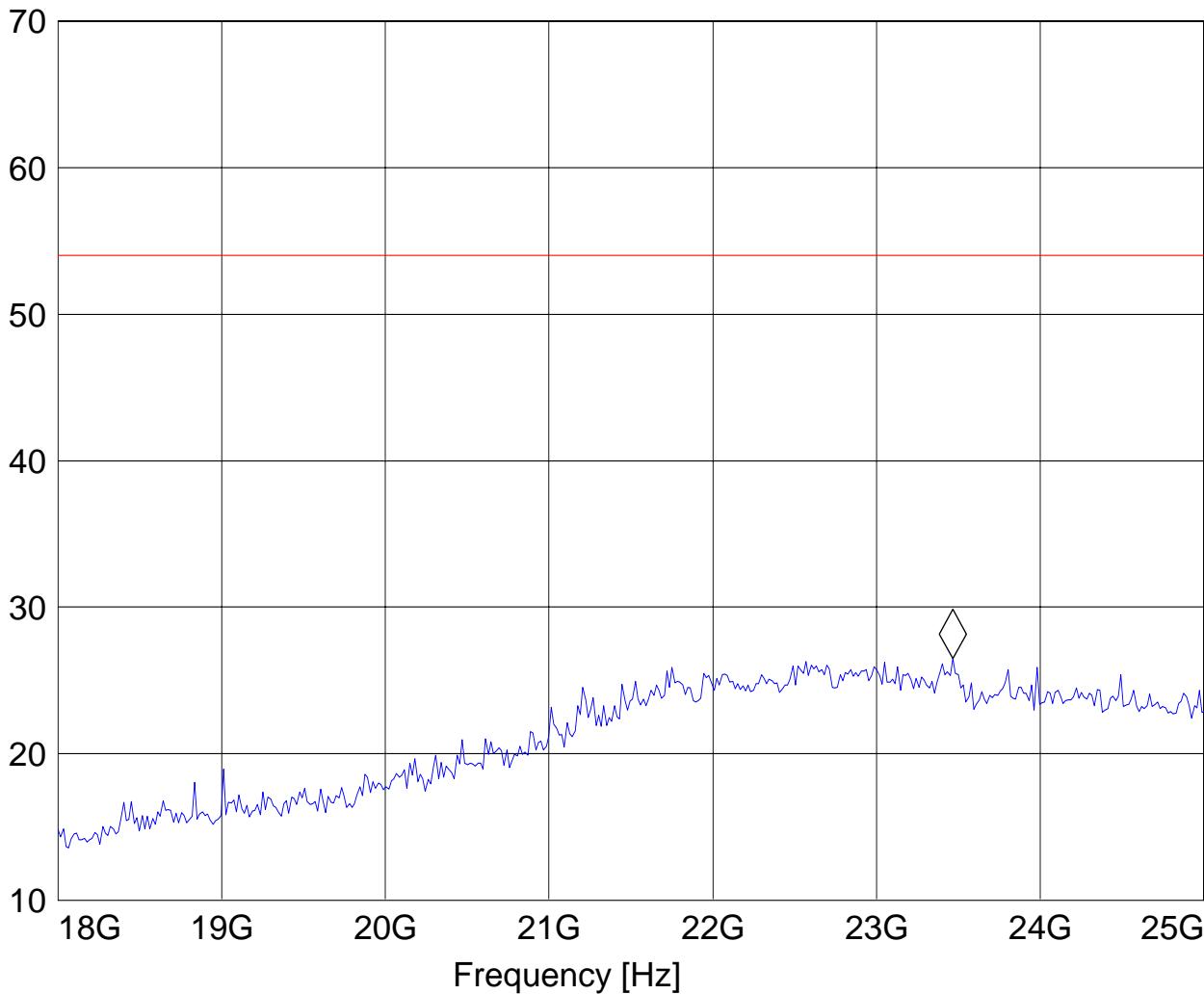
EUT: VX6  
Customer: LXE  
Test Mode: WLAN  
ANT Orientation: H  
EUT Orientation: V  
Test Engineer: SAM  
Power Supply: BATTERY  
Comments: STANDBY MODE

***SWEEP TABLE: "CANADA RE\_18-26.5G"***

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

Marker: 23.466933868 GHz 26.48 dB $\mu$ V/m

Level [dB $\mu$ V/m]



