

**CETECOM Inc.**



**CETECOM Inc.**

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Issued test report consists of 62 Pages

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**FCC LISTED, REG. NO.: 101450  
&  
RECOGNIZED BY INDUSTRY CANADA  
IC – 3925**

**Test report no.: EMC\_381FCC15.247\_2002  
FCC Part 15.247 for DSSS systems / CANADA RSS-210  
(BCM94306CB)  
FCC ID: QDS-BRCM1006**

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- 1            **General information**
- 1.1         **Notes**

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 generalisations 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: Philip Kim**

#### **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** : **400 East Caribbean drive**  
**City / Zip Code** : **Sunnyvale, 94089**  
**Country** : **USA**  
**Contact** : **Chris McGough**  
**Telephone** : **408-922-5810**  
**Tele-fax** : **408-202-3004**  
**e-mail** : [cmcgough@broadcom.com](mailto:cmcgough@broadcom.com)

**1.4 Application details**

Date of receipt of application : 2002-11-21  
Date of receipt test item : 2002-11-21  
Date of test : 2002-11-21 and 2002-11-22

**1.5 Test item**

Manufacturer : See applicant  
Model No. : BCM94306CB  
[Description](#) : [802.11g Wireless LAN PCMCIA type CardBus](#)  
FCC-ID : QDS-BRCM1006

**Additional information**

Frequency : 2412MHz – 2462MHz  
Type of modulation : OFDM (orthogonal frequency division multiplexing)  
Number of channels : 11  
Antenna : Chip  
Power supply : 3.3 VDC  
Output power : 15dBm Average (rated power)  
Extreme temp. Tolerance : -30 to +55 °C

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


**Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.**

**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")	<b>Passed</b>

**Technical responsibility for area of testing:**

2002-11-27	EMC & Radio	Lothar Schmidt (Manager)	
<b>Date</b>	<b>Section</b>	<b>Name</b>	<b>Signature</b>

**Responsible for test report and project leader:**

2002-11-27	EMC & Radio	Philip Kim (EMC Engineer)	
<b>Date</b>	<b>Section</b>	<b>Name</b>	<b>Signature</b>

**2.2 Test report**

**TEST REPORT**

**Test report no. : EMC\_381FCC15.247\_2002  
(BCM94306CB)**

**TEST REPORT REFERENCE**

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**ANTENNA GAIN****§ 15.204**

The antenna gain of the complete system is calculated by the difference of conducted power of the module and the radiated power in EIRP.

	Low channel	Mid channel	High channel
<b>Conducted Power</b>	<b>25.55 dBm</b>	<b>24.48 dBm</b>	<b>24.11 dBm</b>
<b>Raidated Power (EIRP)</b>	<b>26.08 dBm</b>	<b>30.02 dBm</b>	<b>28.01 dBm</b>
<b>Antenna Gain</b>	<b>0.53 dBi</b>	<b>5.54 dBi</b>	<b>3.9 dBi</b>

The calculated antenna gain is between 0.53 dBi and 5.54dBi.

**SPECTRUM BANDWIDTH OF DSSS/OFDM SYSTEM**  
**6 dB bandwidth**

§15.247(a) (2)

TEST CONDITIONS		6 dB BANDWIDTH (MHz)		
Frequency (MHz)		2412	2437	2462
T <sub>nom</sub> (23)°C	V <sub>nom</sub> (3.3)VDC	16.38	16.53	16.43

**LIMIT**

**SUBCLAUSE §15.247(a) (2)**

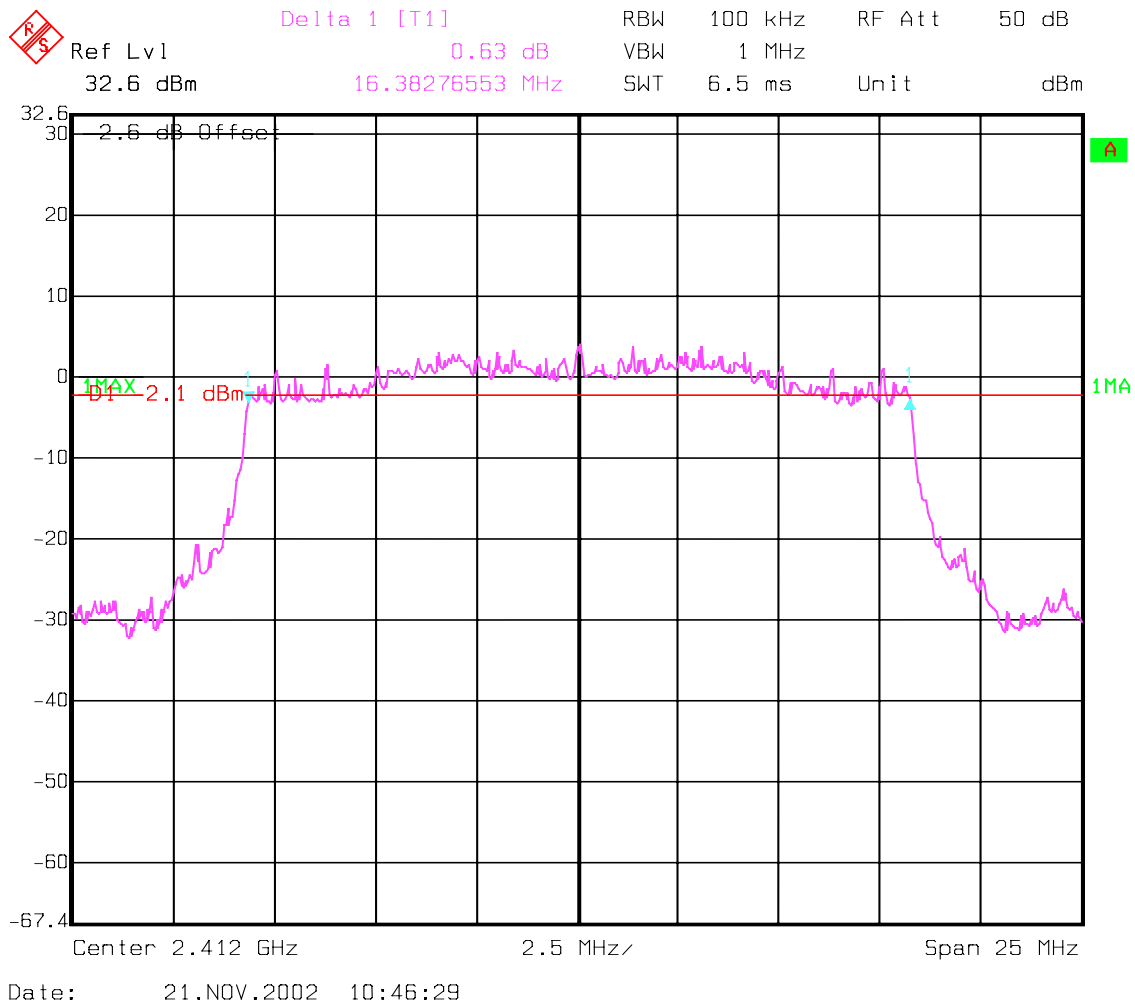
**The minimum 6dB bandwidth shall be at least 500 KHz**



## SPECTRUM BANDWIDTH OF DSSS SYSTEM 6 dB bandwidth

§15.247(a) (2)

