



# FCC Test Report

Test report no.: EMC\_799FCC15.247\_2004\_C2P\_PP07L

FCC Part 15.247 for DSSS systems / CANADA RSS-210

EUT: WLAN                      Model: BCM94318MPG  
HOST LAPTOP                  Model: PP07L  
FCC ID: QDS-BRCM1016  
IC ID: 4324A-BRCM1016



**TTI-P-G 081/94-A0**

Accredited according to **ISO/IEC 17025**



**Bluetooth Qualification  
Test Facility  
(BQTF)**



FCC listed # 101450

IC recognized # 3925

## **CETECOM Inc.**

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CETECOM Inc. is a Delaware Corporation with Corporation number: 2113686  
Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May

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<b>1</b>	<b>General information</b>
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The test results of this test report relate exclusively to the test item specified in 1.5. 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.

**TEST REPORT PREPARED BY:****EMC Engineer: Harpreet Sidhu**

**1.2 Testing laboratory**  
**CETECOM Inc.**  
**411 Dixon Landing Road, Milpitas, CA-95035, USA**  
**Phone: +1 408 586 6200 Fax: +1 408 586 6299**  
**E-mail: [lothar.schmidt@cetecomusa.com](mailto:lothar.schmidt@cetecomusa.com)**  
**Internet: [www.cetecom.com](http://www.cetecom.com)**

**1.3 Details of applicant**

**Name** : **Broadcom corporation**  
**Street** : **190 Mathilda Place**  
**City / Zip Code** : **Sunnyvale, CA 94086**  
**Country** : **USA**  
**Contact** : **Daniel Lawless**  
**Telephone** : **408-922-5870**  
**Tele-fax** : **408-543-3399**  
**e-mail** : [dlawless@broadcom.com](mailto:dlawless@broadcom.com)

**1.4 Application details**

Date of receipt test item : 2005-03-10  
Date of test : 2005-03-10/11

**1.5 Test item**

Manufacturer : Applicant  
Model No. : BCM94318MPG  
Host : Dell Laptop Model# PP07L, s/n 07899029300023  
Description : Broadcom 802.11g mini PCI card  
FCC ID : QDS-BRCM1016  
IC ID : 4324A-BRCM1016

**Additional information**

Frequency : 2412MHz – 2462MHz  
Type of modulation : DSSS / OFDM (orthogonal frequency division multiplexing)  
Number of channels : 11  
Antenna : 2.2dBi max. gain PCB ant. for 2.4GHz band  
Power supply : 3.3 VDC from Host  
Output power : 28.95dBm (785.24mW) conducted peak power  
Extreme temp. Tolerance : 0°C to +70°C

**1.6 Test standards:** **FCC Part 15 §15.247 / CANADA RSS-210**

**PROJECT OVERVIEW:**

This test report carries all radiated measurements required as per FCC 15.247 on WLAN mini PCI card model# BCM94318MPG tested in host Dell laptop model# PP07L. For all conducted measurements please refer to test report# *EMC\_799FCC15.247\_2004\_BCM94318MPG\_rev1*

All measurements are done with 2.2dBi max. gain antenna. WLAN was tested for spurious emissions in both DSSS & OFDM modes at different data rates (1, 2, 5.5, 6, 11, and 54) to ensure compliance of the whole device. Test report shows only worst-case test results of all data rates with following power levels.

802.11g mode: 16.5dBm

802.11b mode: 18dBm

For more information on antennas and host platforms covered under this C2P change please refer to *BCM94318MPAGH\_C2P\_Declaration\_worst\_case\_platform*

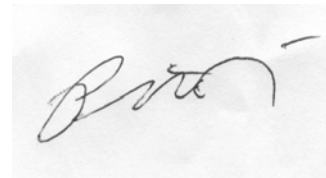
**2 Technical test****2.1 Summary of test results**

No deviations from the technical specification(s) were ascertained in the course of the tests  
Performed

Final Verdict:  
(Only "passed" if all single measurements are "passed")

**Passed**

Technical responsibility for area of testing:



2005-03-29 EMC & Radio Pete Krebill (EMC Engineer)

Date

Section

Name

Signature

Responsible for test report and project leader:



2005-03-29 EMC & Radio Harpreet Sidhu (EMC Engineer)

Date

Section

Name

Signature

## 2.2 Test report

### TEST REPORT

Test report no.: EMC\_799FCC15.247\_2004\_C2P\_PP07L

**TEST REPORT REFERENCE****LIST OF MEASUREMENTS****PAGE**

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**MAXIMUM PEAK OUTPUT POWER  
(Conducted)****§ 15.247 (b) (1)**

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)			
Frequency (MHz)		2412	2437	2462	
T <sub>nom</sub> (23)°C	V <sub>nom</sub> (3.3) VDC	Pk	28.59	28.95	28.57
Measurement uncertainty		±0.5dBm			

RBW / VBW: 10MHz

\*To comply with following;

RBW / VBW should be equal to or greater than the 6dB BW

All measured values are corrected by 10log 6dB BW / used BW

(Therefore correction factor of 2.18, 2.16 &amp; 2.16 is added to low, mid&amp; high channel measurements respectively)

**LIMIT****SUBCLAUSE § 15.247 (b) (1)**

Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt / 30dBm



**MAXIMUM PEAK OUTPUT POWER  
(RADIATED)****§ 15.247 (b) (1)****EIRP:**

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2412	2437	2462
T <sub>nom</sub> (23)°C	V <sub>nom</sub> (3.3) VDC	23.37	23.92	24.91
Measurement uncertainty		±0.5dBm		

RBW / VBW: 10MHz

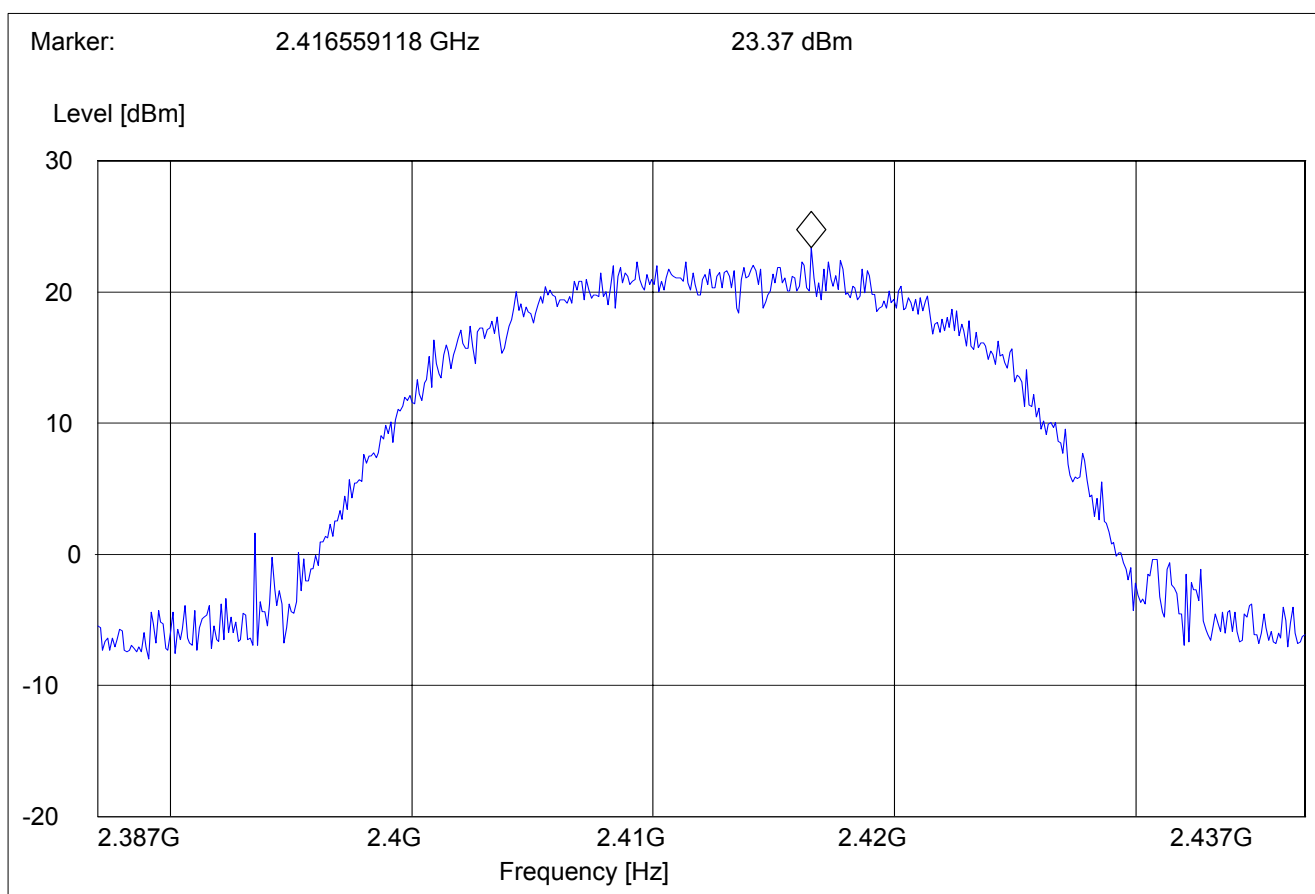
**LIMIT****SUBCLAUSE § 15.247 (b) (1)**

Frequency range	RF power output
2400-2483.5 MHz	30dBm on Conducted

## PEAK OUTPUT POWER (RADIATED)

### EIRP

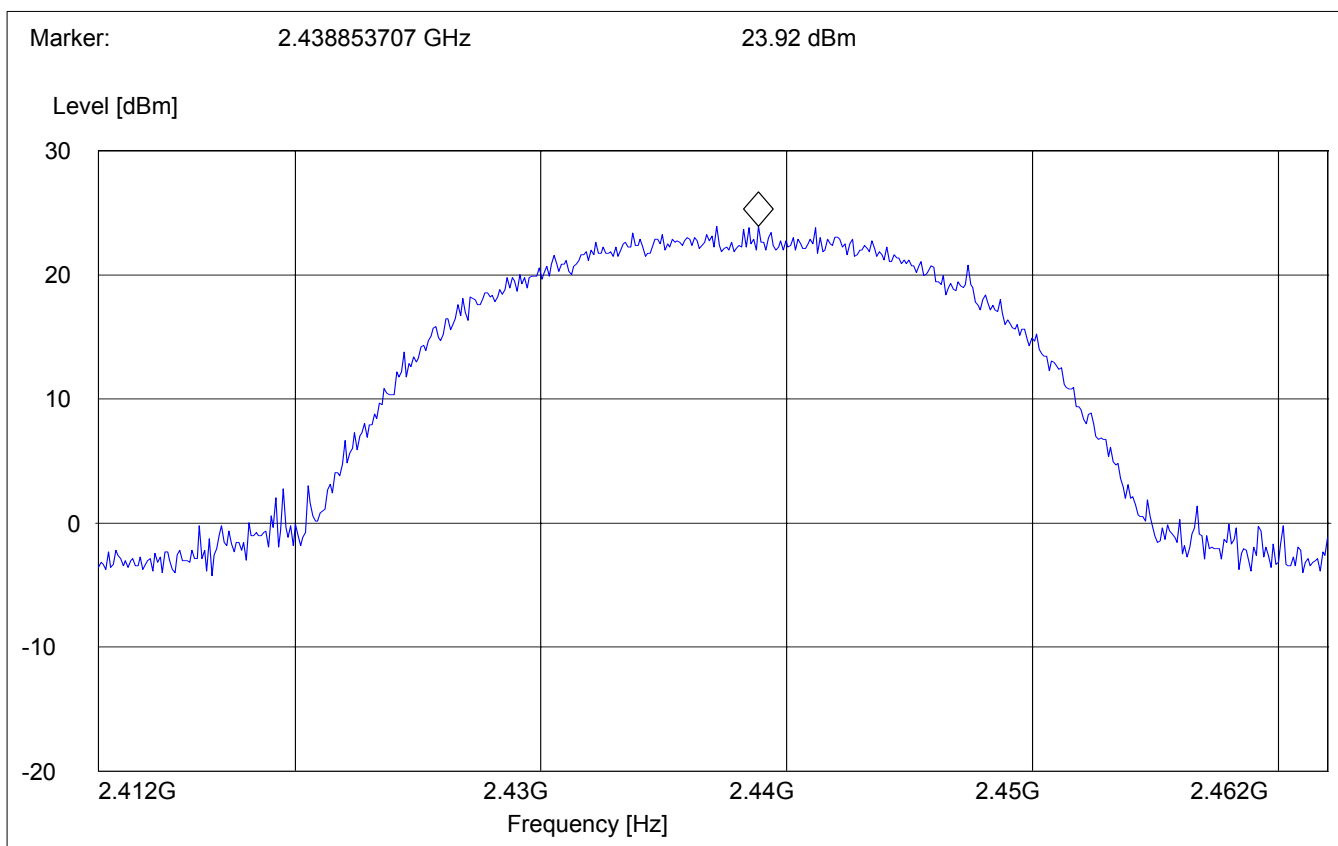
Lowest Channel: 2412MHz



## PEAK OUTPUT POWER (RADIATED)

### EIRP

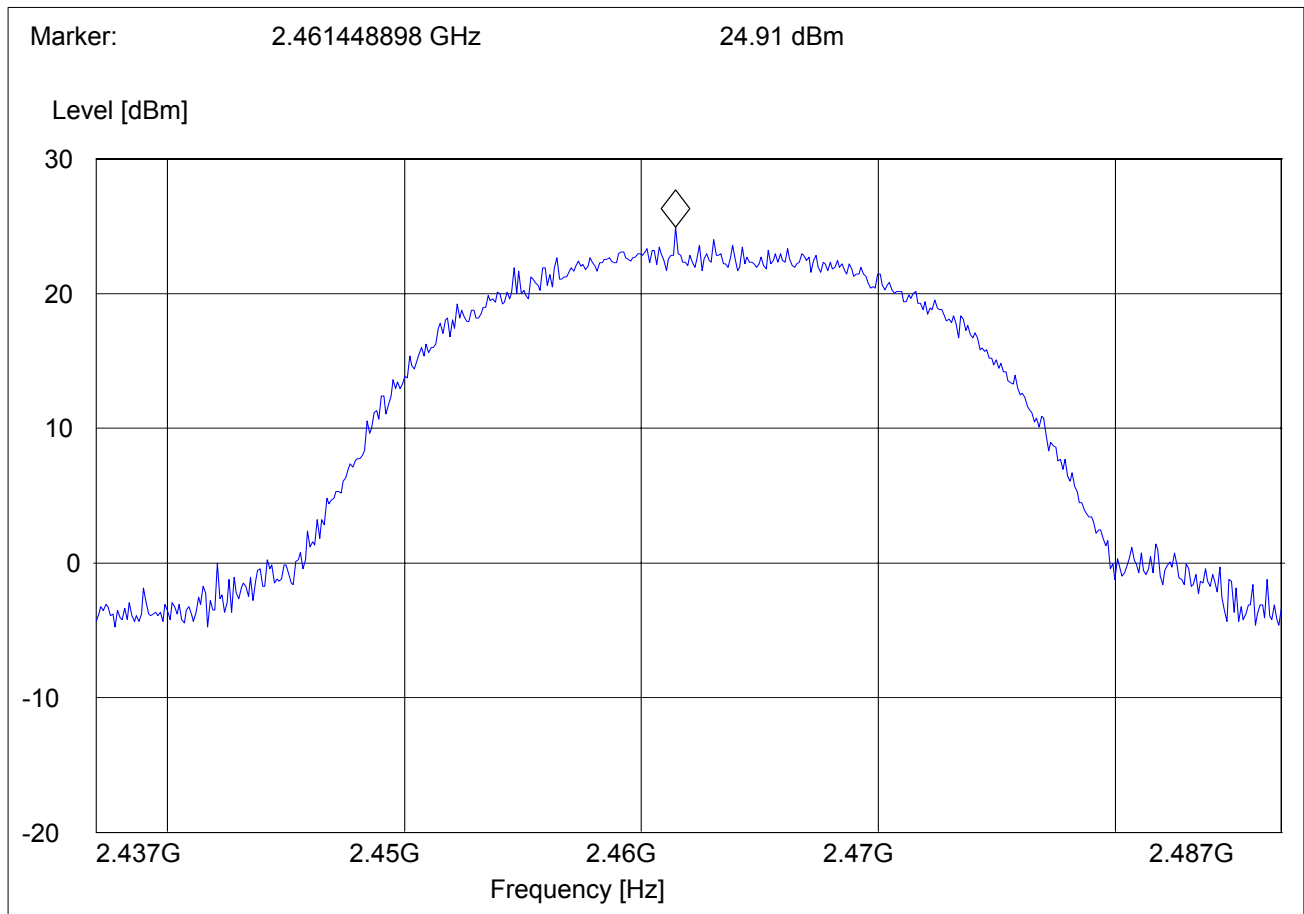
Mid Channel: 2437MHz



## PEAK OUTPUT POWER (RADIATED)

### EIRP

Highest Channel: 2462MHz



## BAND EDGE COMPLIANCE (802.11g)

§15.247 (c)