## **6 Measurements (Conducted)**

### **6.1 MAXIMUM PEAK OUTPUT POWER § 15.247 (CONDUCTED)**

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

<b>Frequency range</b>	<b>RF power output</b>
<b>2412-2462 MHz</b>	<b>30dBm</b>

\*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)**

<b>SEPARATION</b>
<b>&gt; 25 KHz or &gt; 20 dB BANDWIDTH</b>

#### **6.3.2 RESULTS:**

**Test not conducted.**

### **6.4 NUMBER OF HOPPING CHANNELS**

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

<b>NUMBER OF CHANNELS</b>
<b>&gt; 15</b>

#### **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)**

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

### **6.5.2 RESULTS:**

**Test not conducted.**

## **6.6 CONDUCTED SPURIOUS EMISSION**

### **6.6.1 LIMIT SUB CLAUSE § 15.247 (d)**

<b>FREQUENCY RANGE</b>	<b>limit</b>
<b>30M-25GHz</b>	<b>-20dBc</b>

### **6.6.2 RESULTS: $T_{nom}(23)^\circ\text{C}$ $V_{nom}\text{VDC}$**

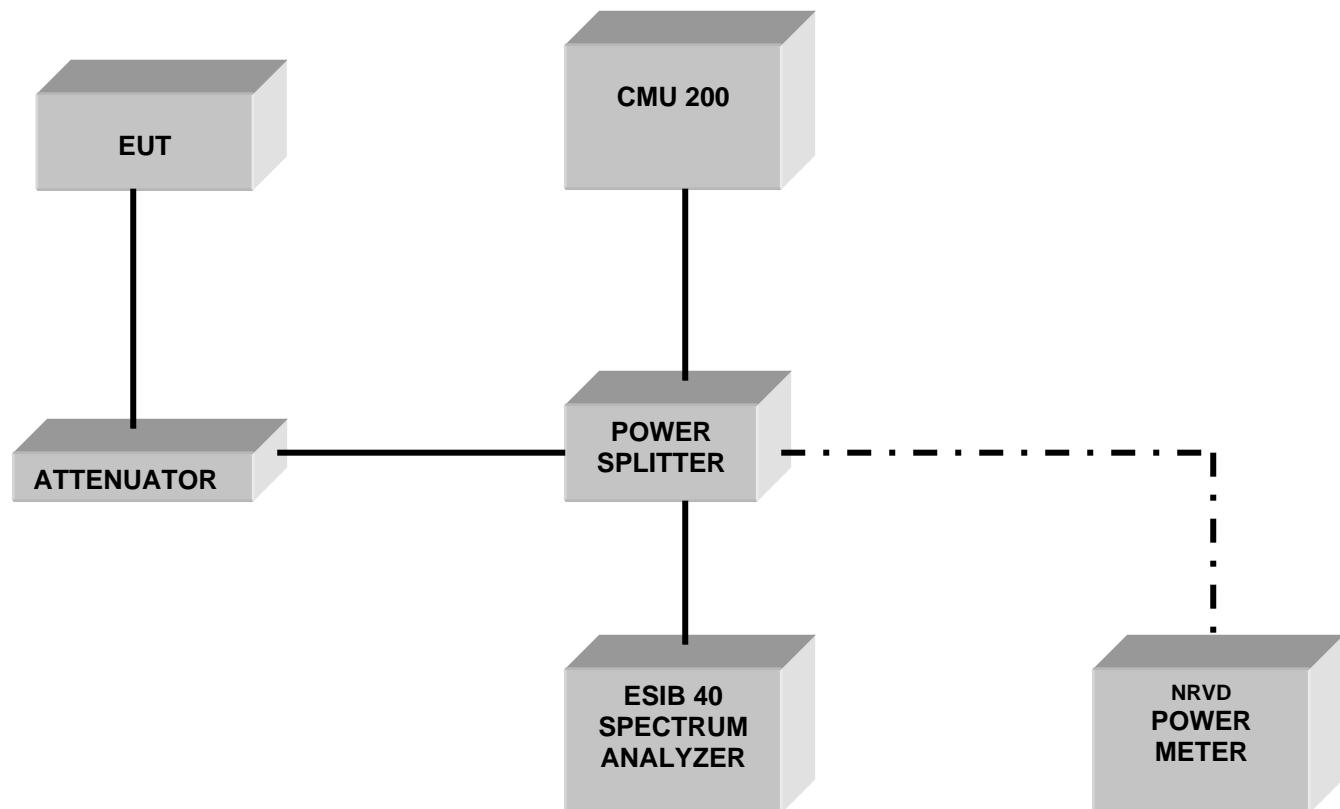
**Test not conducted.**

## **7 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS**

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal Due	Interval
<b>01</b>	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2008	1 year
<b>02</b>	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	100017	August 2008	1 year
<b>03</b>	Signal Generator	SMY02	Rohde & Schwarz	836878/011	May 2008	1 year
<b>04</b>	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02	May 2008	1 year
<b>05</b>	Biconilog Antenna	3141	EMCO	0005-1186	June 2008	1 year
<b>06</b>	Horn Antenna (1-18GHz)	SAS-200/571	AH Systems	325	June 2008	1 year
<b>07</b>	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240	June 2008	1 year
<b>08</b>	Power Splitter	11667B	Hewlett Packard	645348	n/a	n/a
<b>09</b>	Climatic Chamber	VT4004	Voltsch	G11115	May 2008	1 year
<b>10</b>	High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a	n/a
<b>11</b>	High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a	n/a
<b>12</b>	Pre-Amplifier	JS4-00102600	Miteq	00616	May 2008	1 year
<b>13</b>	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807	May 2008	1 year
<b>14</b>	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008	May 2008	1 year
<b>15</b>	Universal Radio Comm. Tester	CMU 200	Rohde & Schwarz	832221/06	May 2008	1 year
<b>16</b>	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2008	1 year
<b>17</b>	Loop Antenna	6512	EMCO	00049838	July 2008	2 years

## 8 BLOCK DIAGRAMS

### Conducted Testing



## Radiated Testing

### ANECHOIC CHAMBER