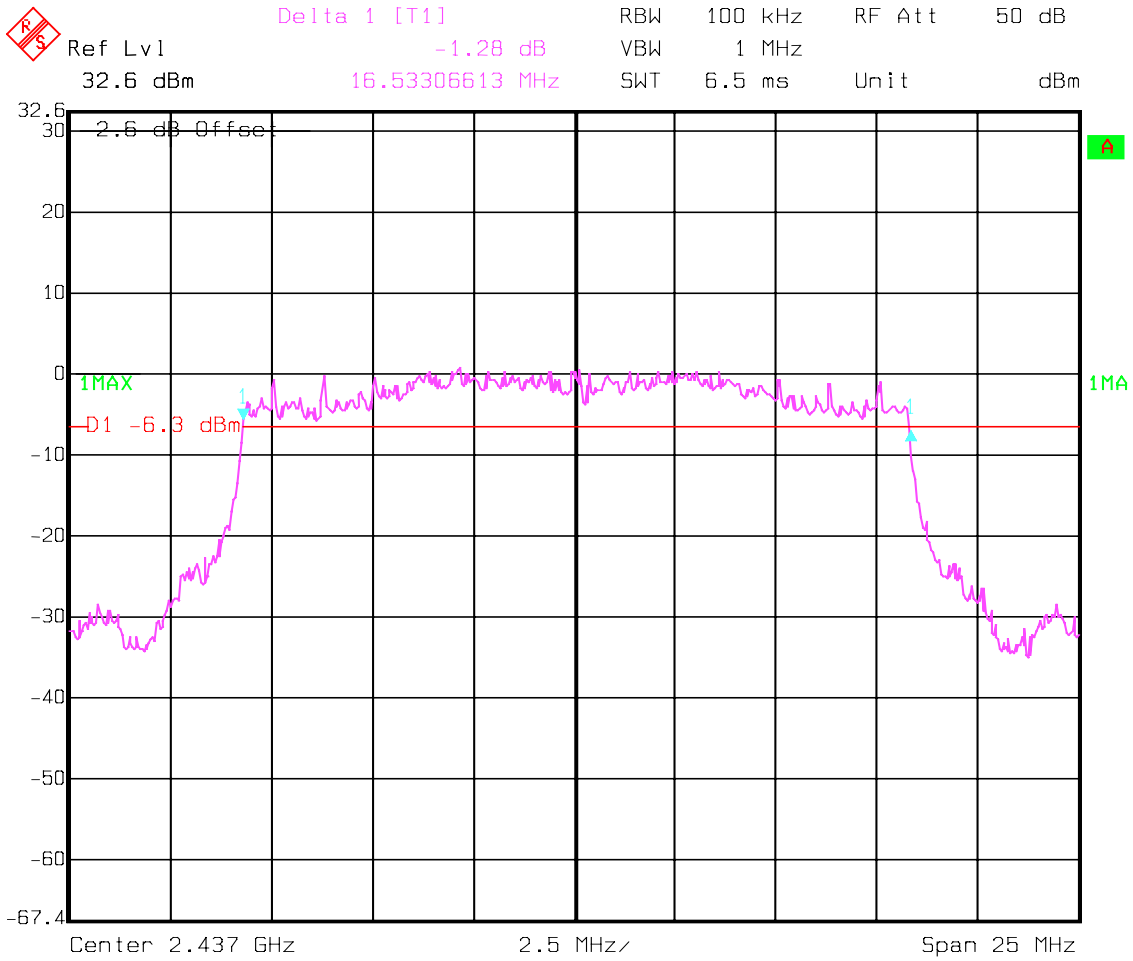
Lowest Channel: 2412MHz



SPECTRUM BANDWIDTH OF DSSS/OFDN SYSTEM  
6 dB bandwidth

§15.247(a) (2)

Mid Channel: 2437MHz

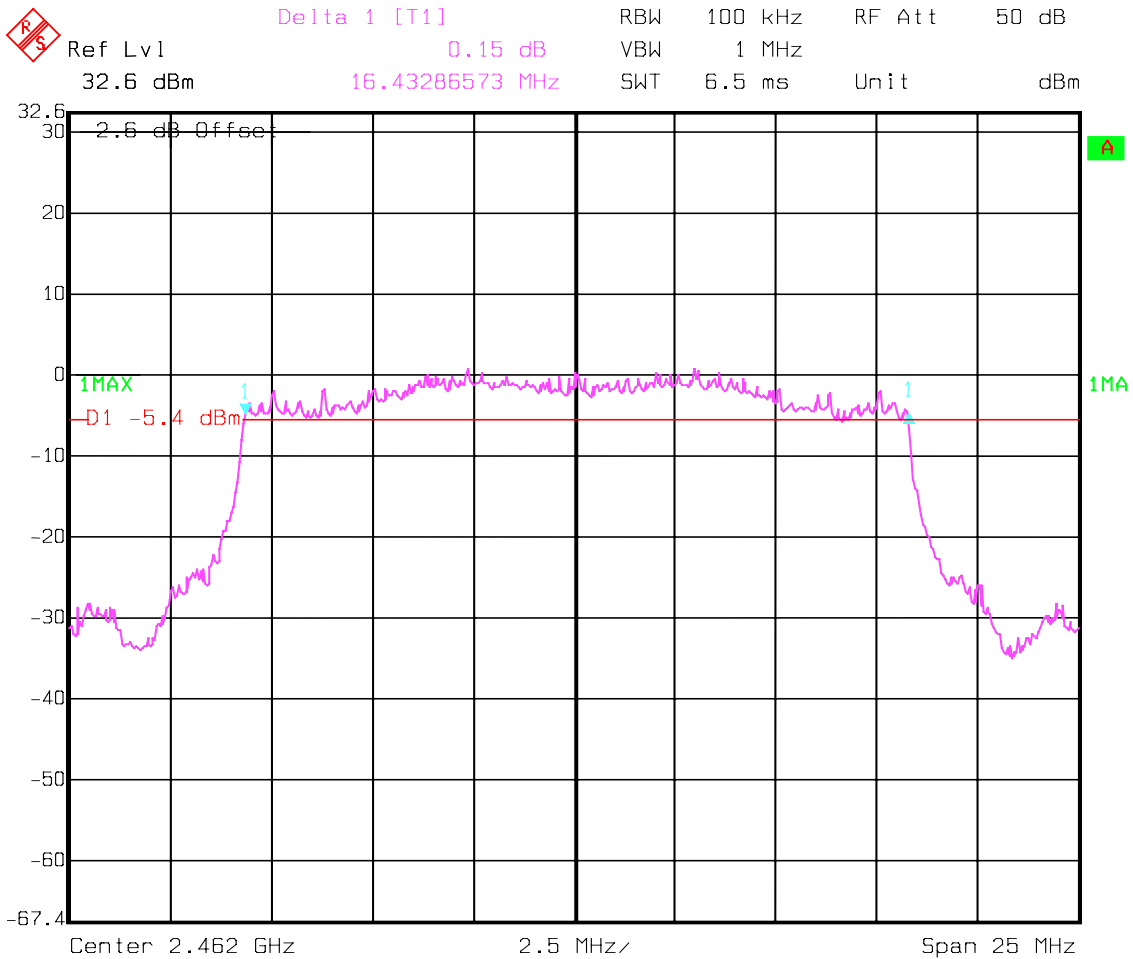


Date: 21.NOV.2002 10:29:55

**SPECTRUM BANDWIDTH OF DSSS/OFDM SYSTEM**  
**6 dB bandwidth**

§15.247(a) (2)

**Highest Channel: 2462MHz**



Date: 21.NOV.2002 11:00:24

**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	*25.55	*24.48	*24.11
Measurement uncertainty		±0.5dBm			

RBW / VBW : 10MHz

\*To comply with following;

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

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

(Therefore correction factor of 2.14, 2.18 & 2.15 is added to low, mid& high channel measurements respectively)