Data rate: 6Mbps

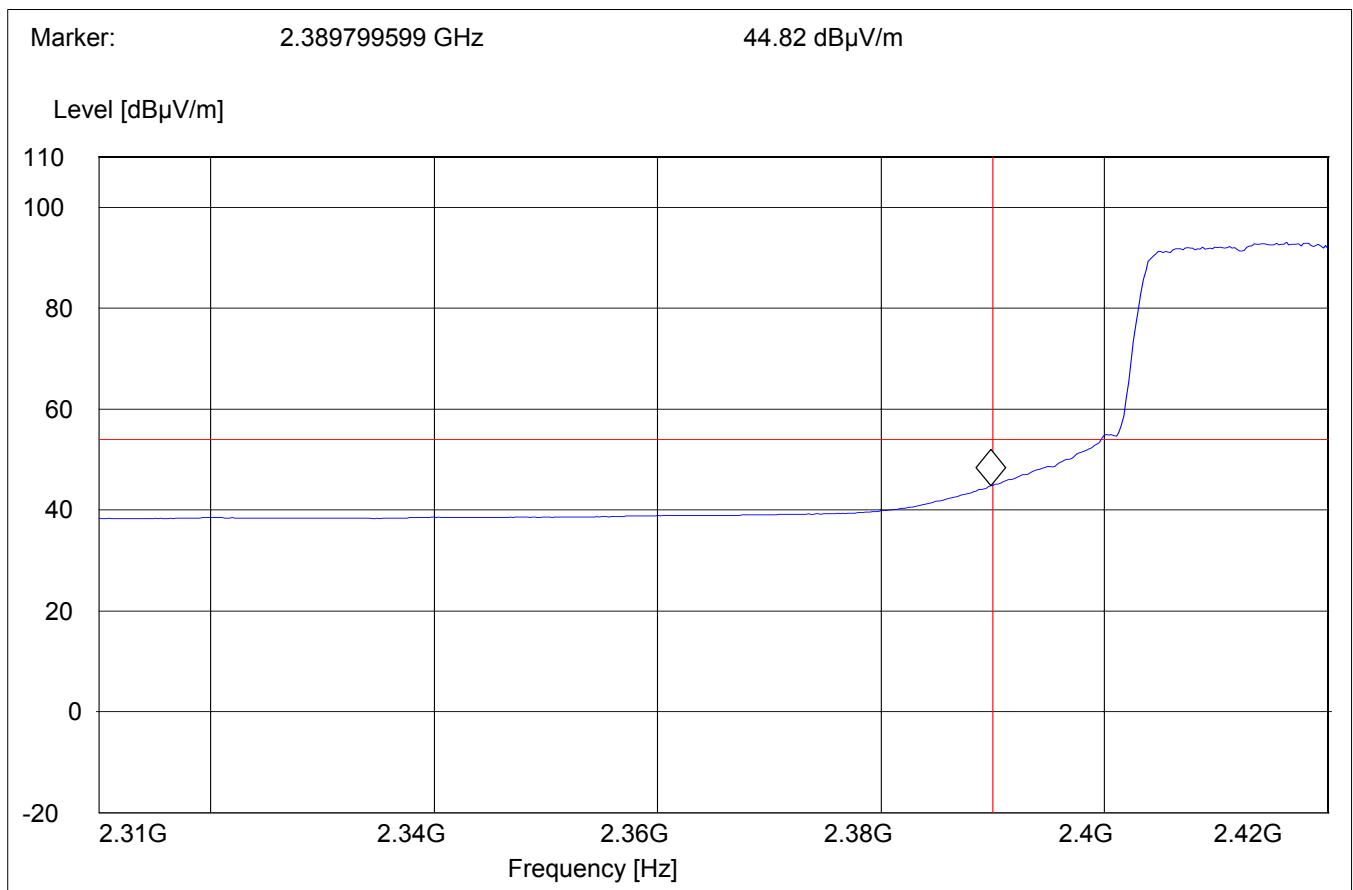
Power Level: 16.5dBm avg. power in packet

### Low frequency section (spurious in the restricted band 2310 – 2390 MHz)

#### (Average measurement)

Operating condition : Tx at 2412MHz  
 SWEEP TABLE : "FCC15.247 LBE\_AVG"  
 Limit Line : 54dBμV

Start Frequency	Stop Frequency	Detector	Meas. Bandw.	RBW	VBW	Transducer
2.31 GHz	2.412 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



## BAND EDGE COMPLIANCE

§15.247 (c)

Data rate: 54Mbps

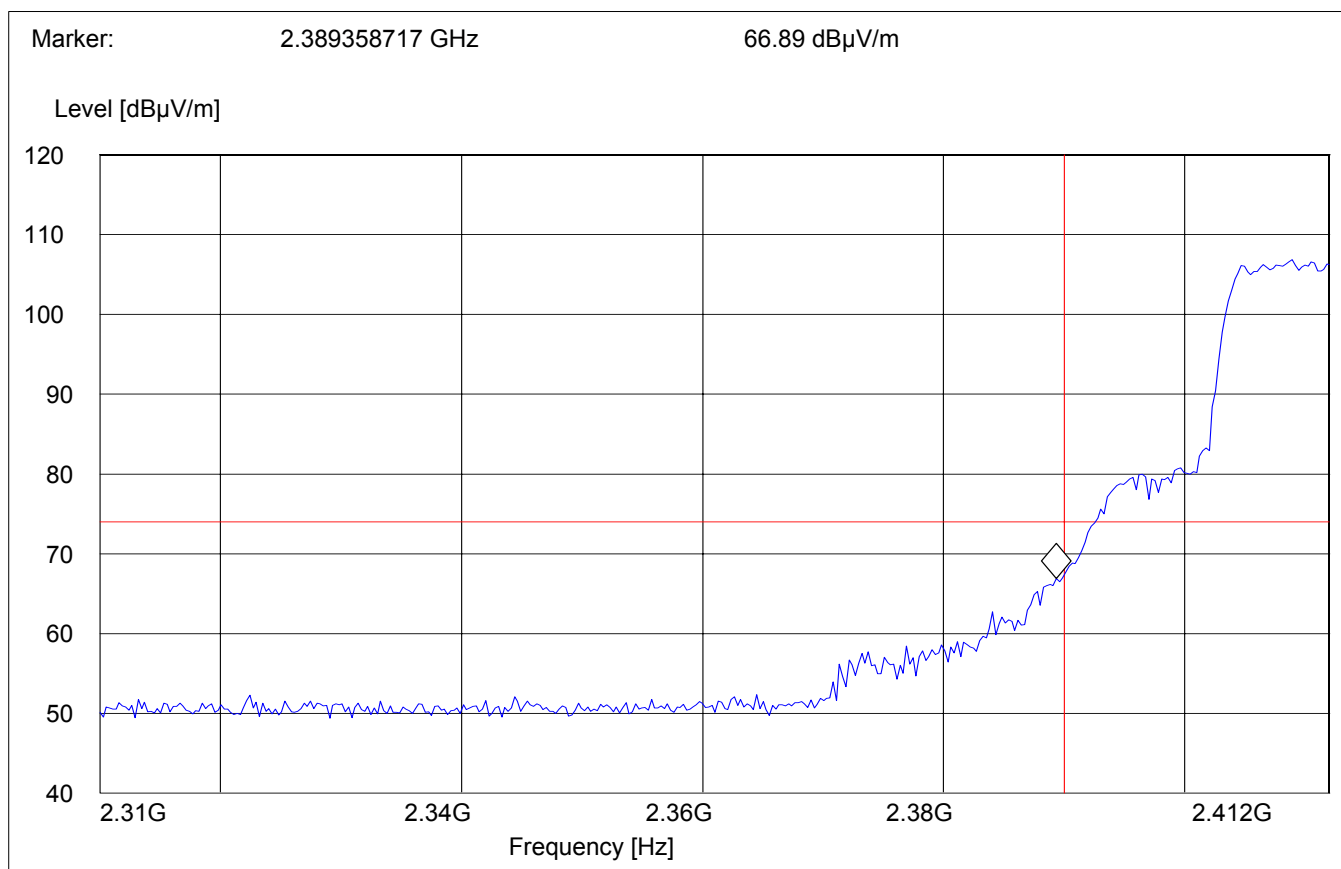
Power Level: 16.5dBm avg. power in packet

### Low frequency section (spurious in the restricted band 2310 – 2390 MHz)

#### (Peak measurement)

Operating condition : Tx at 2412MHz  
 SWEEP TABLE : "FCC15.247 LBE\_Pk"  
 Limit Line : 74dBμV

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
2.31 GHz	2.412 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



## BAND EDGE COMPLIANCE

§15.247 (c)

Data rate: 6Mbps

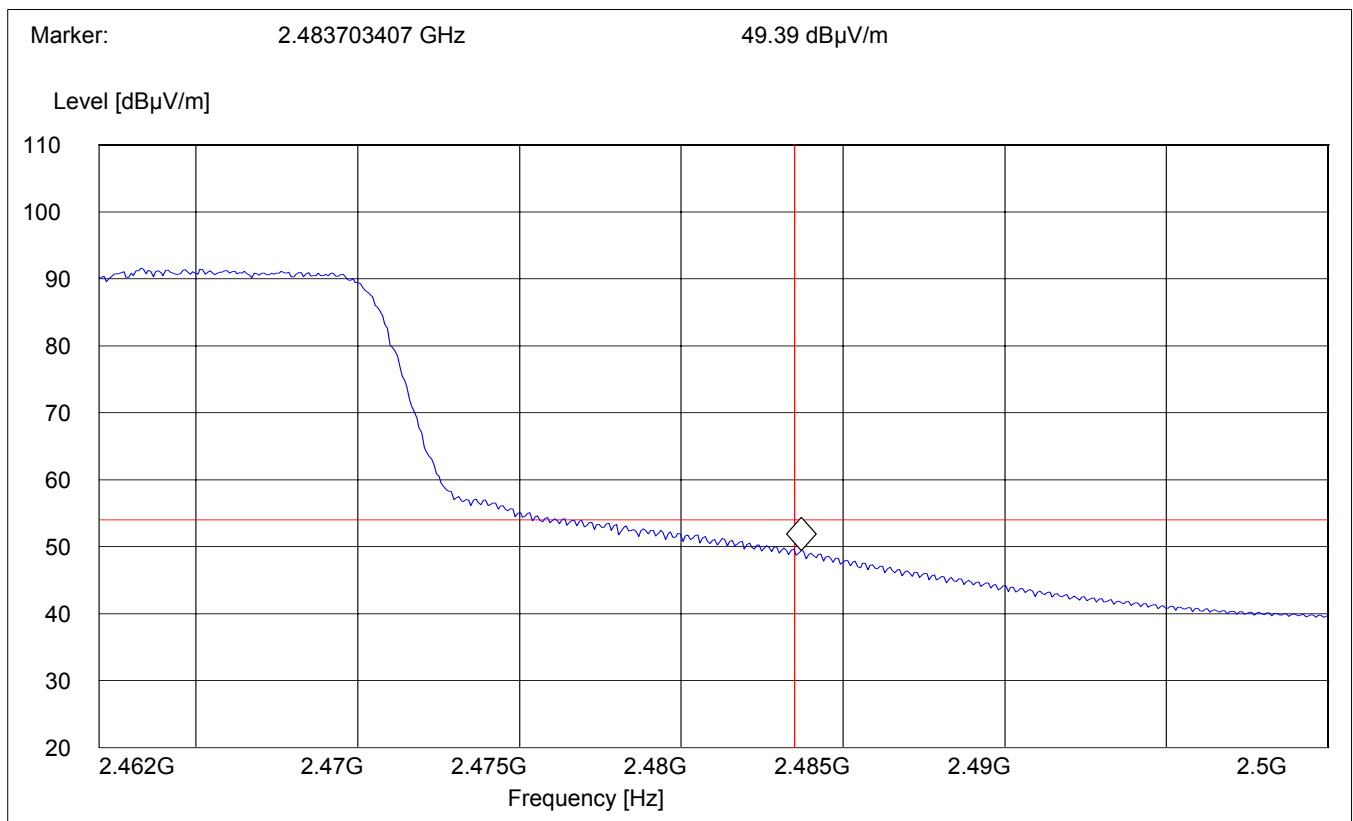
Power Level: 16.5dBm avg. power in packet

### High frequency section (spurious in the restricted band 2483.5 – 2500 MHz)

#### (Average measurement)

Operating condition : Tx at 2462MHz  
 SWEEP TABLE : "FCC15.247 HBE\_AVG"  
 Limit Line : 54dBμV

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



## BAND EDGE COMPLIANCE

§15.247 (c)

Data rate: 54Mbps

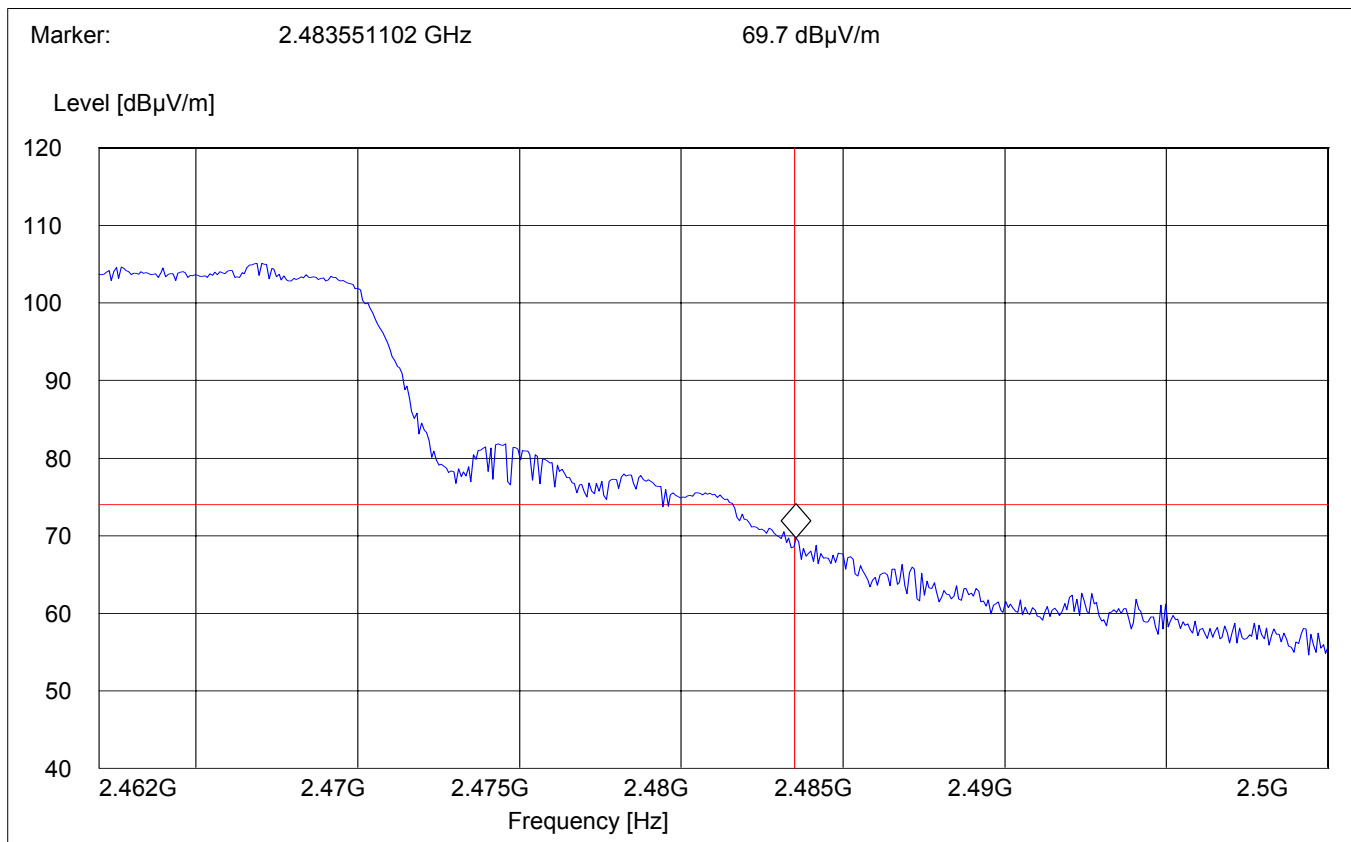
Power Level: 16.5dBm avg. power in packet

### High frequency section (spurious in the restricted band 2483.5 – 2500 MHz)

#### (Peak measurement)

Operating condition : Tx at 2462MHz  
 SWEEP TABLE : "FCC15.247 HBE\_PK"  
 Limit Line : 74dBμV

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)





**EMISSION LIMITATIONS (802.11g)****§ 15.247 (c) (1)****Transmitter (Radiated)****Data rate: 54Mbps****Power Level: 16.5dBm avg. power in packet****LIMITS**

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions, which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

**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 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

**EMISSION LIMITATIONS - Radiated (Transmitter)**

§ 15.247 (c) (1)

**Power level: 16.5dBm for 802.11g mode**

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Average 54Mbps	Average 6Mbps
See plots			
Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Average 54Mbps	Average 6Mbps
See plots			
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Average 54Mbps	Average 6Mbps
See plots			

## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2412MHz): 30MHz – 1GHz

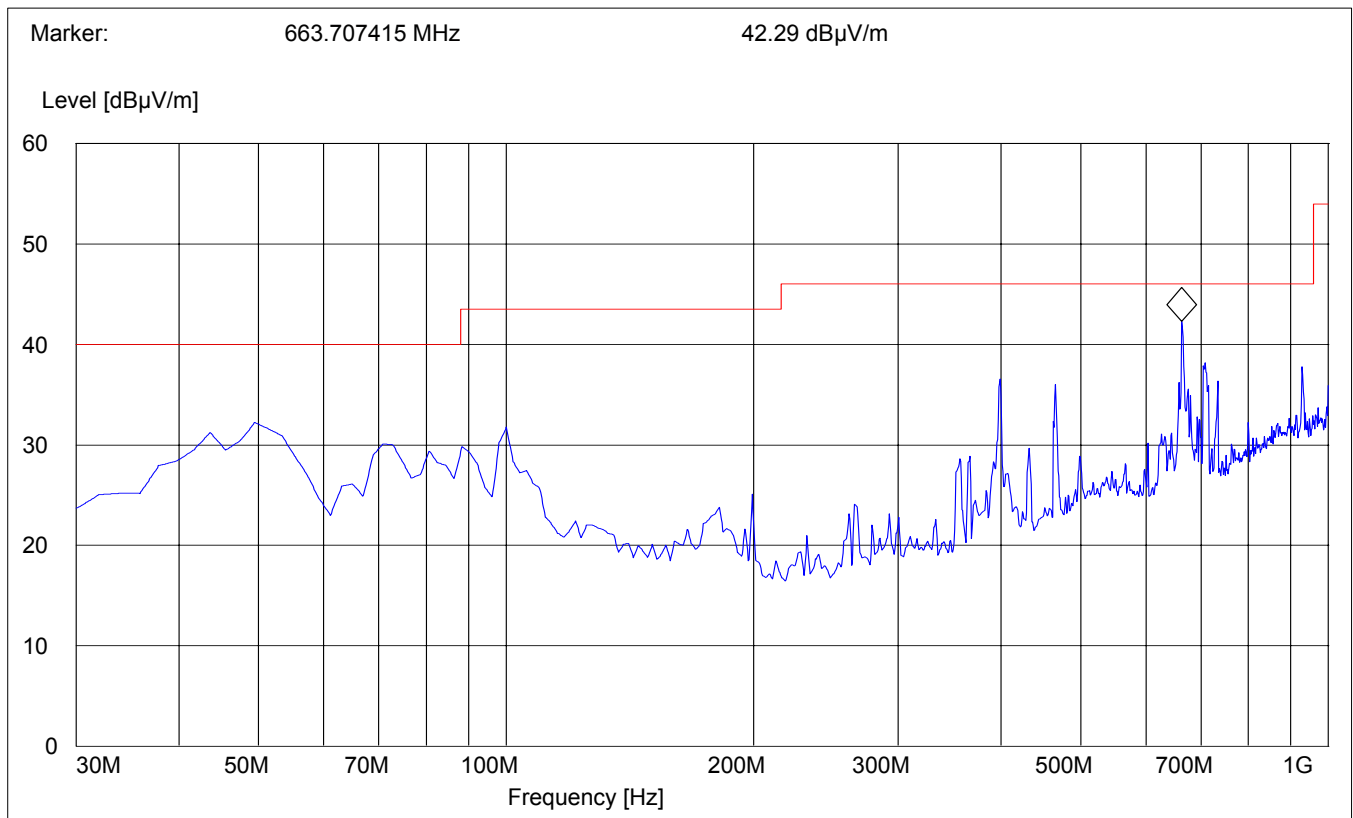
Antenna: Vertical

**Note: This plot is valid for low, mid, high channels for all data rates and power levels (worst-case plot)**

SWEEP TABLE:

"Spuri hi 30-1G"

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



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2412MHz): 30MHz – 1GHz

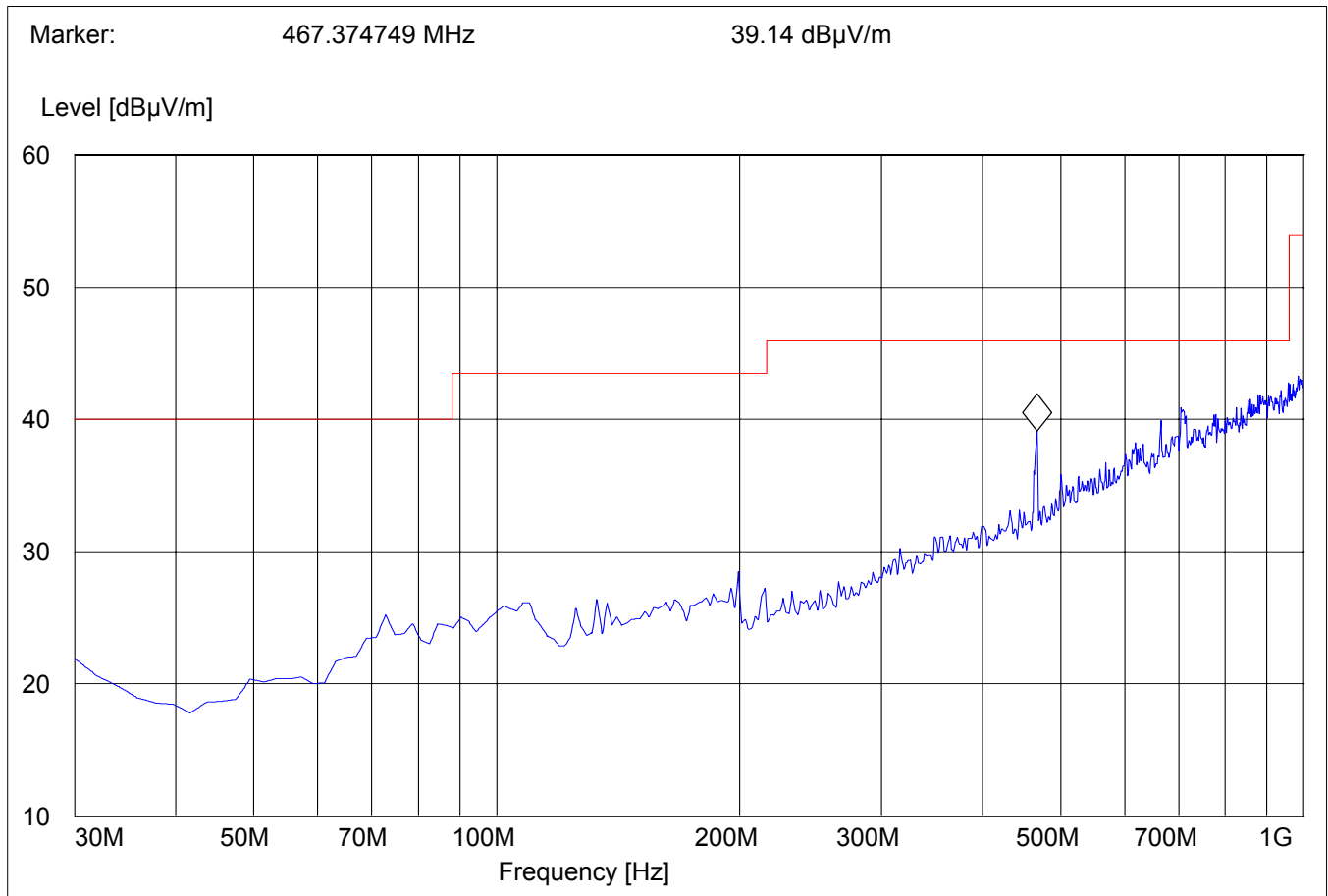
Antenna: Horizontal

**Note: This plot is valid for low, mid, high channels for all data rates and power levels (worst-case plot)**

SWEEP TABLE:

"Spuri hi 30-1G"

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



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2412MHz): 1GHz – 3GHz

Data rate: 54Mbps

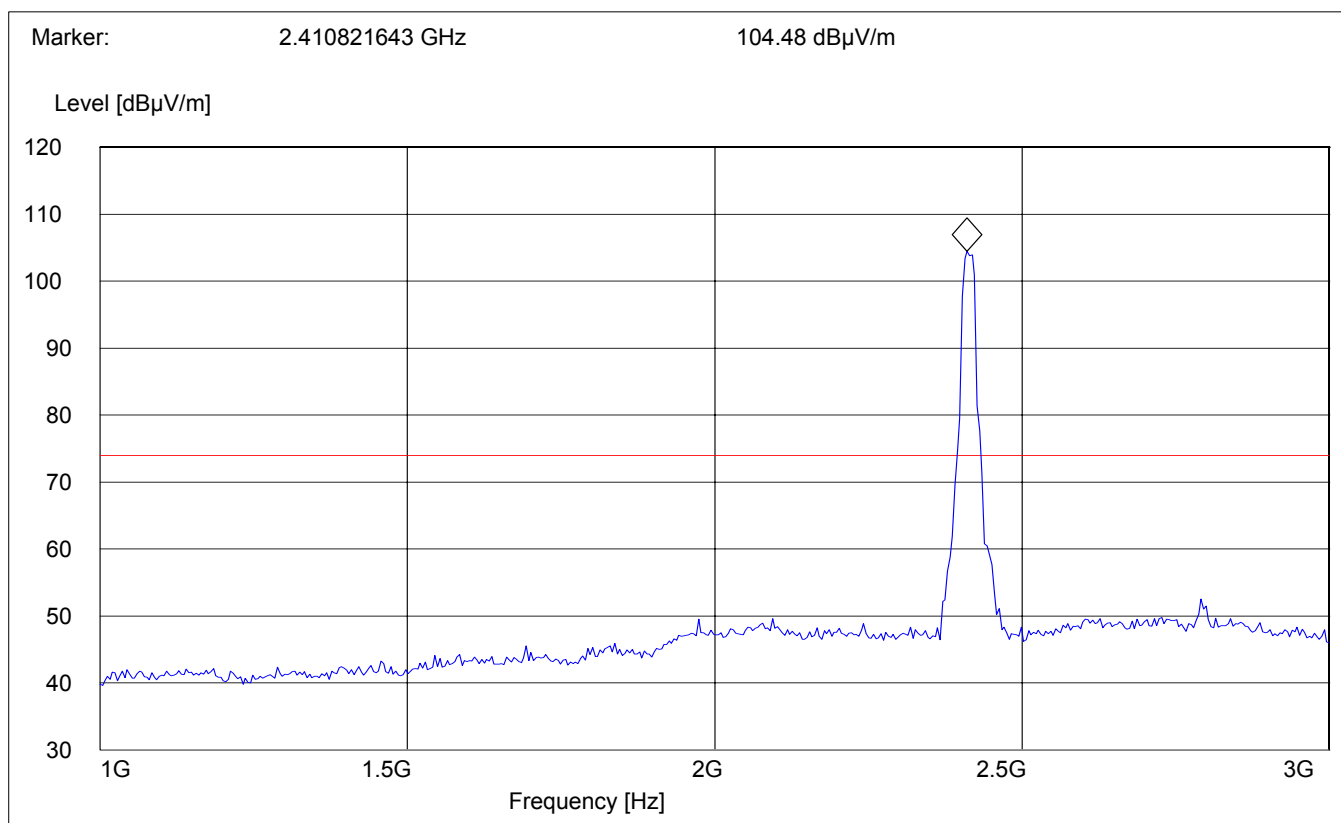
Power Level: 16.5dBm avg. power in packet

Note: Peak above the limit line is the carrier freq.

### SWEEP TABLE:

"Spuri hi 1-3G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

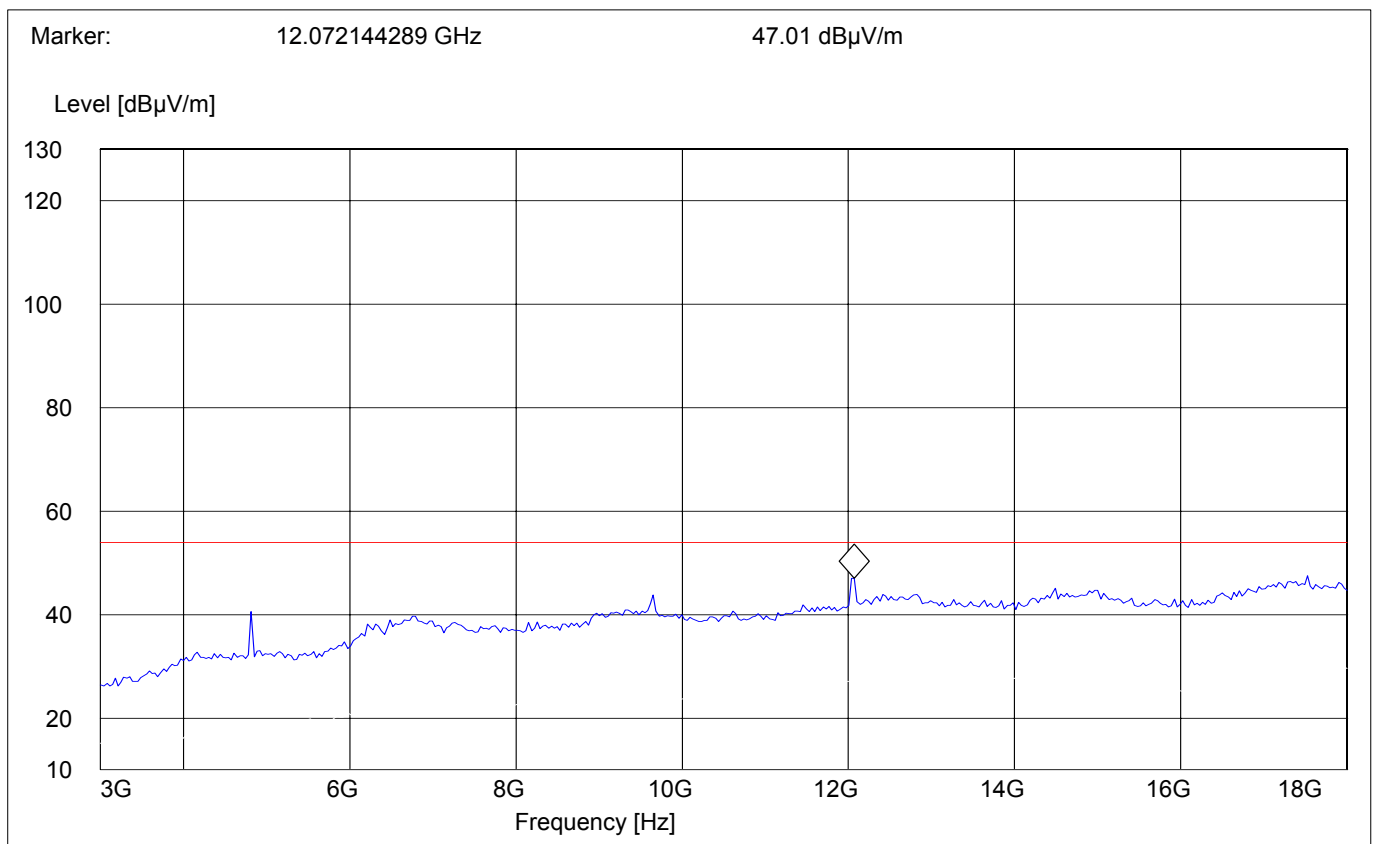
§ 15.247 (c) (1)

Lowest Channel (2412MHz): 3GHz – 18GHz

Data rate: 54Mbps

Power Level: 16.5dBm avg. power in packet

SWEEP TABLE: "Spuri hi 3-18G"					
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Mid Channel (2437MHz): 1GHz – 3GHz

Data rate: 54Mbps

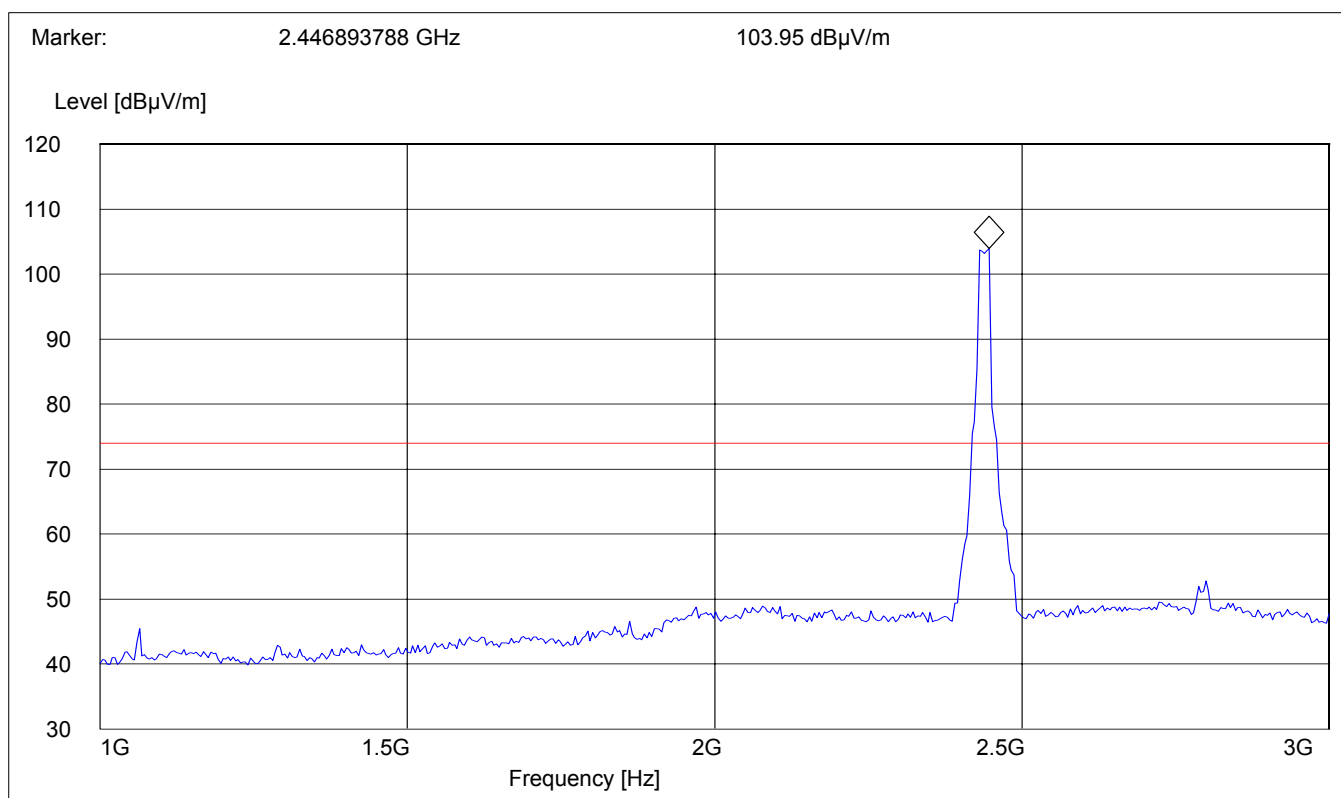
Power Level: 16.5dBm avg. power in packet