**LIMIT**

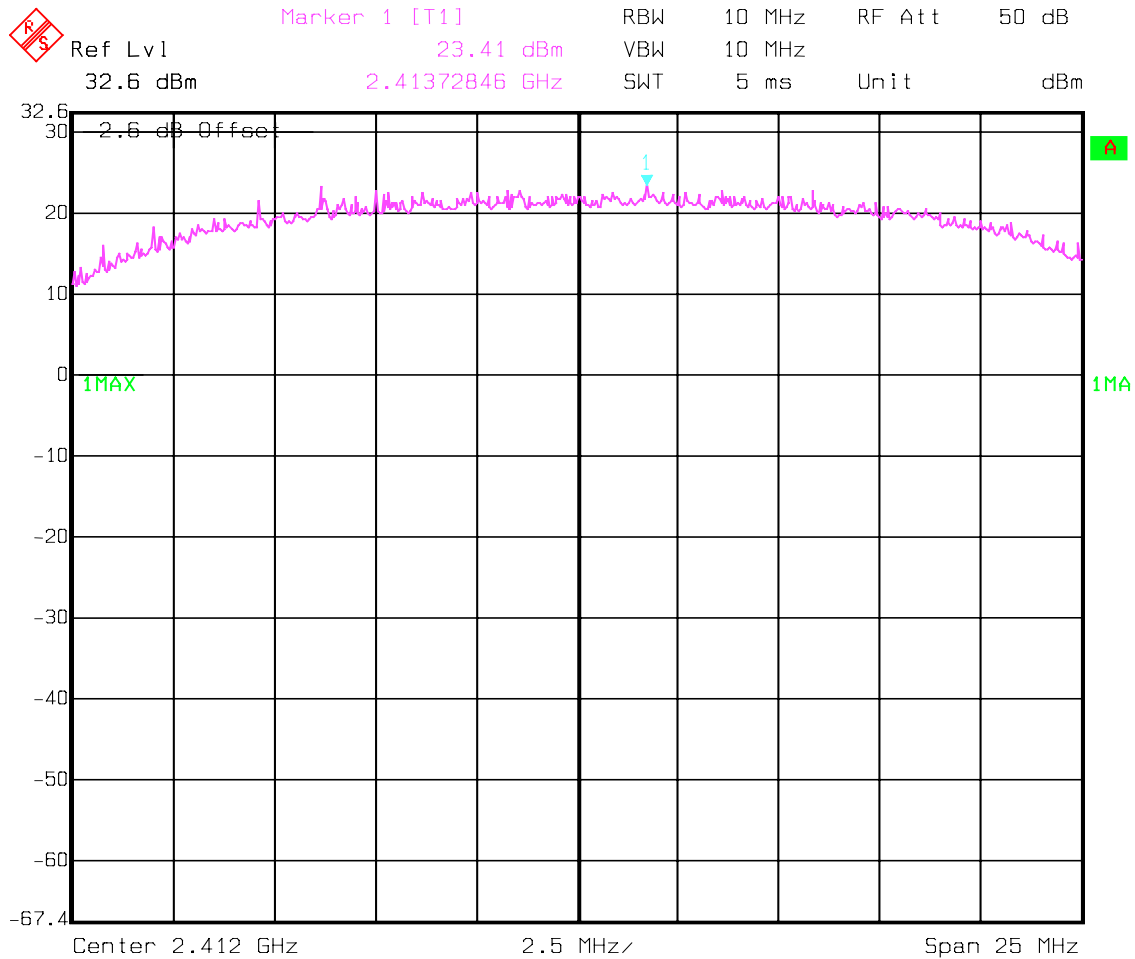
**SUBCLAUSE § 15.247 (b) (1)**

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

PEAK OUTPUT POWER (CONDUCTED)

§15.247 (b) (1)

Lowest Channel: 2412MHz

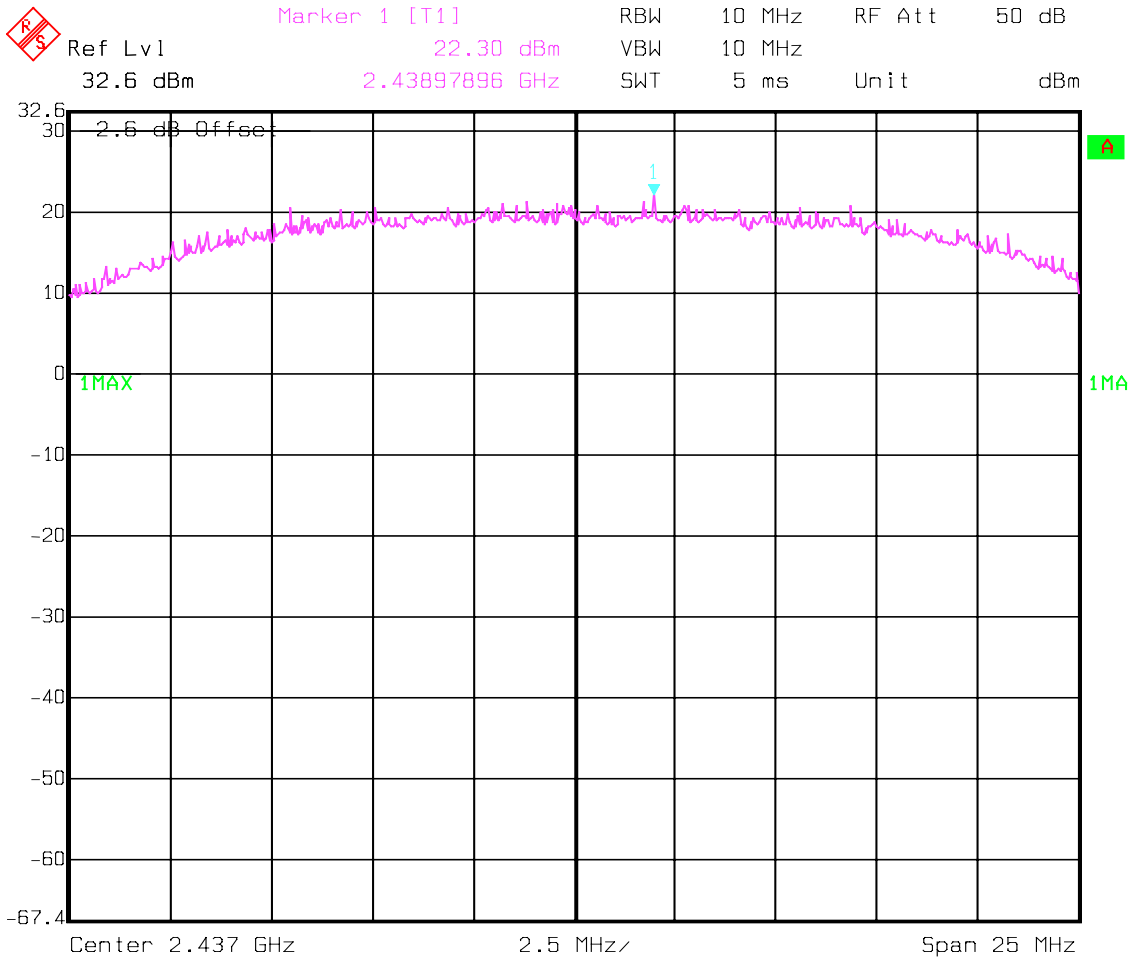


Date: 21.NOV.2002 09:15:39

PEAK OUTPUT POWER (CONDUCTED)

§15.247 (b)