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

### SWEEP TABLE:

"Spuri hi 1-3G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Mid Channel (2437MHz): 3GHz – 18GHz

Data rate: 54Mbps

Power Level: 16.5dBm avg. power in packet

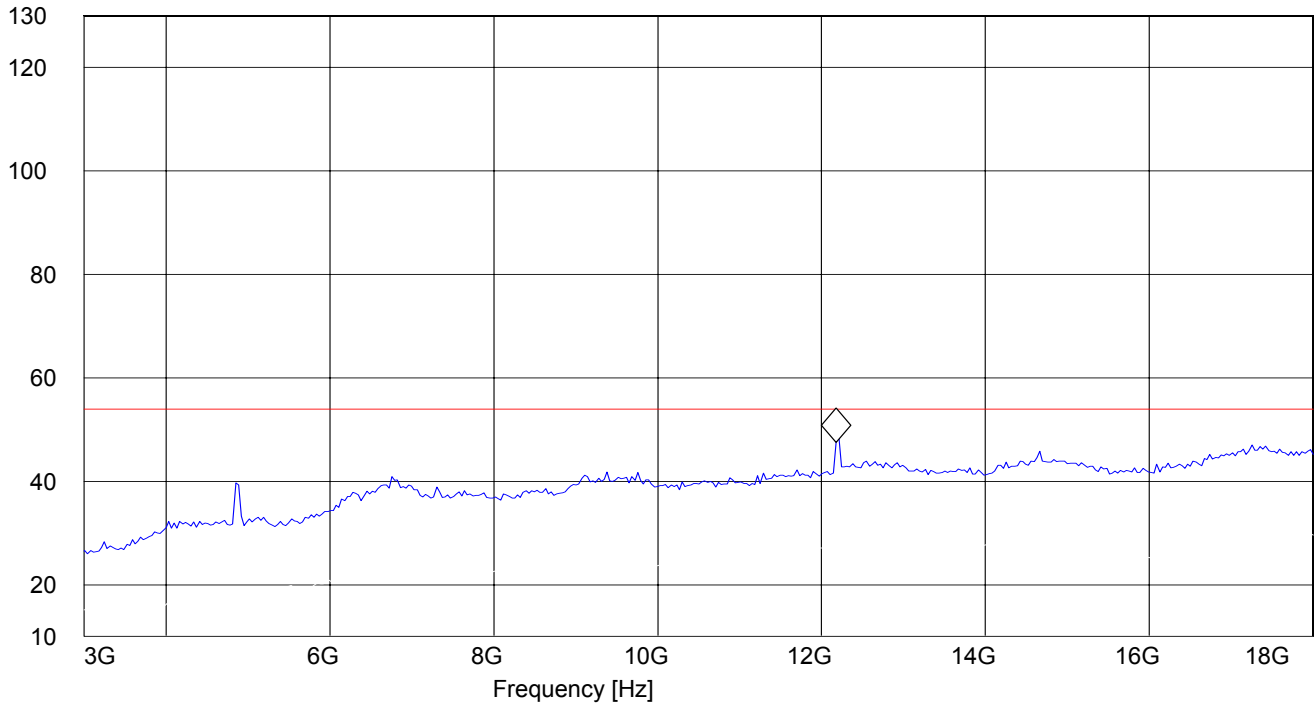
SWEEP TABLE:

"Spuri hi 3-18G"

Start	Stop	Detector	Meas.	RBW	VBW	Transducer
Frequency	Frequency	Time	Bandw.			
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)

Marker: 12.174348697 GHz 47.55 dBµV/m

Level [dBµV/m]





## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Highest Channel (2462MHz): 1GHz – 3GHz

Data rate: 54Mbps

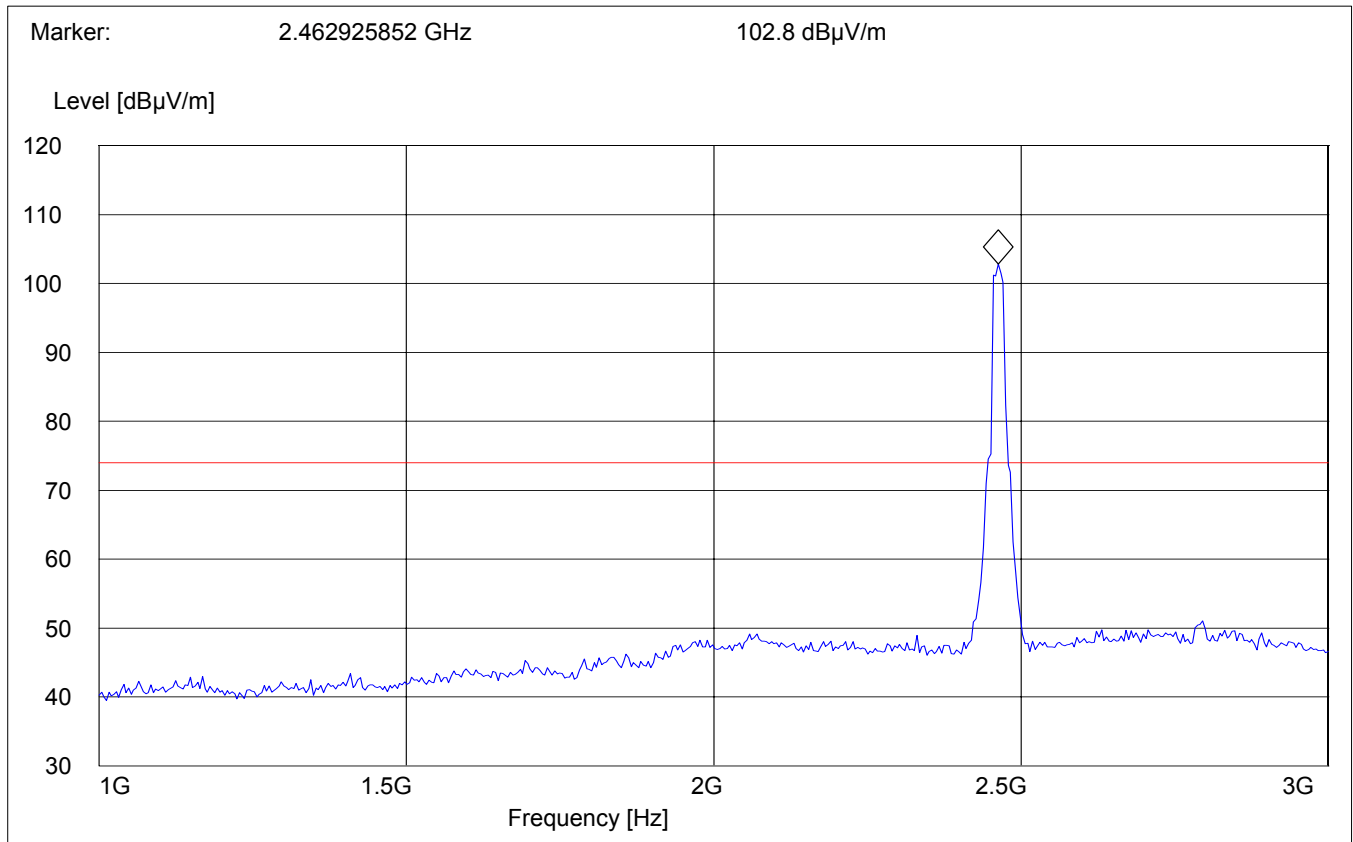
Power Level: 16.5dBm avg. power in packet

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

### SWEEP TABLE:

"Spuri hi 1-3G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Highest Channel (2462MHz): 3GHz – 18GHz

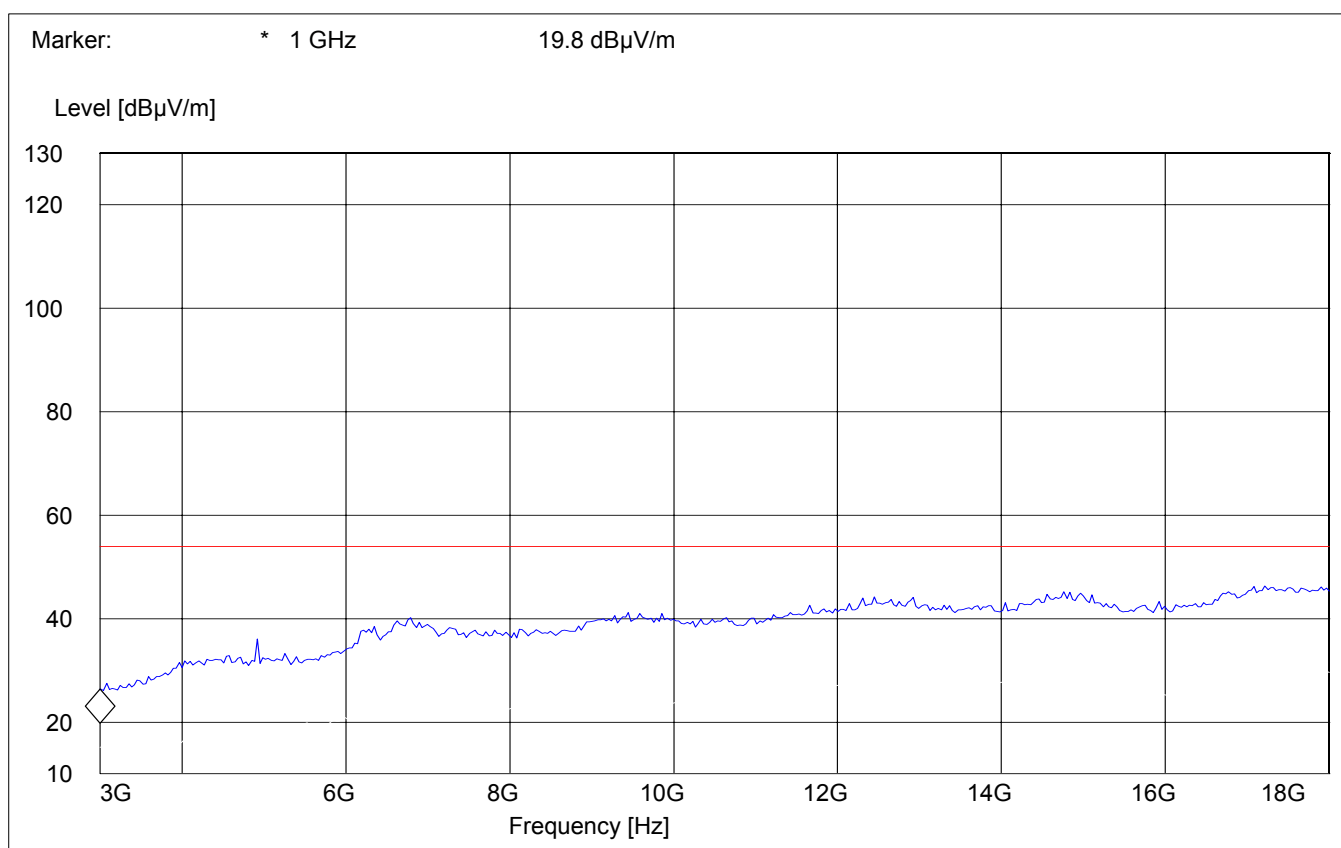
Data rate: 54Mbps

Power Level: 16.5dBm avg. power in packet

SWEEP TABLE:

"Spuri hi 3-18G"

Start	Stop	Detector	Meas.	RBW	VBW	Transducer
Frequency	Frequency	Time	Bandw.			
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

18GHz – 25GHz

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

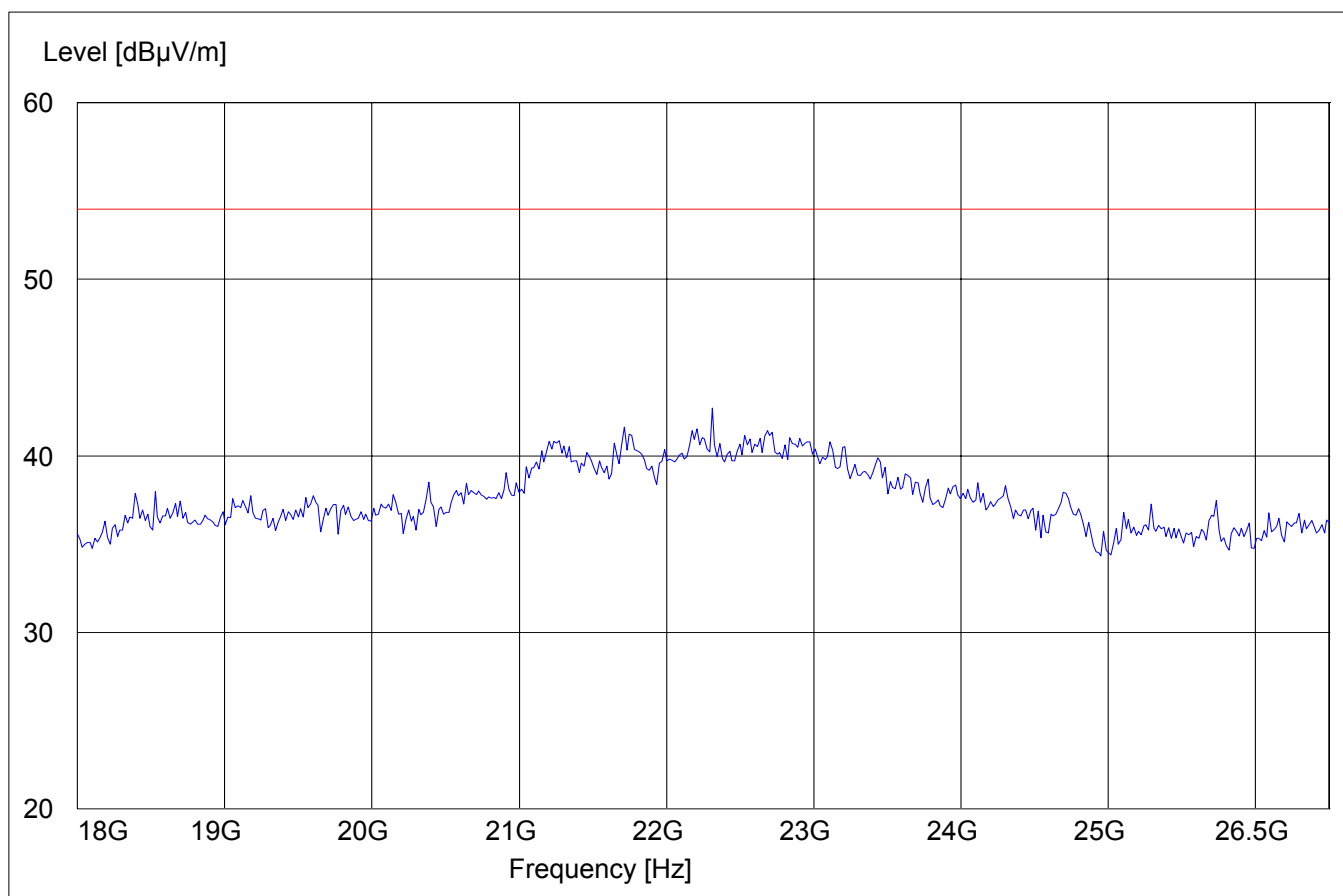
**Data rate: 54Mbps**

**Power Level: 16.5dBm avg. power in packet**

SWEEP TABLE:

"Spuri hi 18-25G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18 GHz	25 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## BAND EDGE COMPLIANCE (802.11b)

§15.247 (c)