Mid Channel: 2437MHz

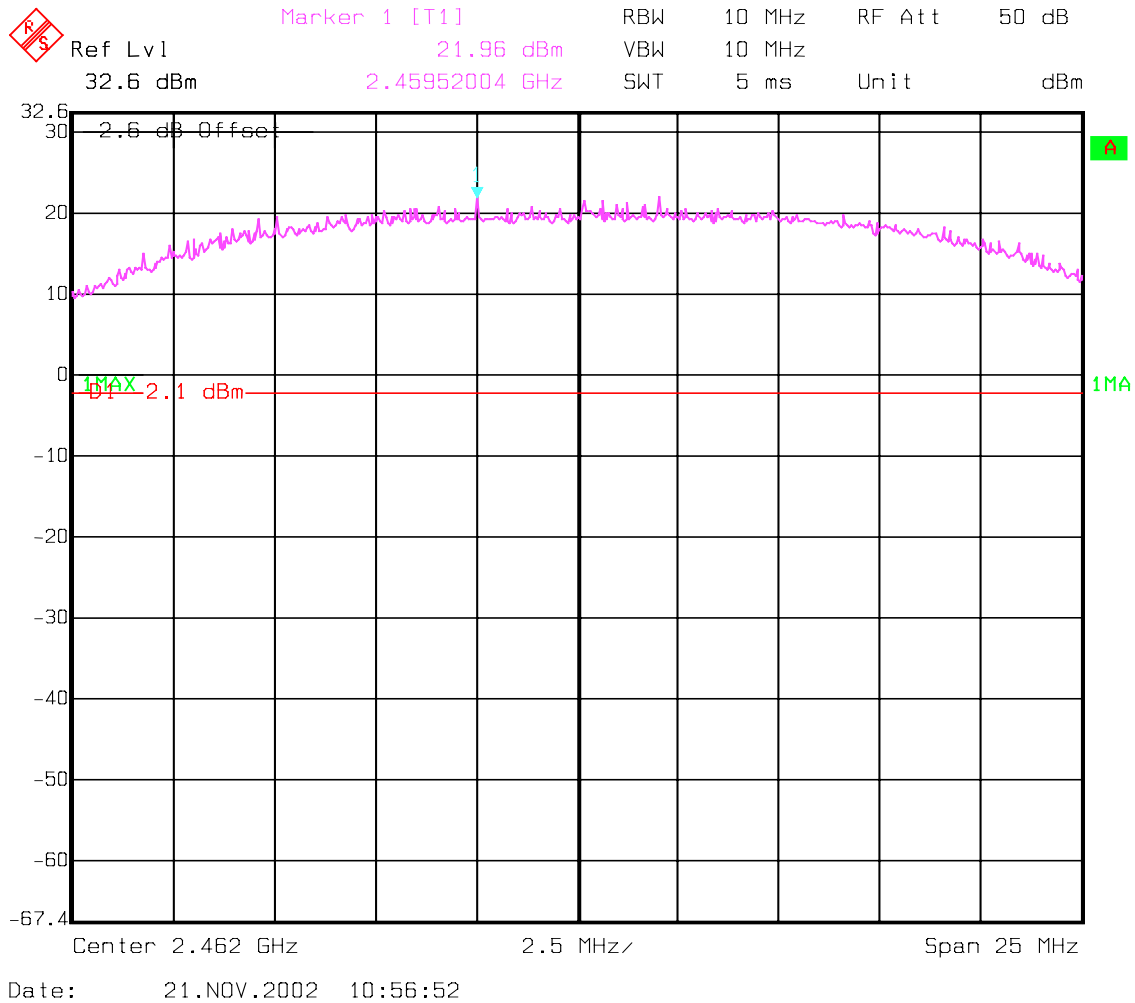


Date: 21.NOV.2002 09:49:43

PEAK OUTPUT POWER (CONDUCTED)

§15.247 (b)

Highest Channel: 2462MHz



**MAXIMUM PEAK OUTPUT POWER  
(RADIATED)**

§ 15.247 (b) (1)

**EIRP:**

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
		2412	2437	2462
Frequency (MHz)				
T <sub>nom</sub> (23)°C	V <sub>nom</sub> (3.3)VDC	*26.08	*30.02	*28.01
Measurement uncertainty		±0.5dBm		

RBW/VBW : 10MHz

\*To comply with following;

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

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

(Therefore correction factor of 2.14, 2.18 & 2.15 is added to low, mid& high channel measurements respectively)

**LIMIT**

**SUBCLAUSE § 15.247 (b) (1)**

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



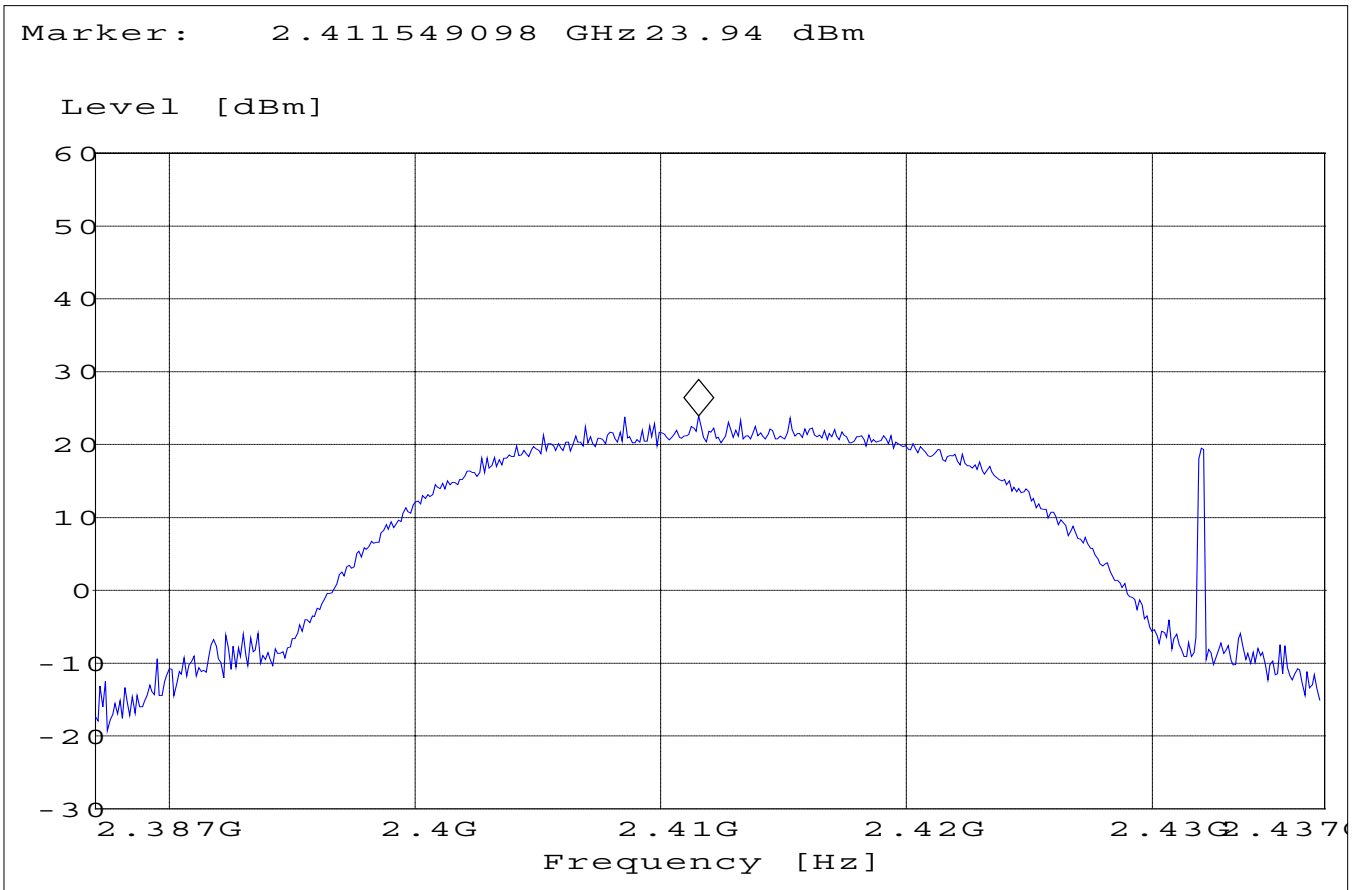
PEAK OUTPUT POWER (RADIATED)

§15.247 (b) (1)

Lowest Channel: 2412MHz

SWEEP TABLE: "EIRP RLAN ch-1"

Short Description:		EIRP RLAN channel-2412MHz		
Start	Stop	Detector	Meas. Time	IF BW
2.387GHz	2.437GHz	MaxPeak	Coupled	10 MHz



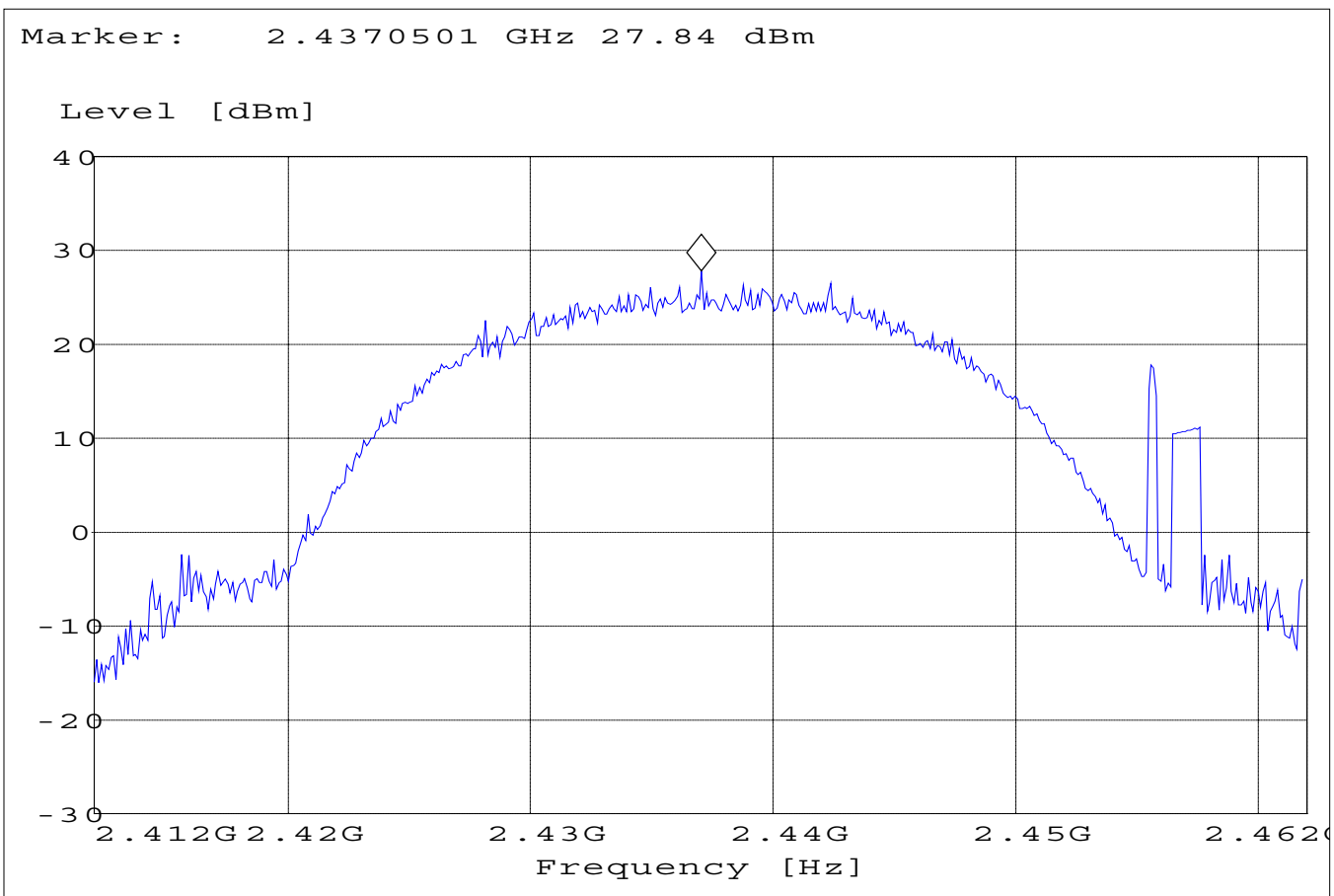
PEAK OUTPUT POWER (RADIATED)