Data rate: 1Mbps

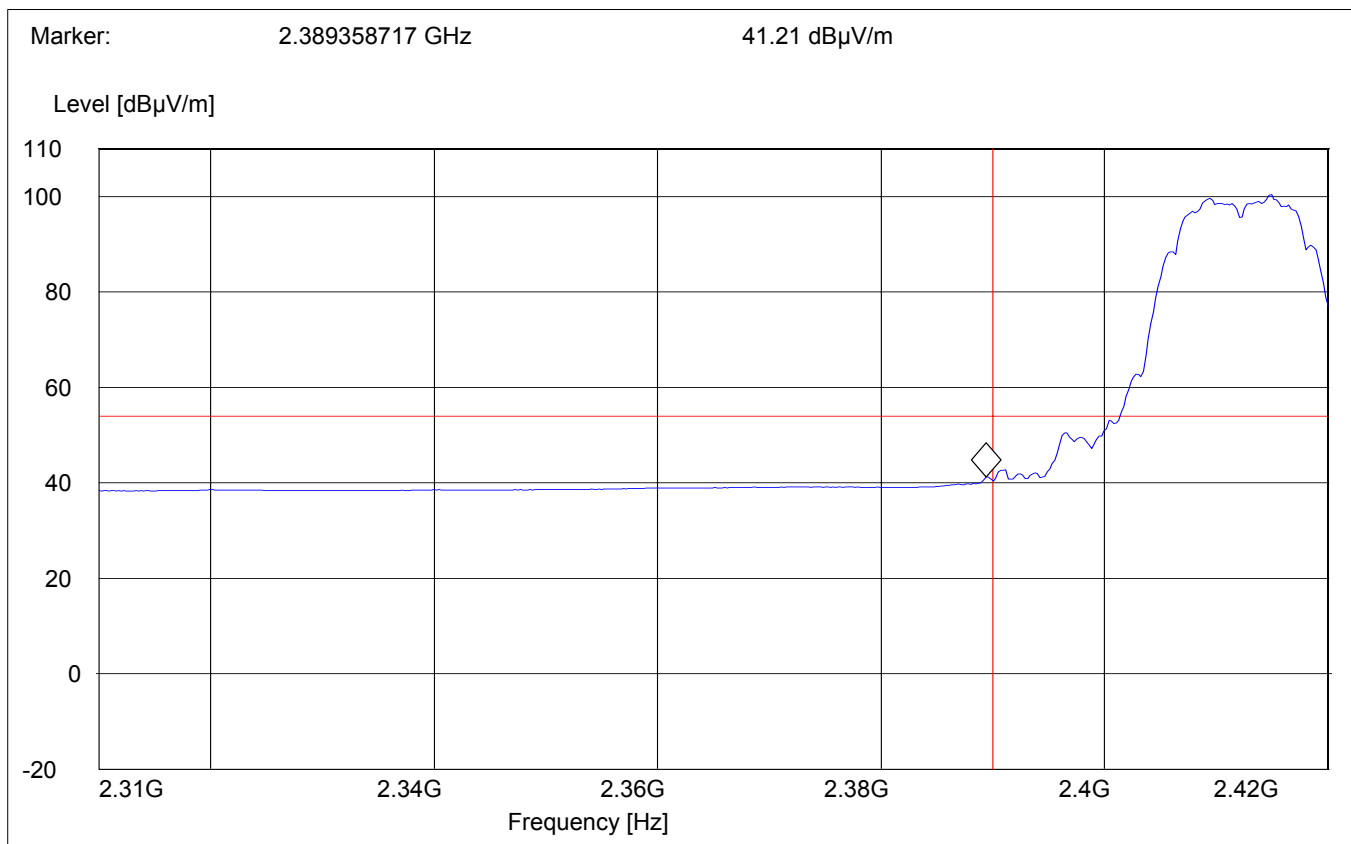
Power Level: 18dBm avg. power in packet

### Low frequency section (spurious in the restricted band 2310 – 2390 MHz)

#### (Average measurement)

Operating condition : Tx at 2412MHz  
 SWEEP TABLE : "FCC15.247 LBE\_AVG"  
 Limit Line : 54dBμV

Start Frequency	Stop Frequency	Detector	Meas. Bandw.	RBW	VBW	Transducer
2.31 GHz	2.412 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



## BAND EDGE COMPLIANCE

§15.247 (c)

Data rate: 11Mbps

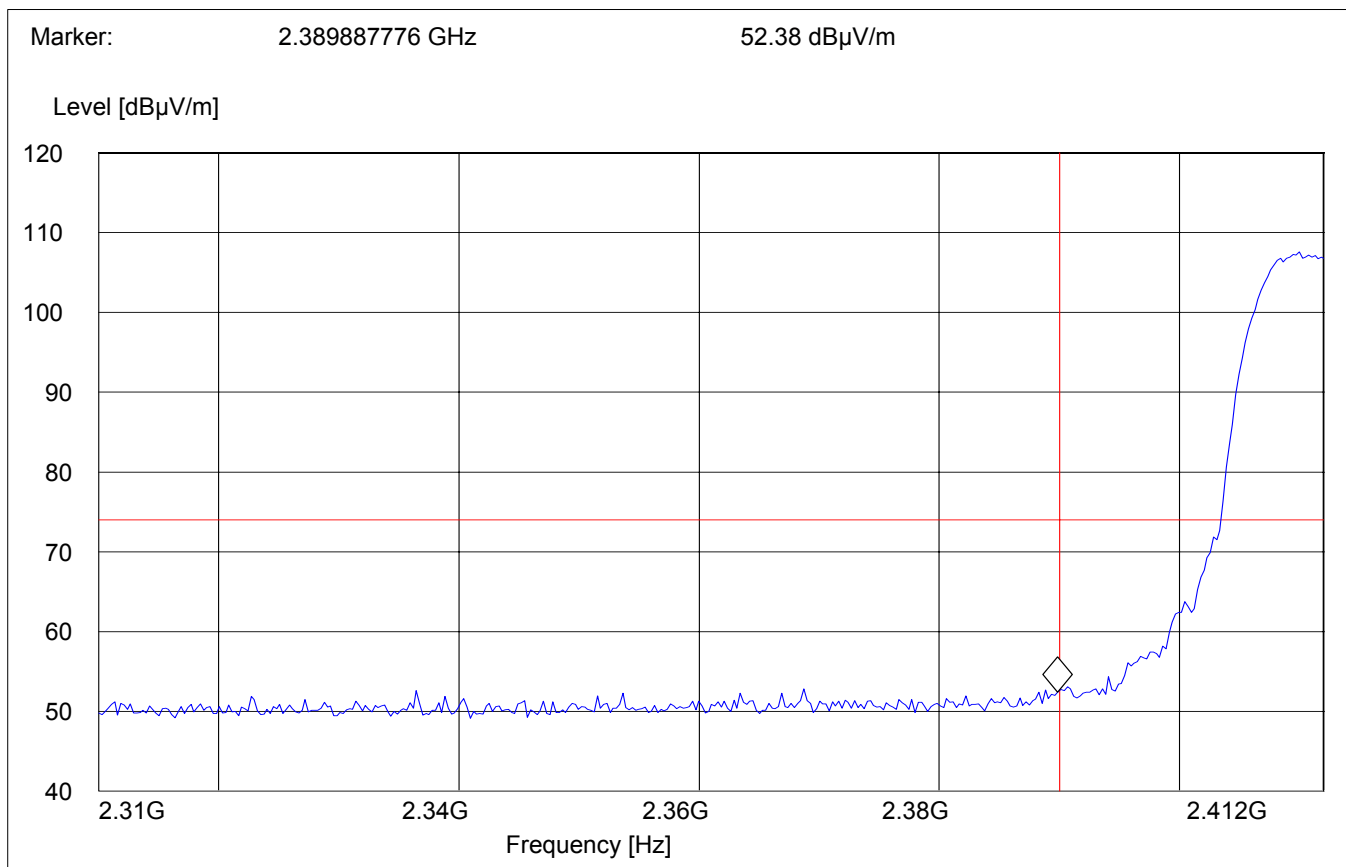
Power Level: 18dBm avg. power in packet

### Low frequency section (spurious in the restricted band 2310 – 2390 MHz)

#### (Peak measurement)

Operating condition : Tx at 2412MHz  
 SWEEP TABLE : "FCC15.247 LBE\_Pk"  
 Limit Line : 74dBμV

Start Frequency	Stop Frequency	Detector	Meas. Bandw.	RBW	VBW	Transducer
2.31 GHz	2.412 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



## BAND EDGE COMPLIANCE

§15.247 (c)

Data rate: 1Mbps

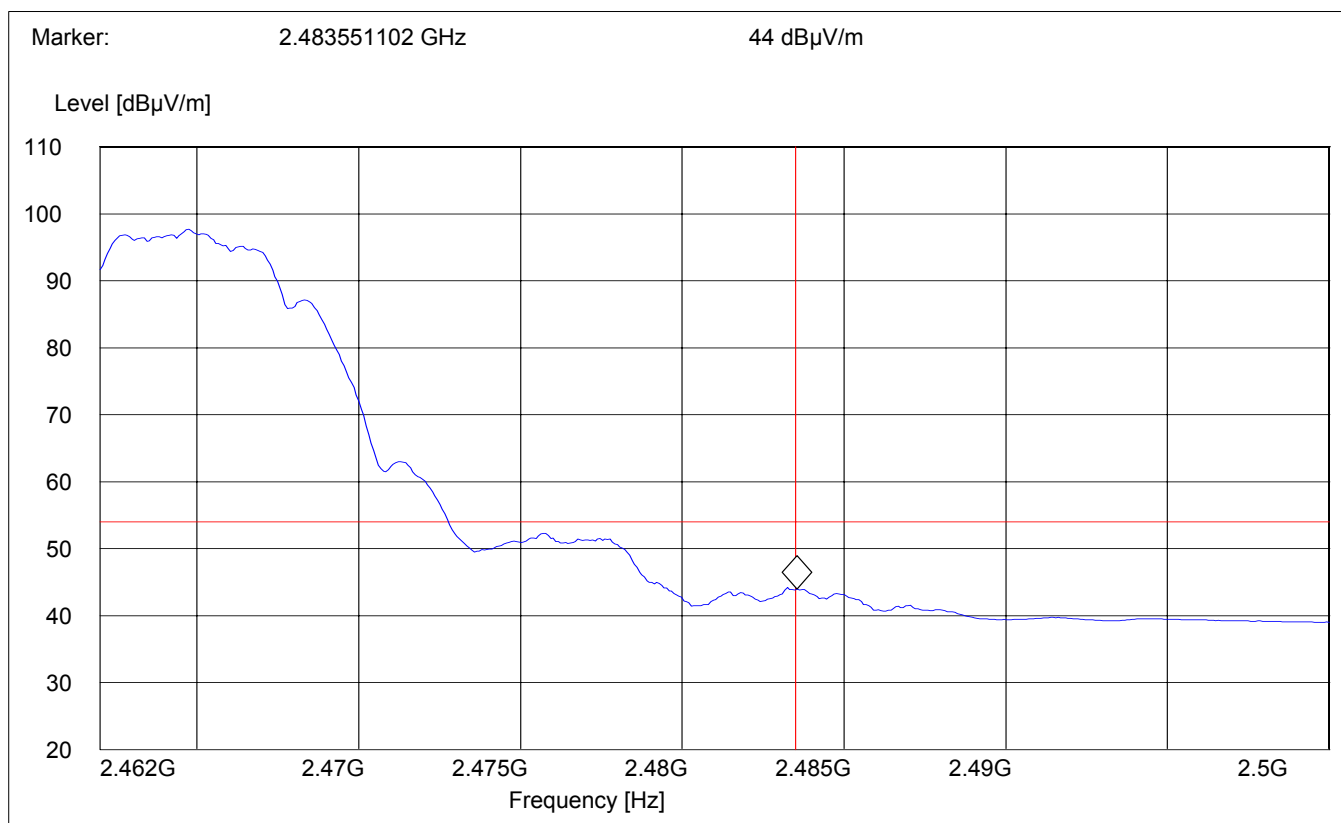
Power Level: 18dBm avg. power in packet

### High frequency section (spurious in the restricted band 2483.5 – 2500 MHz)

#### (Average measurement)

Operating condition : Tx at 2462MHz  
 SWEEP TABLE : "FCC15.247 HBE\_AVG"  
 Limit Line : 54dBμV

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



## BAND EDGE COMPLIANCE

§15.247 (c)

Data rate: 11Mbps

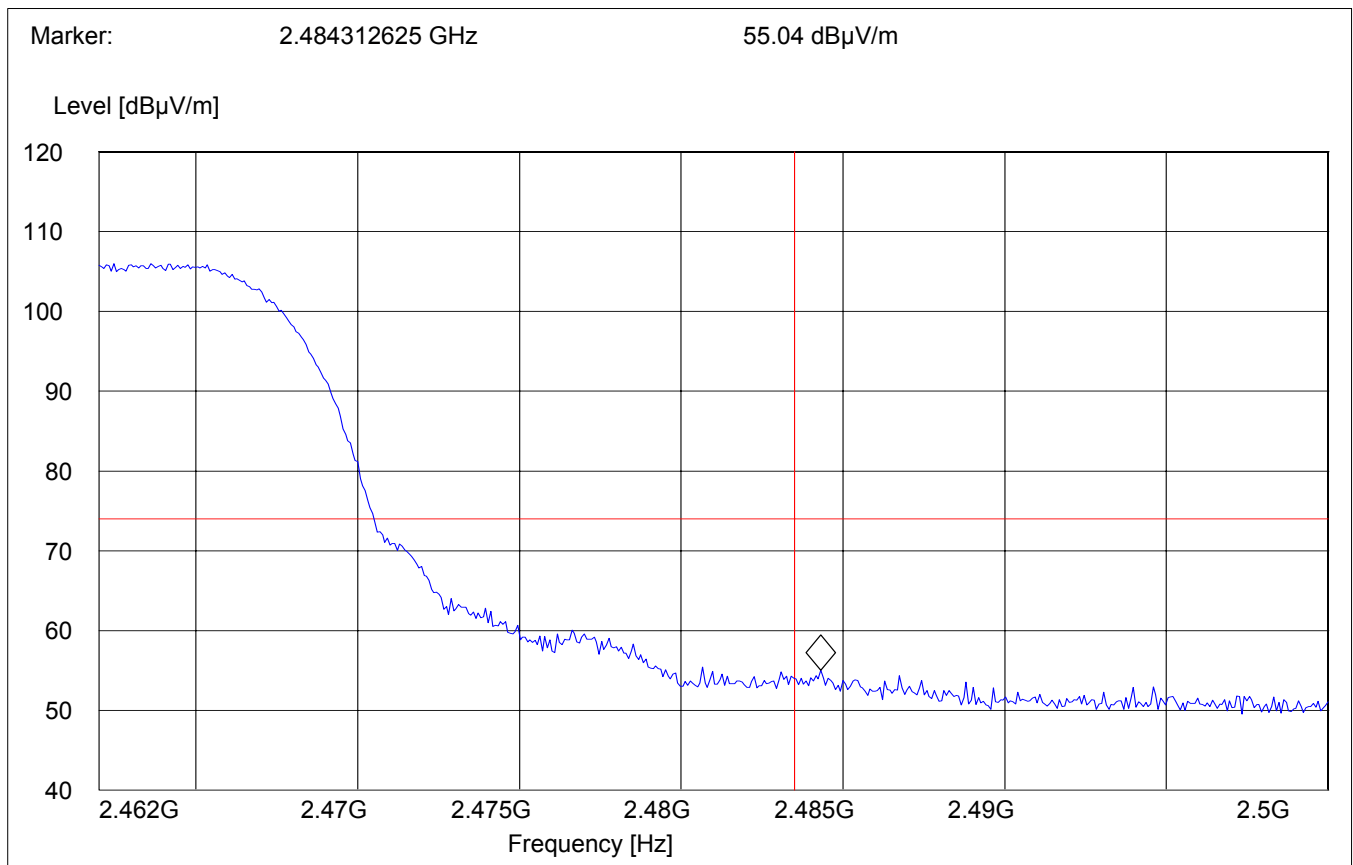
Power Level: 18dBm avg. power in packet

### High frequency section (spurious in the restricted band 2483.5 – 2500 MHz)

#### (Peak measurement)

Operating condition : Tx at 2462MHz  
 SWEEP TABLE : "FCC15.247 HBE\_PK"  
 Limit Line : 74dBμV

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



**EMISSION LIMITATIONS (802.11b)****§ 15.247 (c) (1)****Transmitter (Radiated)****Data rate: 11Mbps****Power Level: 18dBm avg. power in packet****LIMITS**

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions, which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

**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 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



**EMISSION LIMITATIONS - Radiated (Transmitter)**

§ 15.247 (c) (1)

**Power Level: 18dBm avg. power in packet**

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Average 11Mbps	Average 1Mbps
See plots			
Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Average 11Mbps	Average 1Mbps
See plots			
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Average 11Mbps	Average 1Mbps
See plots			

## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2412MHz): 1GHz – 3GHz

Data rate: 11Mbps

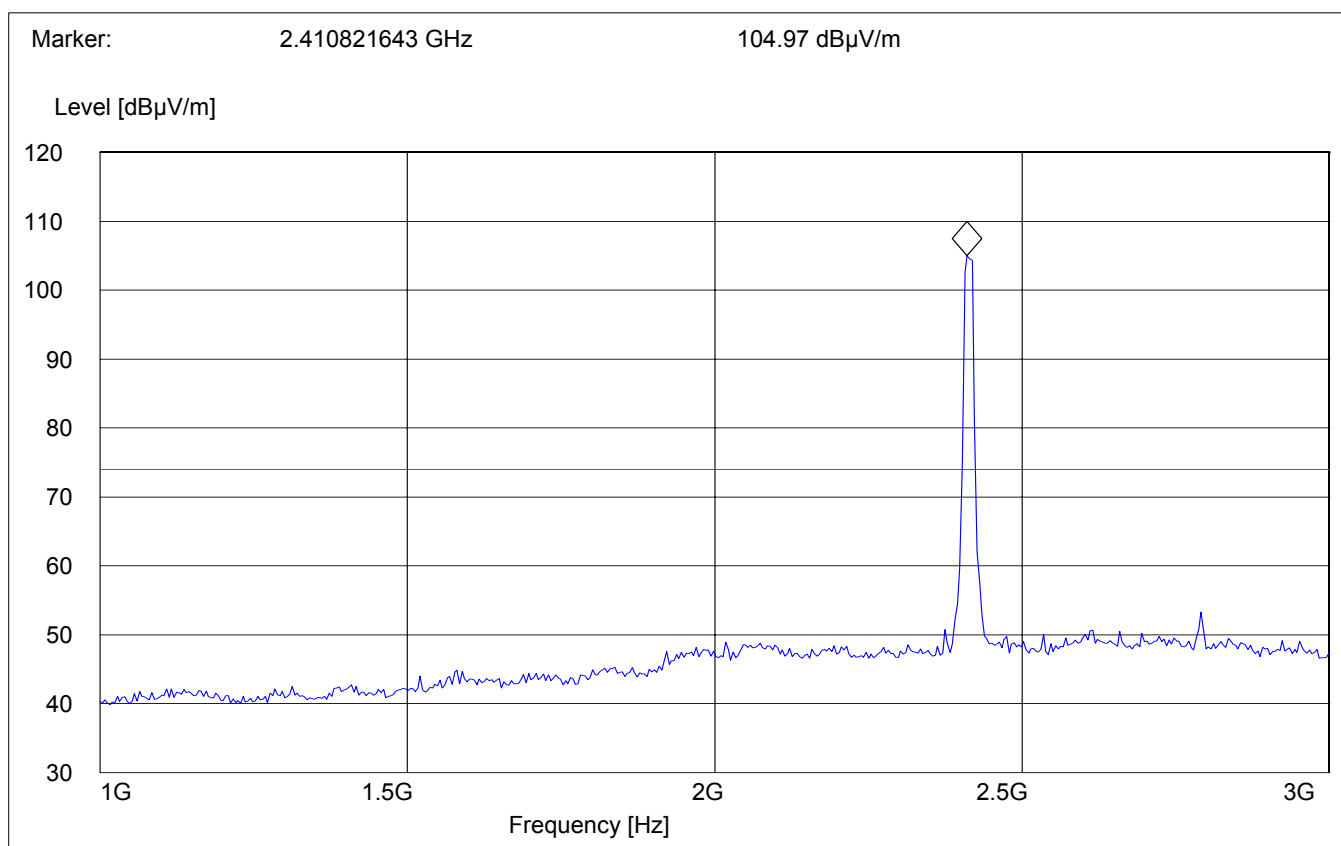
Power Level: 18dBm avg. power in packet

Note: Peak above the limit line is the carrier freq.

### SWEEP TABLE:

"Spuri hi 1-3G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel (2412MHz): 3GHz – 18GHz

Data rate: 11Mbps

Power Level: 18dBm avg. power in packet

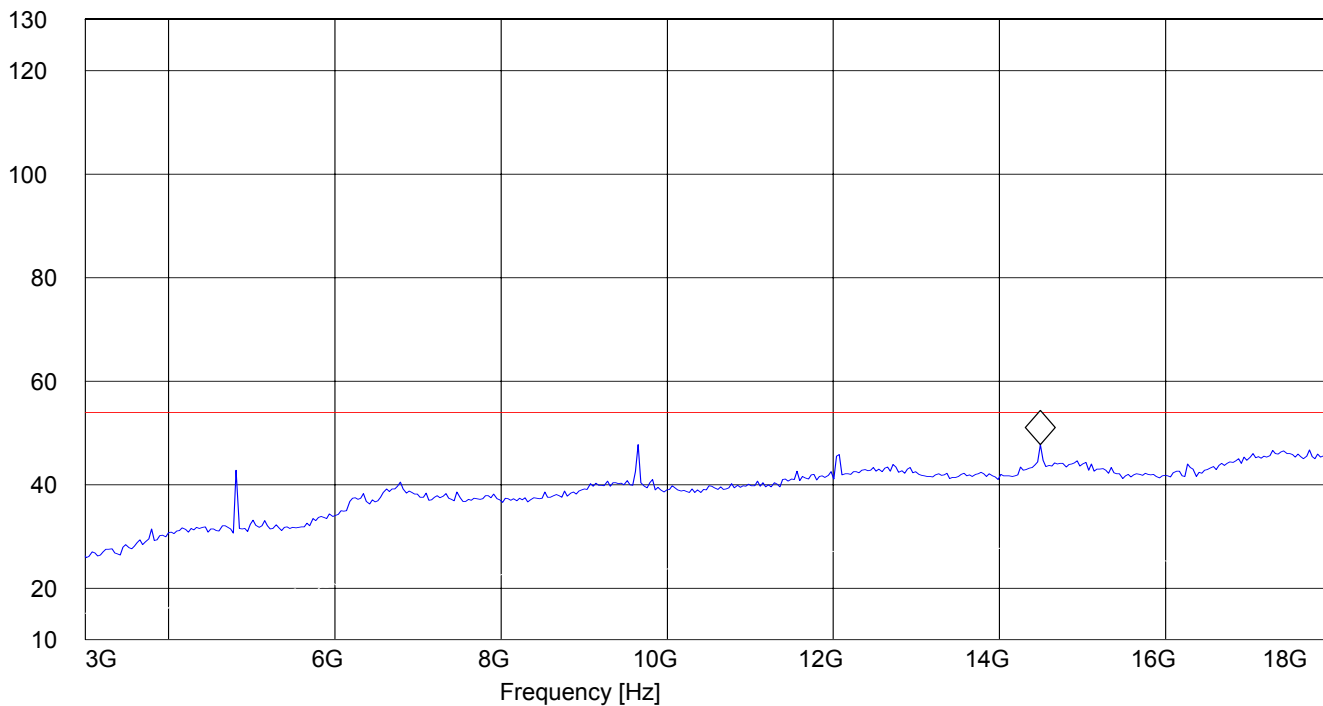
SWEEP TABLE:

"Spuri hi 3-18G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

Marker: 14.490981964 GHz 47.76 dBμV/m

Level [dBμV/m]



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Mid Channel (2437MHz): 1GHz – 3GHz

Data rate: 11Mbps

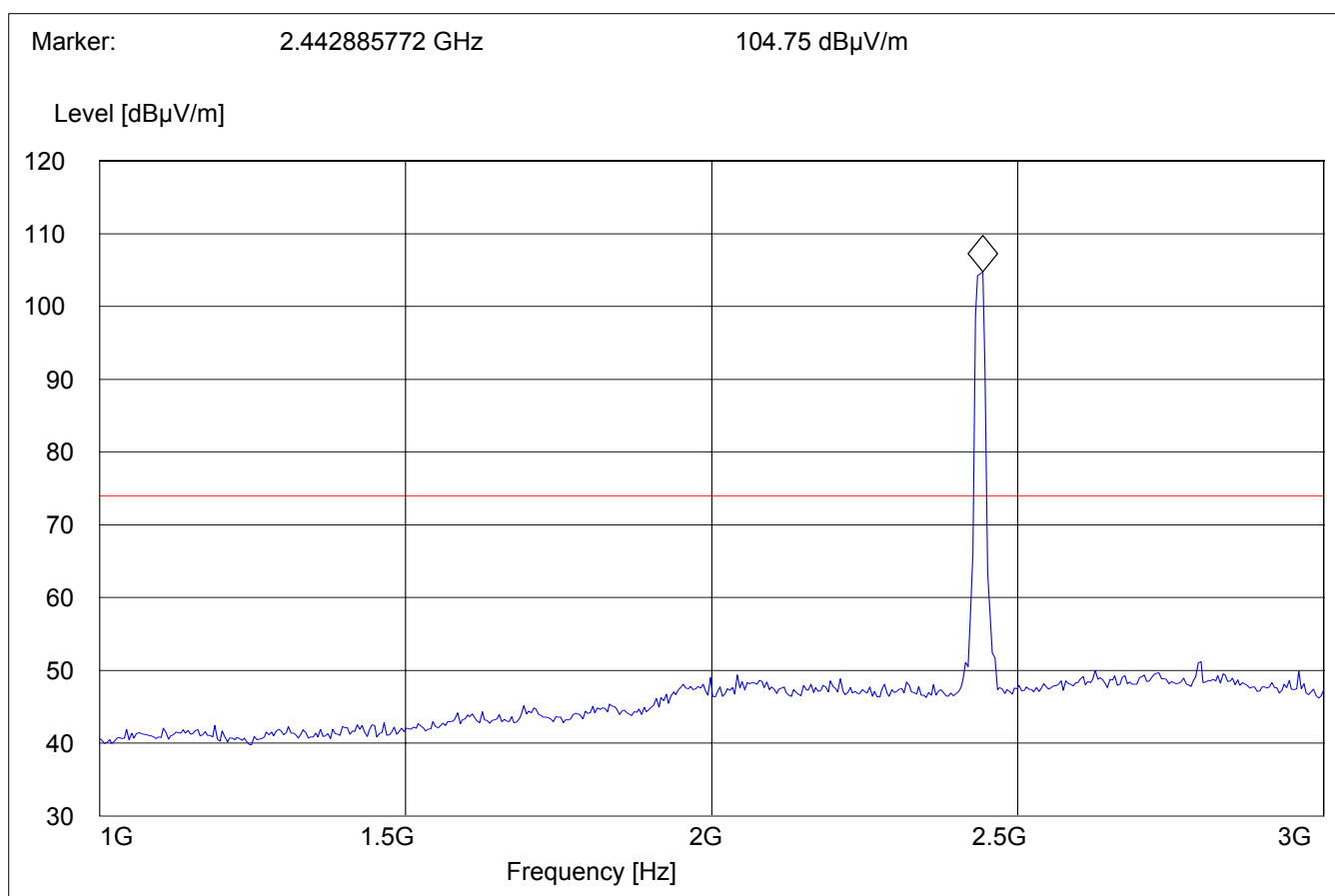
Power Level: 18dBm avg. power in packet

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

### SWEEP TABLE:

"Spuri hi 1-3G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Mid Channel (2437MHz): 3GHz – 18GHz

Data rate: 11Mbps

Power Level: 18dBm avg. power in packet

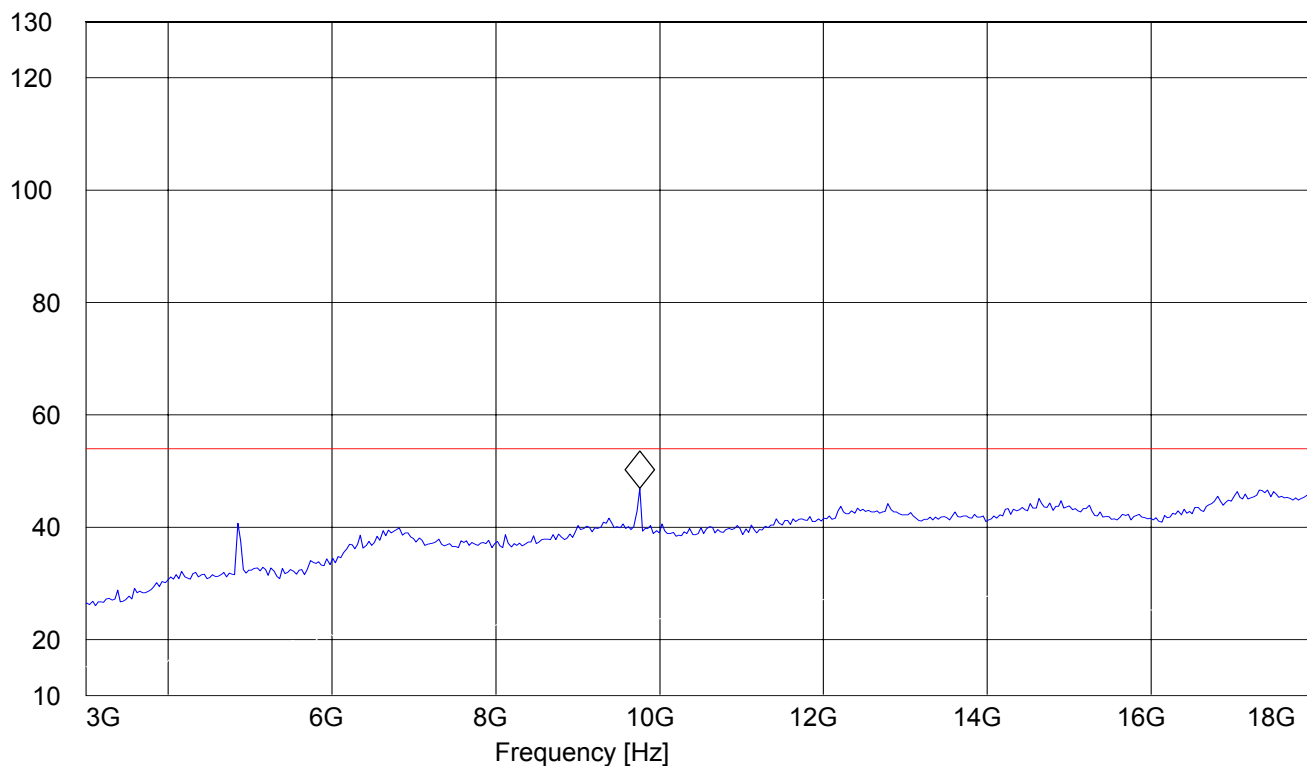
SWEEP TABLE:

"Spuri hi 3-18G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

Marker: 9.755511022 GHz 46.93 dBμV/m

Level [dBμV/m]



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Highest Channel (2462MHz): 1GHz – 3GHz

Data rate: 11Mbps

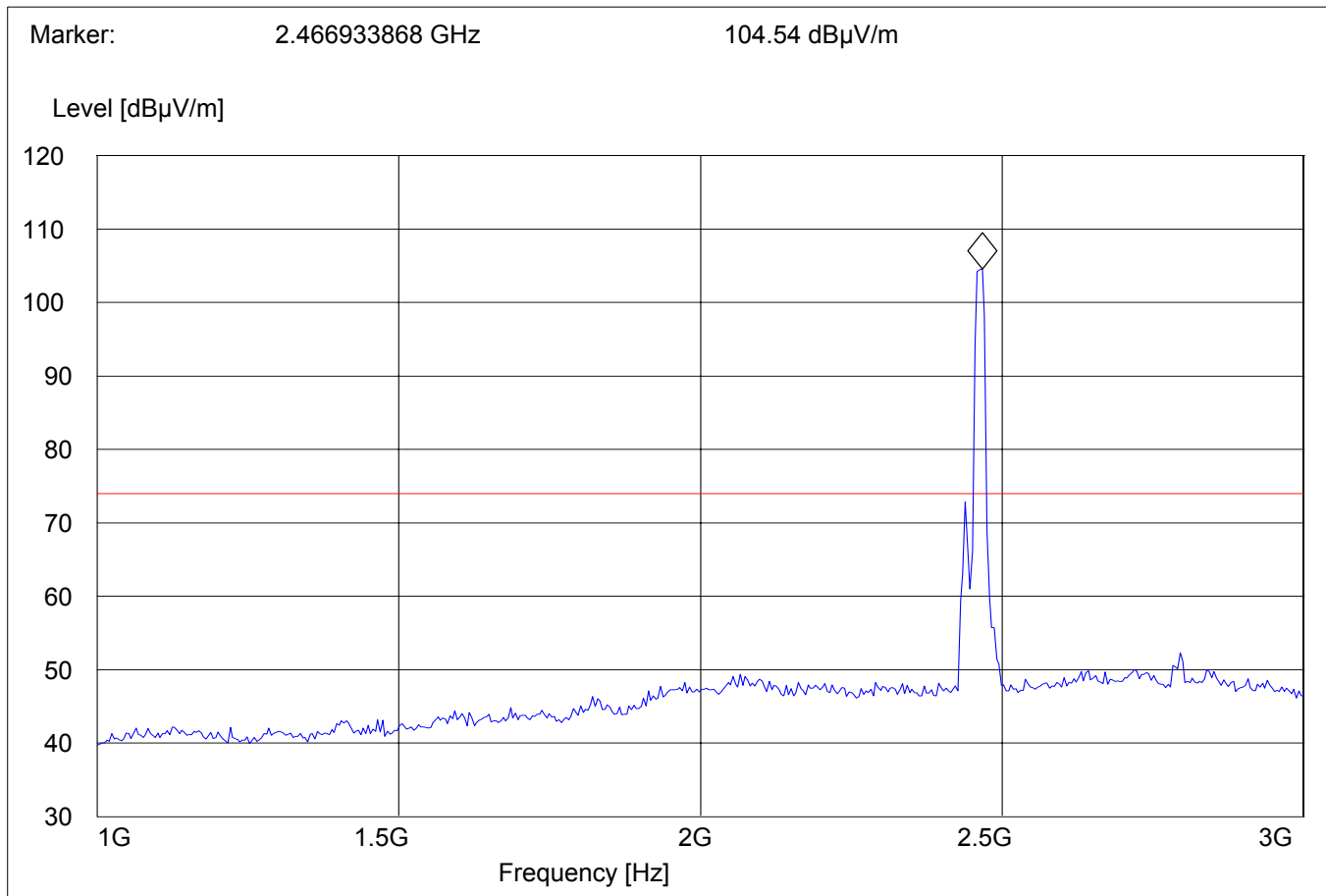
Power Level: 18dBm avg. power in packet

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

### SWEEP TABLE:

"Spuri hi 1-3G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Highest Channel (2462MHz): 3GHz – 18GHz