§15.247 (b) (1)

Mid Channel: 2437MHz

SWEEP TABLE: "EIRP RLAN CH6"

Short Description:		EIRP RLAN channel-2437MHz		
Start	Stop	Detector	Meas.	IF
Frequency	Frequency	Time	BW	
2.412GHz	2.462GHz	MaxPeak	Coupled	10 MHz



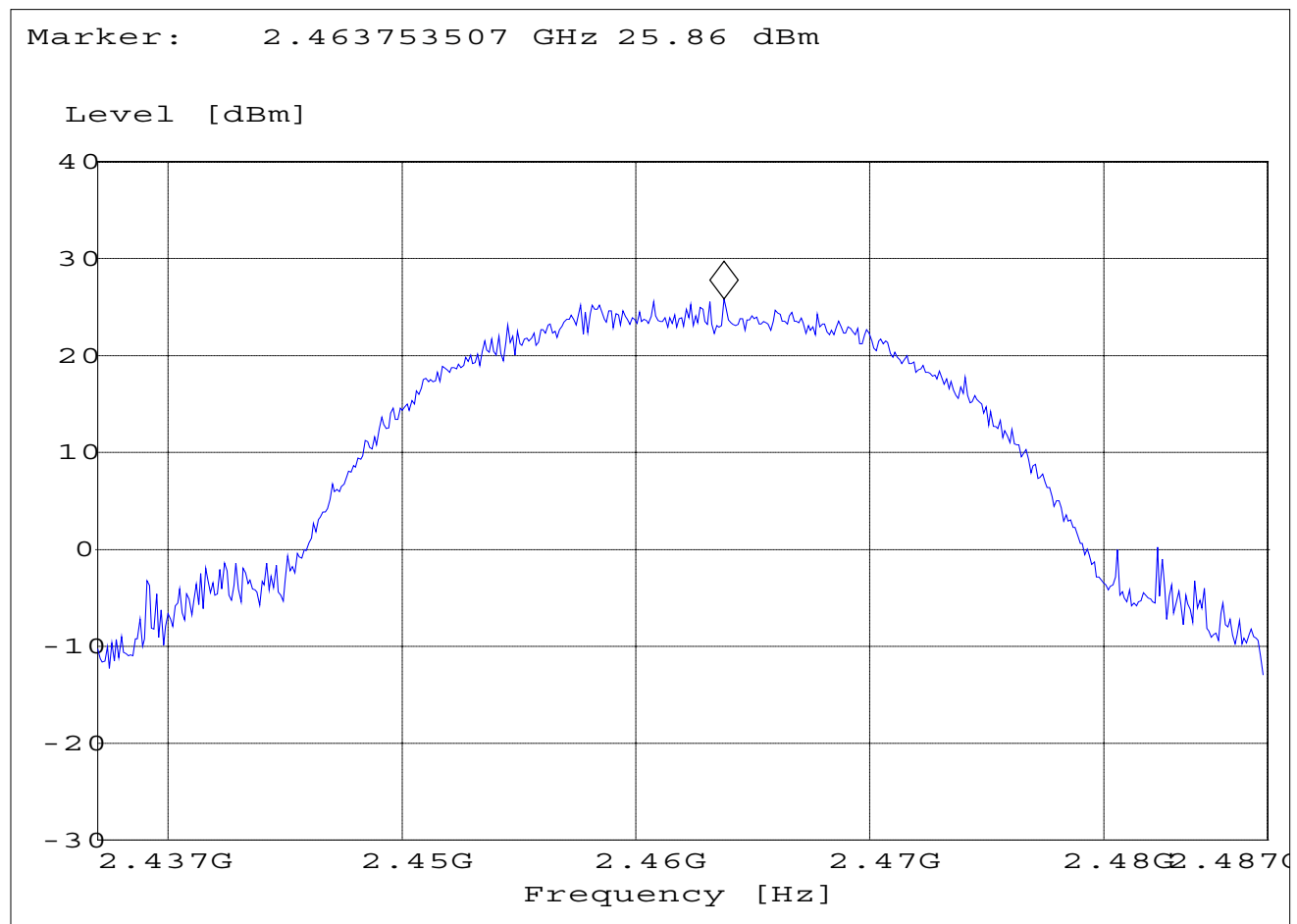
PEAK OUTPUT POWER (RADIATED)

§15.247 (b) (1)

Highest Channel: 2462MHz

SWEEP TABLE: "EIRP RLAN CH11"

Short Description:		EIRP RLAN channel-2462MHz		
Start	Stop	Detector	Meas.	IF
Frequency	Frequency		Time	BW
2.437GHz	2.487GHz	MaxPeak	Coupled	10 MHz



**POWER SPECTRAL DENSITY**

**§15.247 (d)**

TEST CONDITIONS		POWER SPECTRAL DENSITY (dBm)		
		2412	2437	2462
T <sub>nom</sub> (23)°C	V <sub>nom</sub> (3.3)VDC	-0.99	-5.15	-3.72

**LIMIT**

**SUBCLAUSE §15.247(d)**

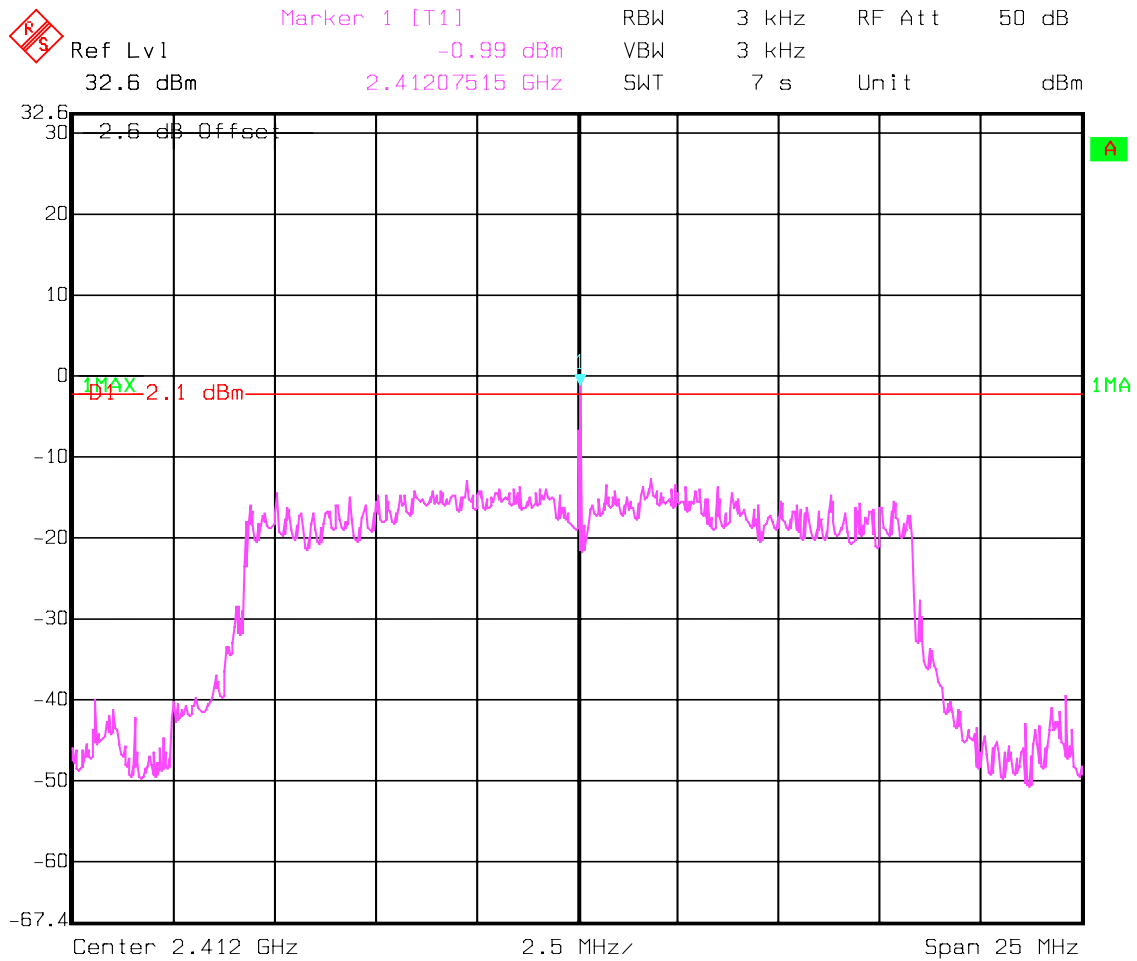
**The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band**

**ANALYZER SETTINGS: RBW=3KHz , VBW=3KHz**

## POWER SPECTRAL DENSITY

§15.247(d)

Lowest Channel: 2412MHz

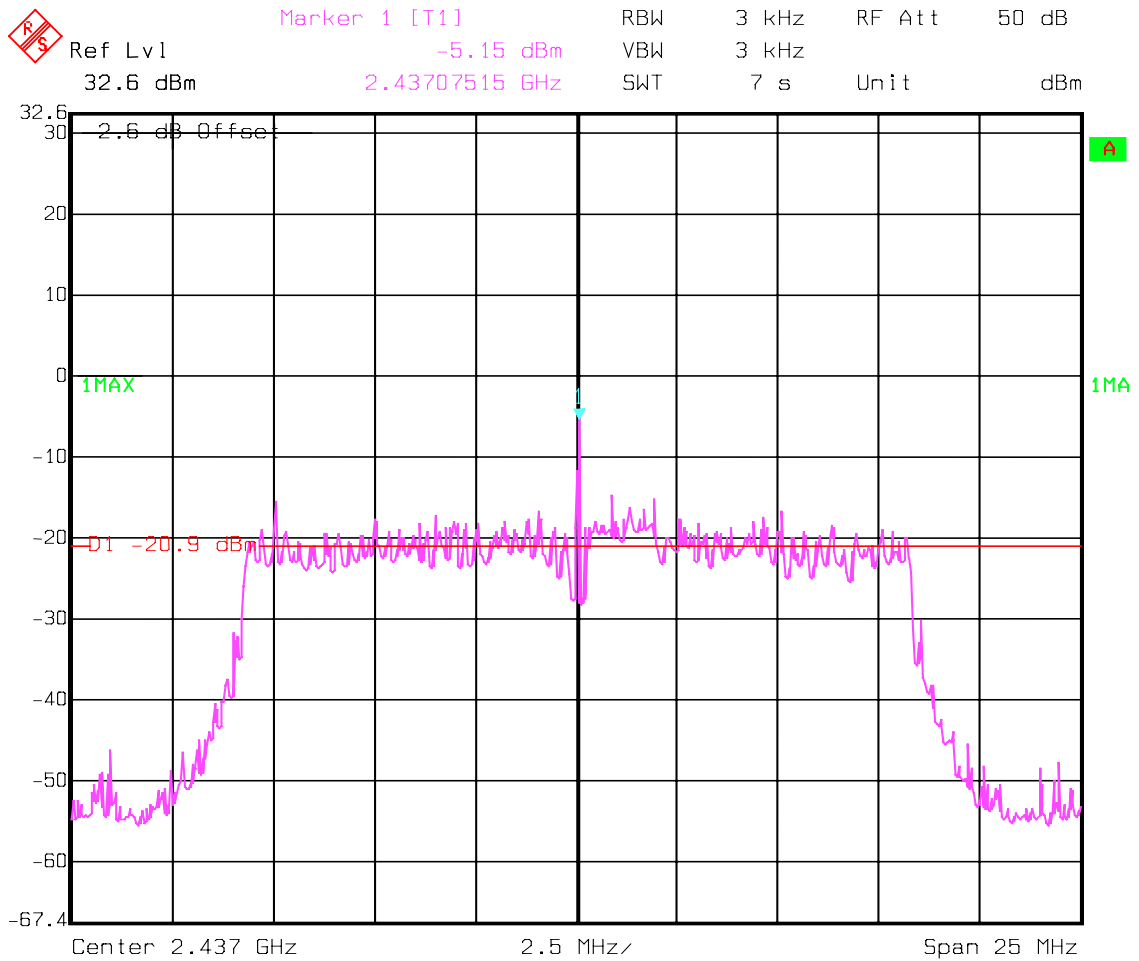


Date: 21.NOV.2002 10:48:55

## POWER SPECTRAL DENSITY

§15.247(d)

Mid Channel: 2437MHz

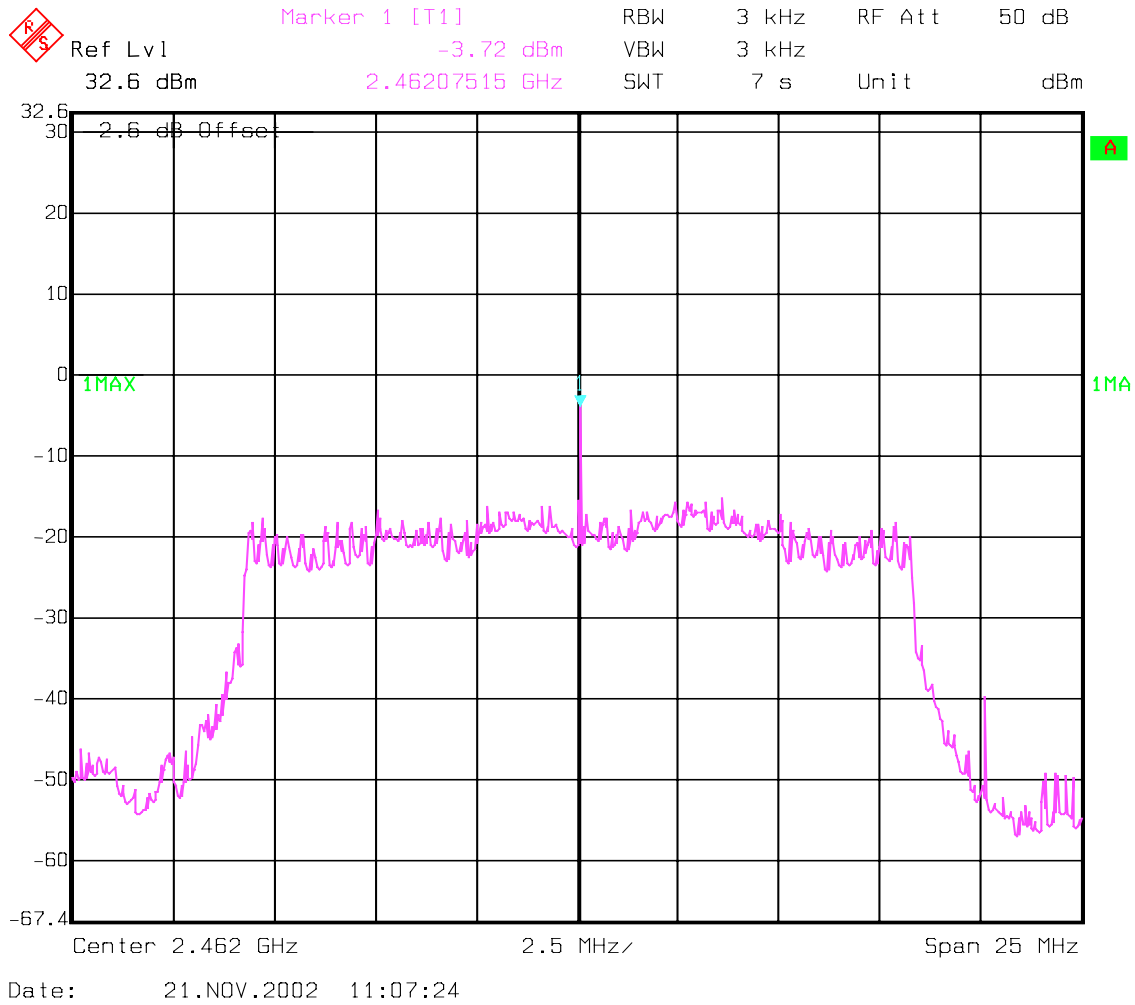


Date: 21.NOV.2002 10:37:09

POWER SPECTRAL DENSITY

§15.247(d)