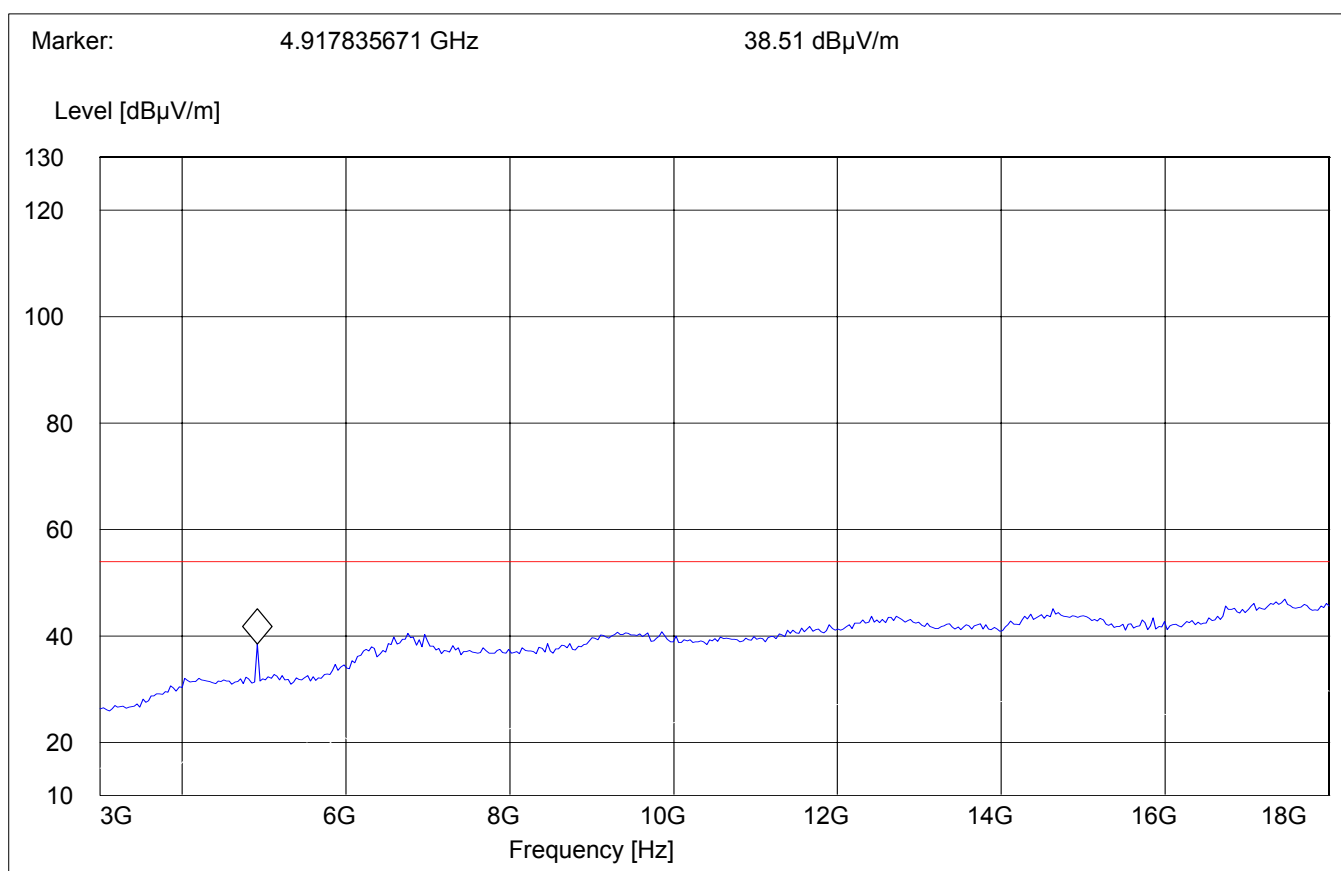
Data rate: 11Mbps

Power Level: 18dBm avg. power in packet

SWEEP TABLE:

"Spuri hi 3-18G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



## EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

18GHz – 25GHz

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

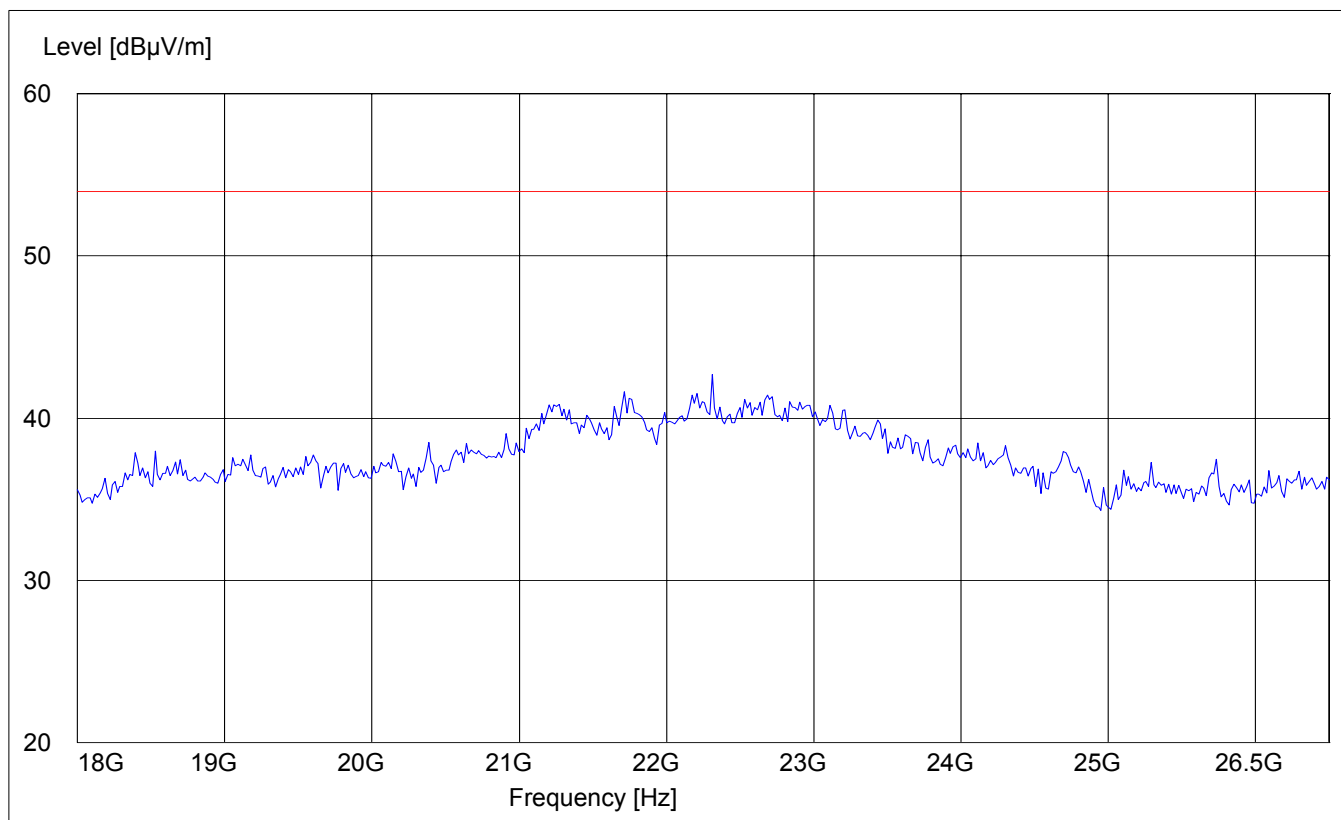
Data rate: 11Mbps

Power Level: 18dBm avg. power in packet

SWEEP TABLE:

"Spuri hi 18-25G"

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18 GHz	25 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)





## CONDUCTED EMISSIONS

§ 15.107/207

Measured with AC/DC power adapter

*SWEEP TABLE: "55022 cond"*

Short Description:		EN 55022 for 150KHz-30MHz			
Start	Stop	Detector	Meas	IF	Transducer
Frequency	Frequency		Time	Bandw.	
150.0 kHz	30.0 MHz	MaxPeak	Coupled	10 kHz	None

Technical specification: 15.107 / 15.207 (Revised as of August 20, 2002)

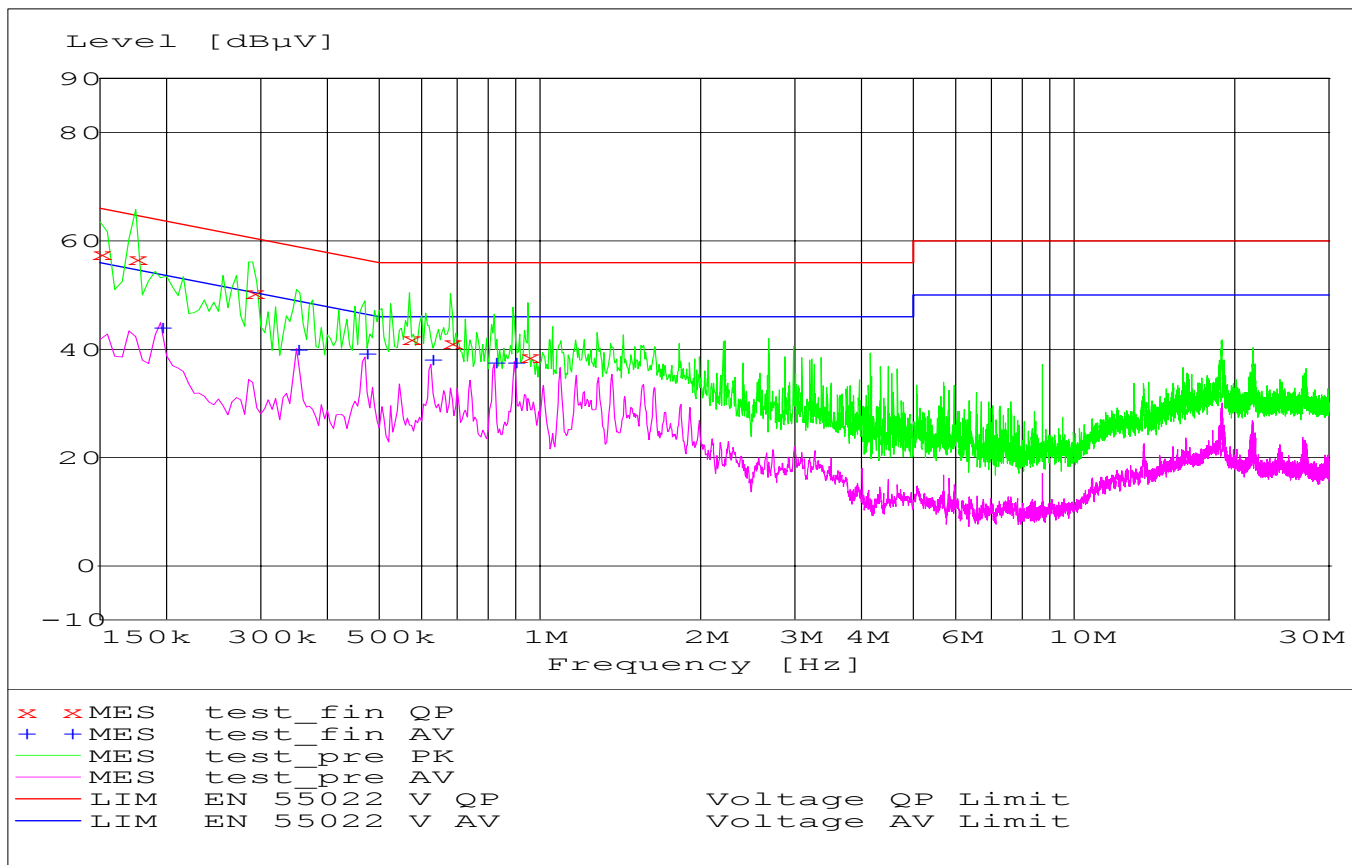
### Limit

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

\* Decreases with logarithm of the frequency

ANALYZER SETTINGS: RBW = 10KHz

VBW = 10KHz



**MEASUREMENT RESULT: "test\_fin QP"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.150000	57.60	0.0	66	8.4	N	GND
0.175000	56.70	0.0	65	8.0	N	GND
0.290000	50.50	0.0	61	10.0	N	GND
0.570000	42.00	0.0	56	14.0	L1	GND
0.680000	41.10	0.0	56	14.9	N	GND
0.950000	38.70	0.0	56	17.3	N	GND

**MEASUREMENT RESULT: "test\_fin AV"**

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.195000	44.10	0.0	54	9.7	L1	GND
0.350000	40.00	0.0	49	8.9	L1	GND
0.470000	39.10	0.0	47	7.5	L1	GND
0.625000	38.10	0.0	46	7.9	N	GND
0.820000	37.50	0.0	46	8.5	L1	GND
0.895000	37.50	0.0	46	8.5	N	GND

**RECEIVER SPURIOUS RADIATION****§ 15.109****Limits**

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

**NOTE:**

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.

## RECEIVER SPURIOUS RADIATION

§ 15.109

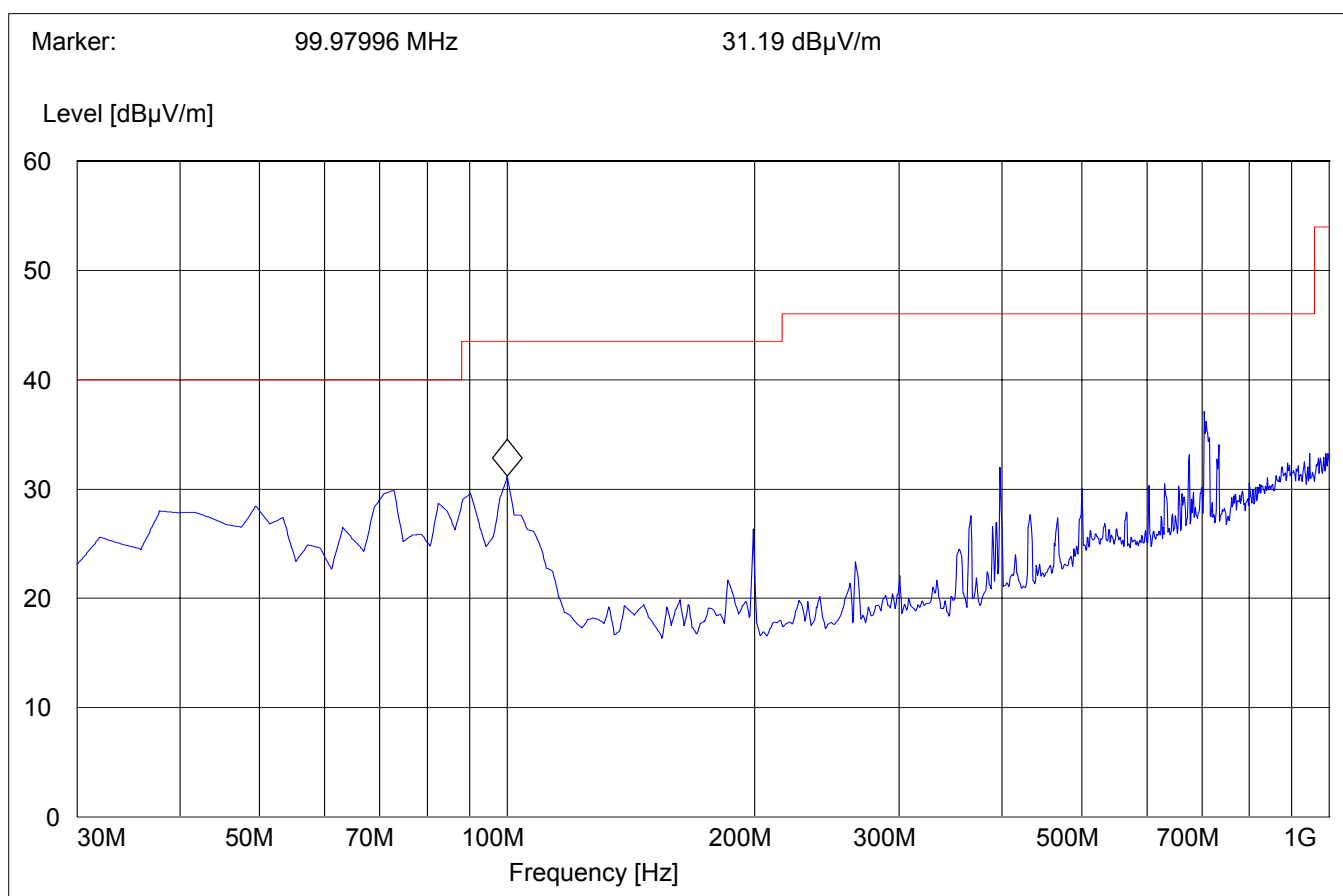
30MHz – 1GHz

Worst case plot for both polarities

SWEEP TABLE:

"Spuri hi 30-1G"

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



## RECEIVER SPURIOUS RADIATION

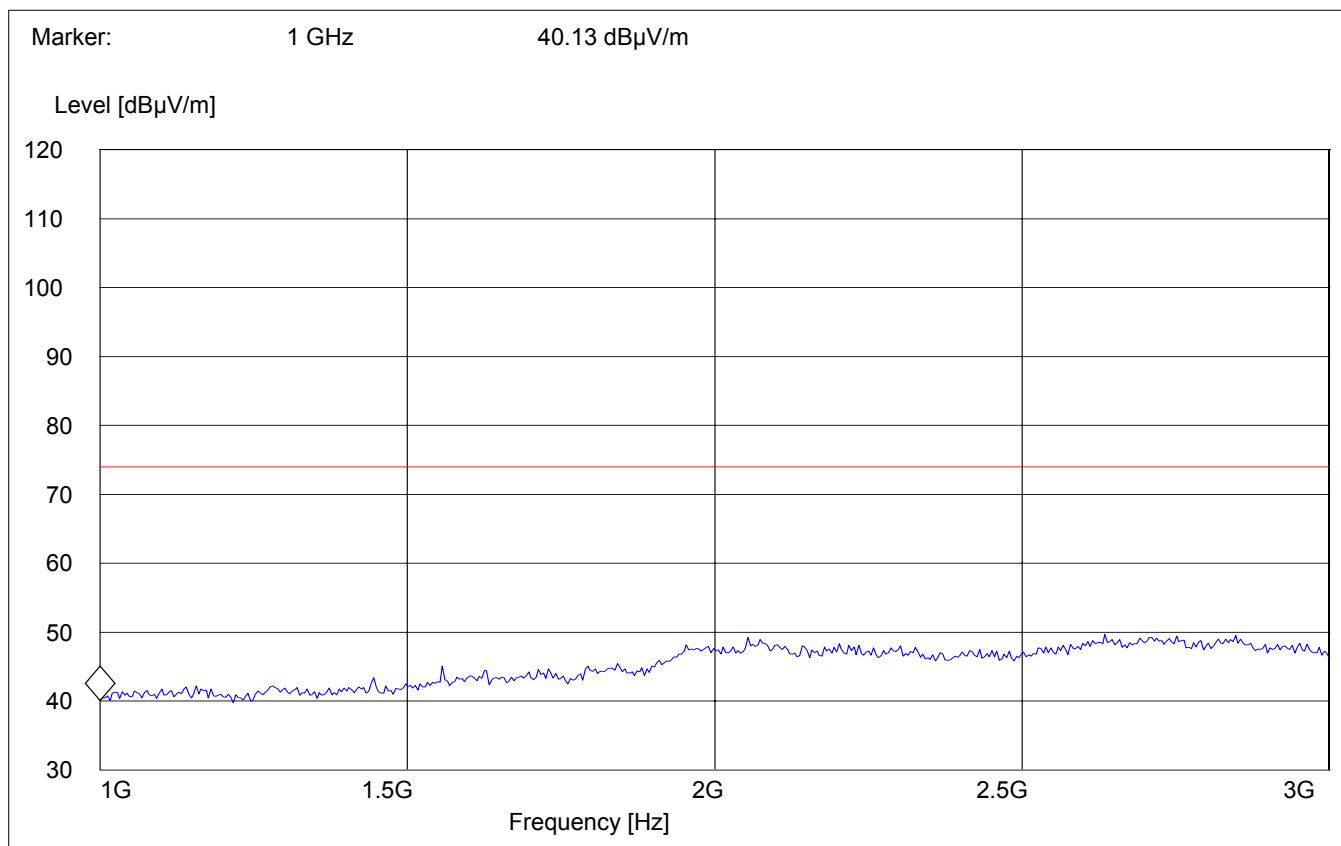
## § 15.109

1GHz – 3GHz

### SWEEP TABLE:

Start	Stop	Detector	Meas.	RBW	VBW	Transducer
Frequency	Frequency	Time	Bandw.			
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)

"Spuri hi 1-3G"



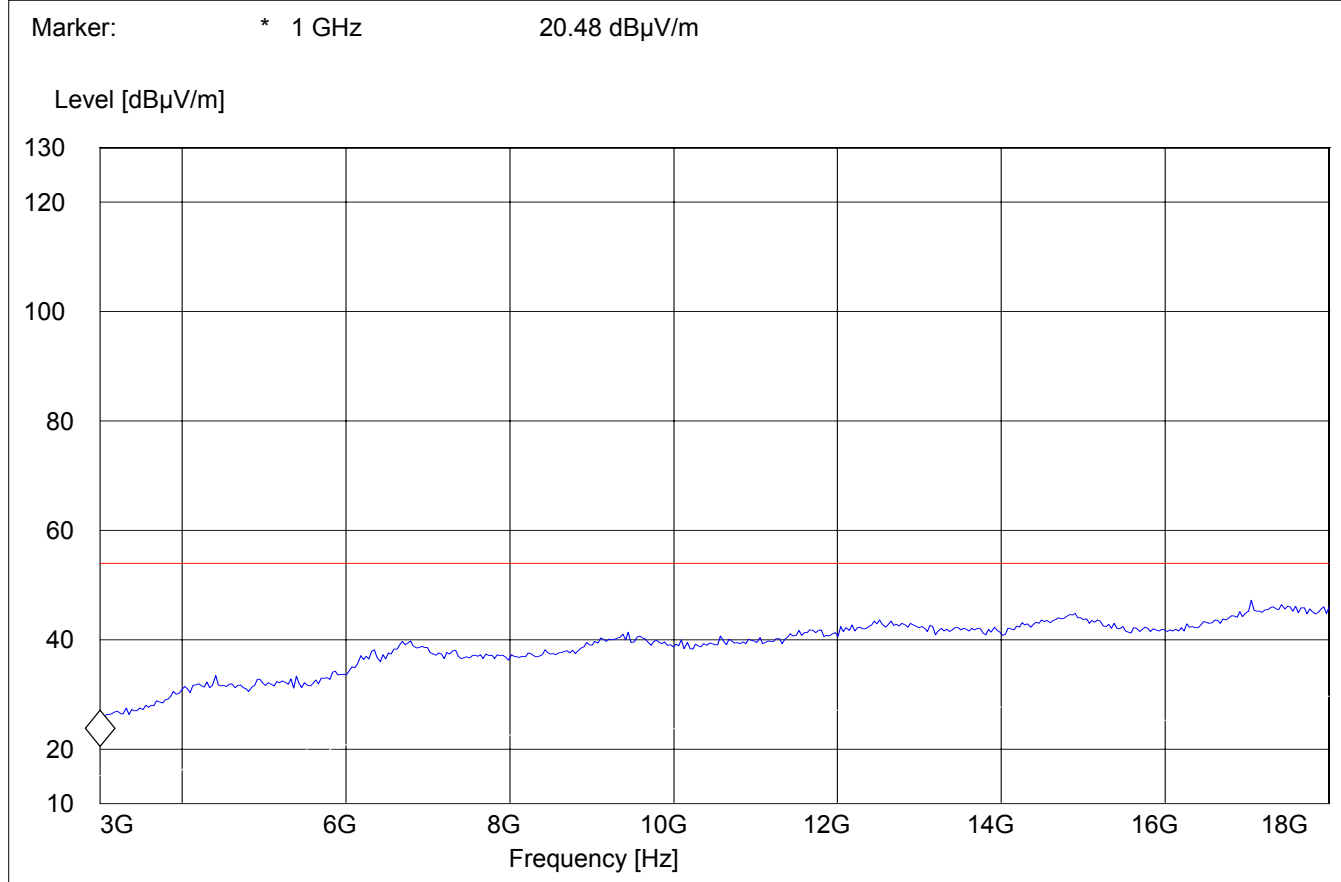
## RECEIVER SPURIOUS RADIATION 3GHz – 18GHz

§ 15.109

### SWEEP TABLE:

Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

"Spuri hi 3-18G"

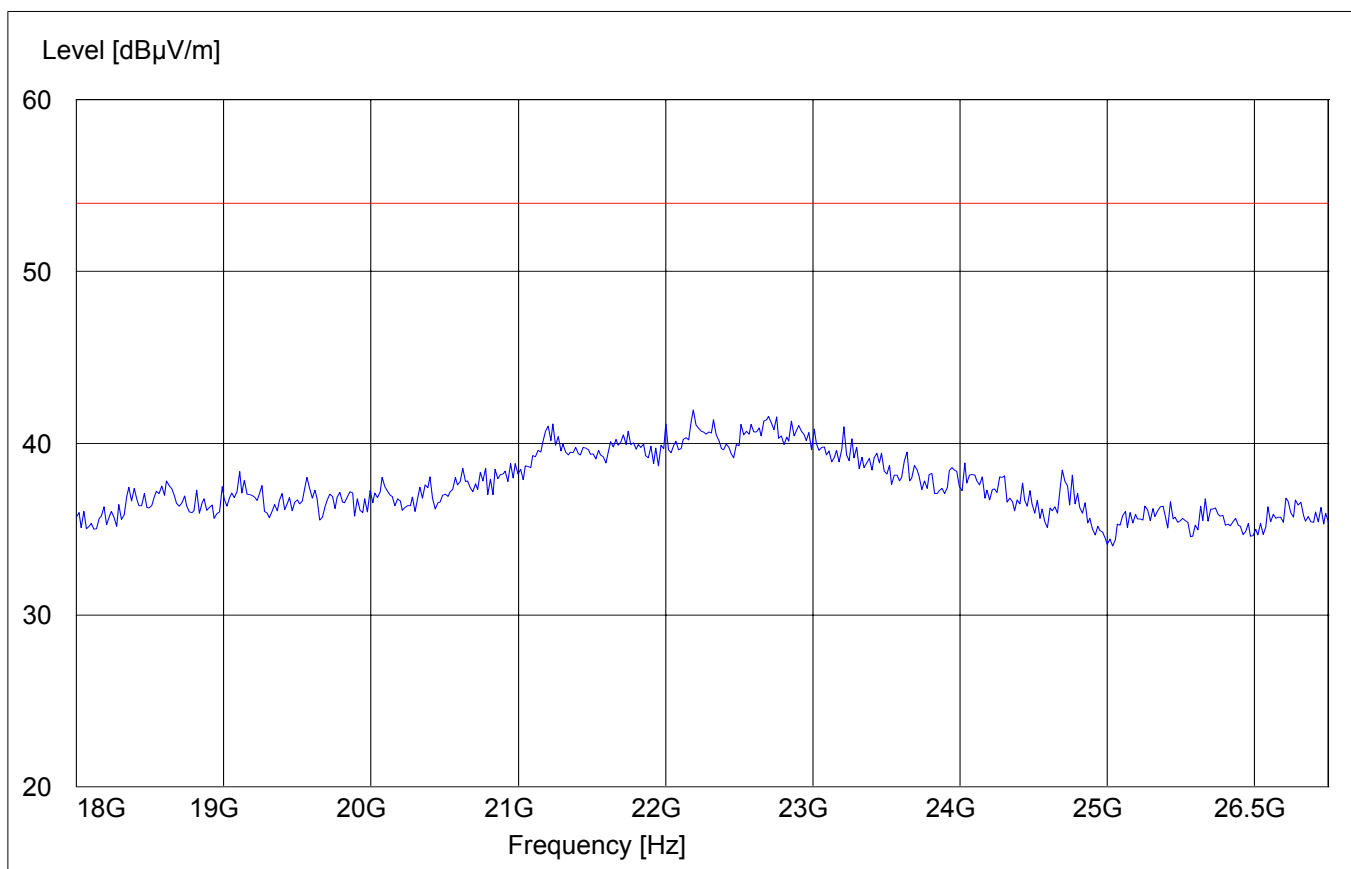


## RECEIVER SPURIOUS RADIATION 18GHz – 25GHz

§ 15.109

### SWEEP TABLE:

		"Spuri hi 18-25G"			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18 GHz	25 GHz	MaxPeak	Coupled	1 MHz	#141 horn (dBi)



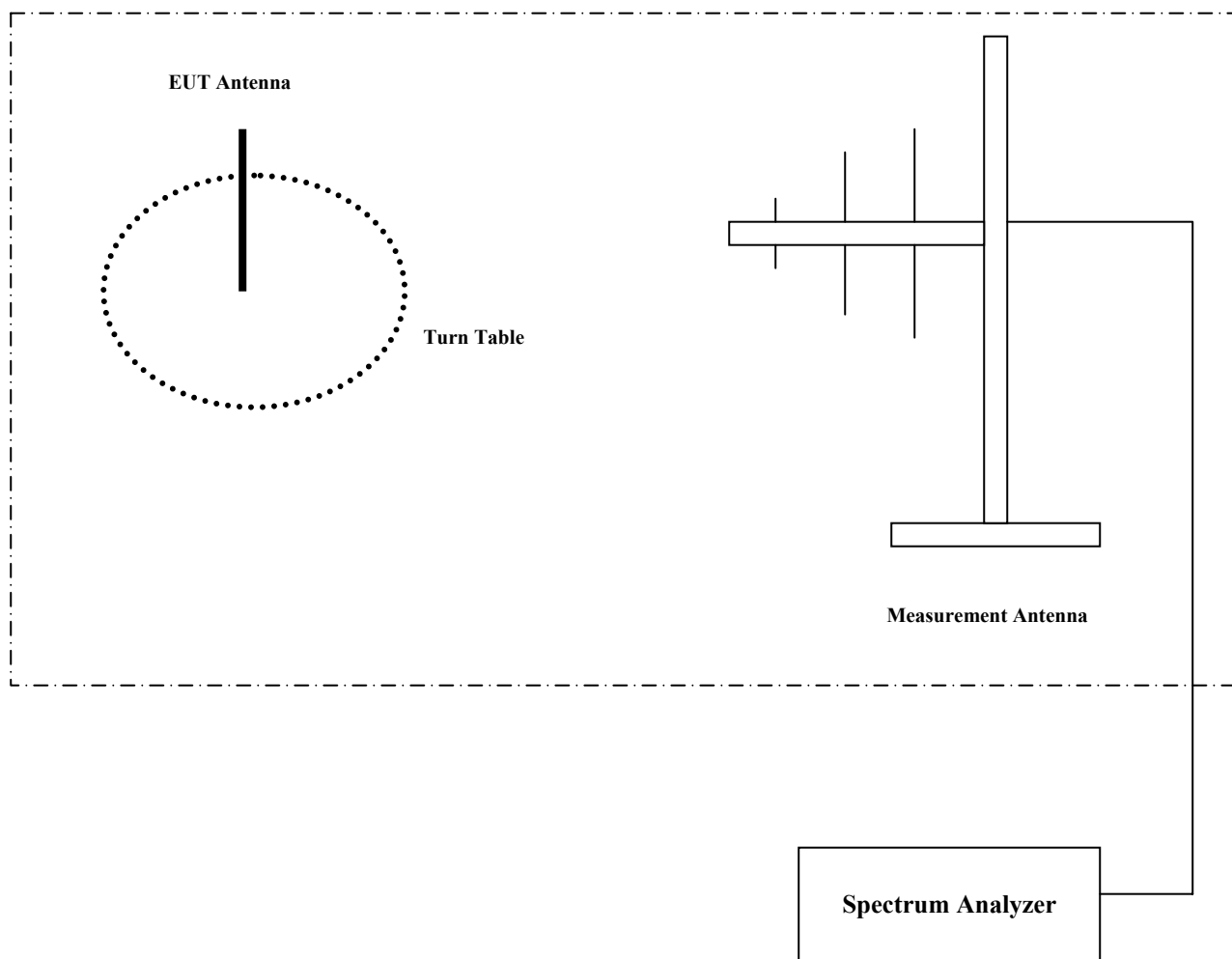
**TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS**

<b>No</b>	<b>Instrument/Ancillary</b>	<b>Type</b>	<b>Manufacturer</b>	<b>Serial No.</b>
<b>01</b>	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107
<b>02</b>	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	826880/010
<b>03</b>	Biconilog Antenna	3141	EMCO	0005-1186
<b>04</b>	Horn Antenna (700M-18GHz)	SAS-200/571	AH Systems	325
<b>05</b>	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240
<b>06</b>	2-3GHz Band reject filter	BRM50701	Microtronics	6
<b>07</b>	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02
<b>08</b>	Pre-Amplifier	TS-ANA	Rohde & Schwarz	--
<b>09</b>	Pre-Amplifier	JS4-00102600	Miteq	00616



**BLOCK DIAGRAMS**  
**Radiated Testing**

**ANECHOIC CHAMBER**



**Conducted Testing**