Highest Channel: 2462MHz



**POWER SPECTRAL DENSITY**

**RSS-210**

TEST CONDITIONS		POWER SPECTRAL DENSITY (dBm/MHz)		
		2412	2437	2462
Frequency (MHz)				
T <sub>nom</sub> (23)°C	V <sub>nom</sub> (3.3)VDC	11.77	8.91	8.57

Correction factor of 60dBm is added to convert measured values from dBm/Hz to dBm/Mhz

**LIMIT**

**RSS-210**

The peak power spectral density shall be  $\leq 50\text{mW/MHz}$  (17dBm/MHz)

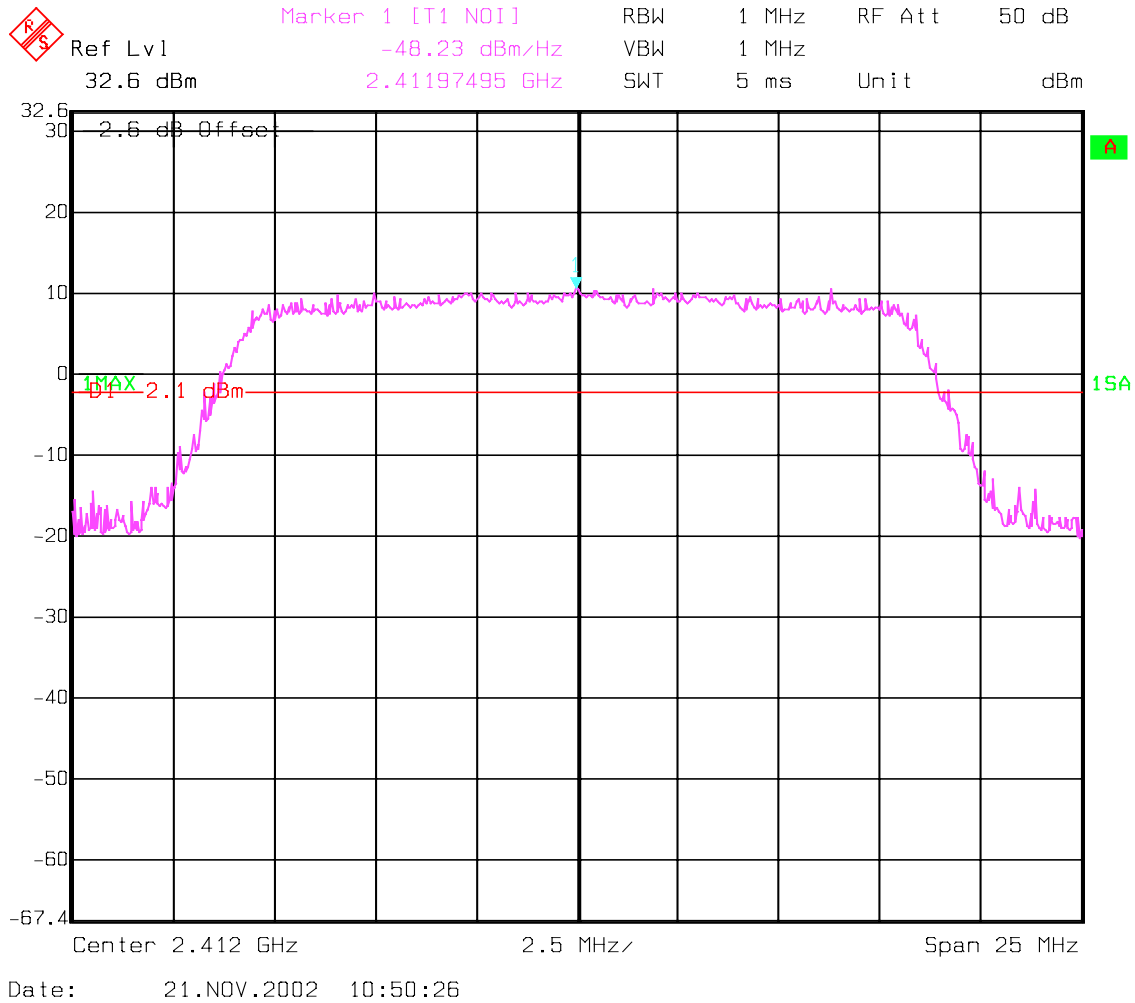
ANALYZER SETTINGS: RBW=1MHz , VBW=1MHz



POWER SPECTRAL DENSITY

RSS-210

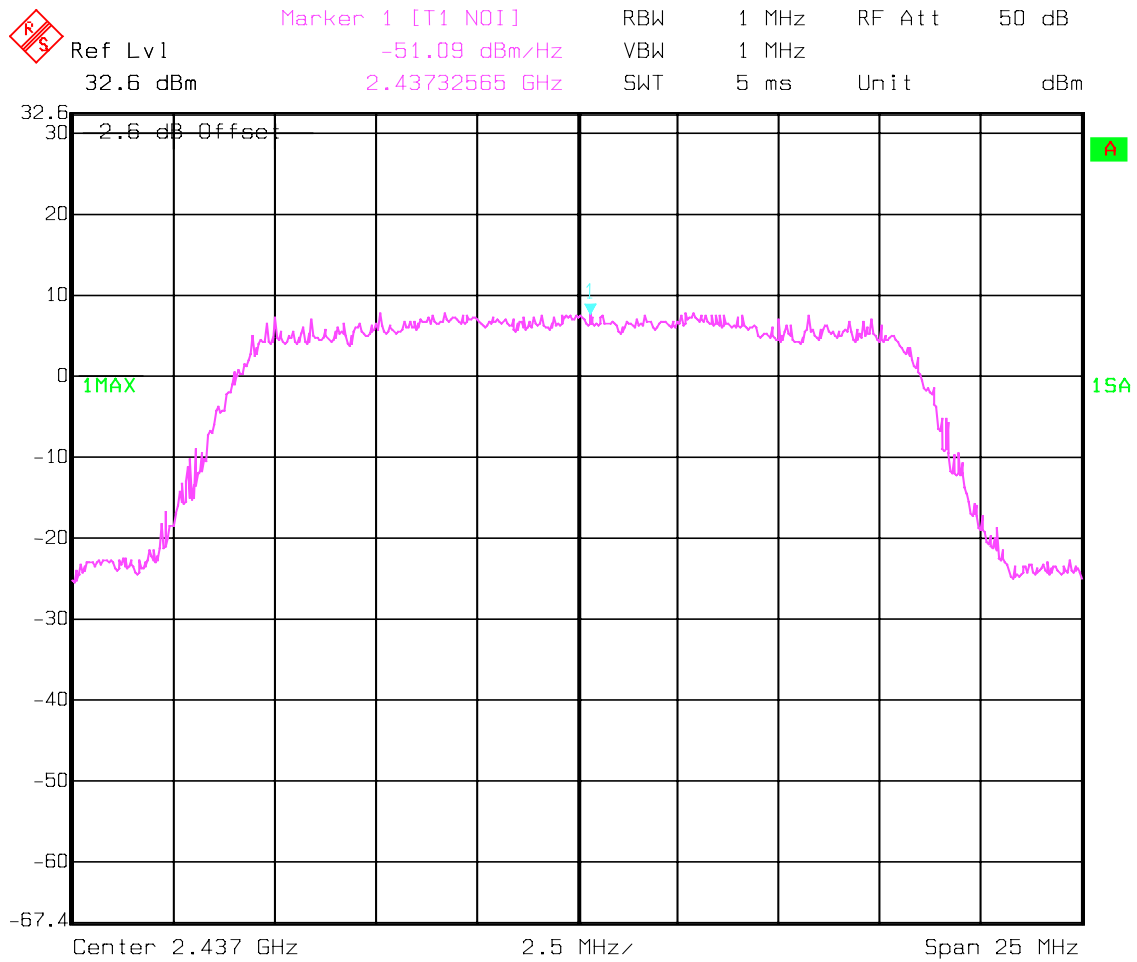
Lowest Channel: 2412MHz



POWER SPECTRAL DENSITY

RSS-210

Mid Channel: 2437MHz

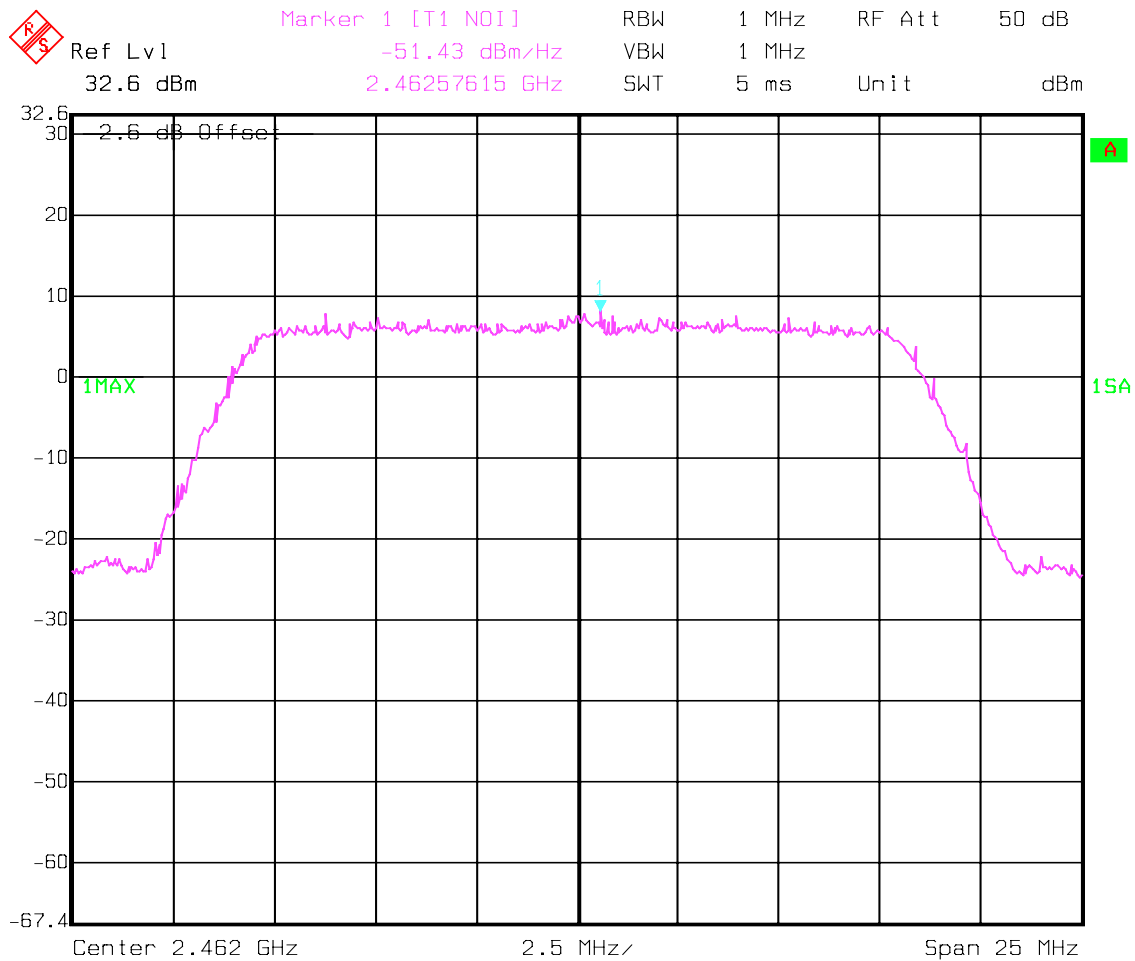


Date: 21.NOV.2002 10:38:53

POWER SPECTRAL DENSITY

RSS-210

Highest Channel: 2462MHz



Date: 21.NOV.2002 11:09:43

**BAND EDGE COMPLIANCE**

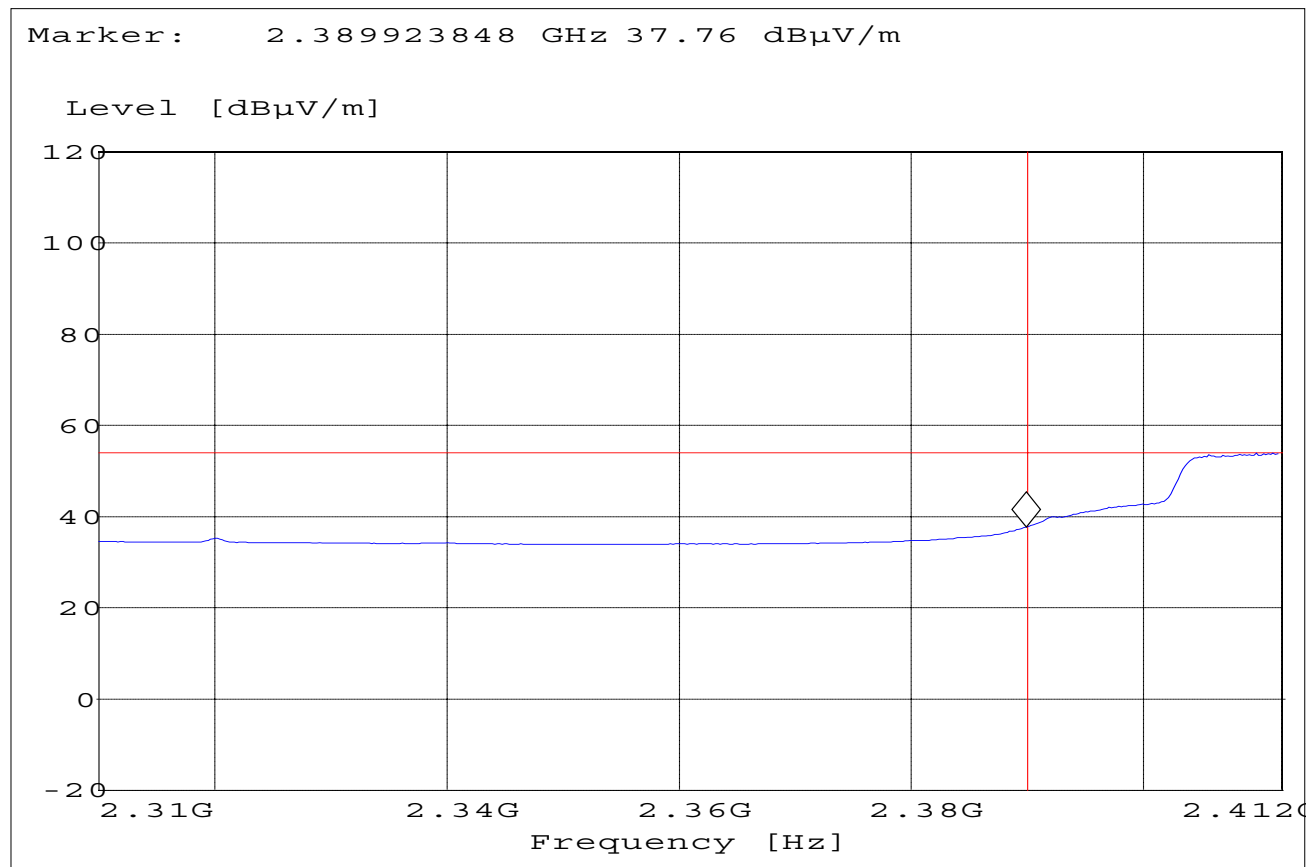
§15.247 (c)

**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**

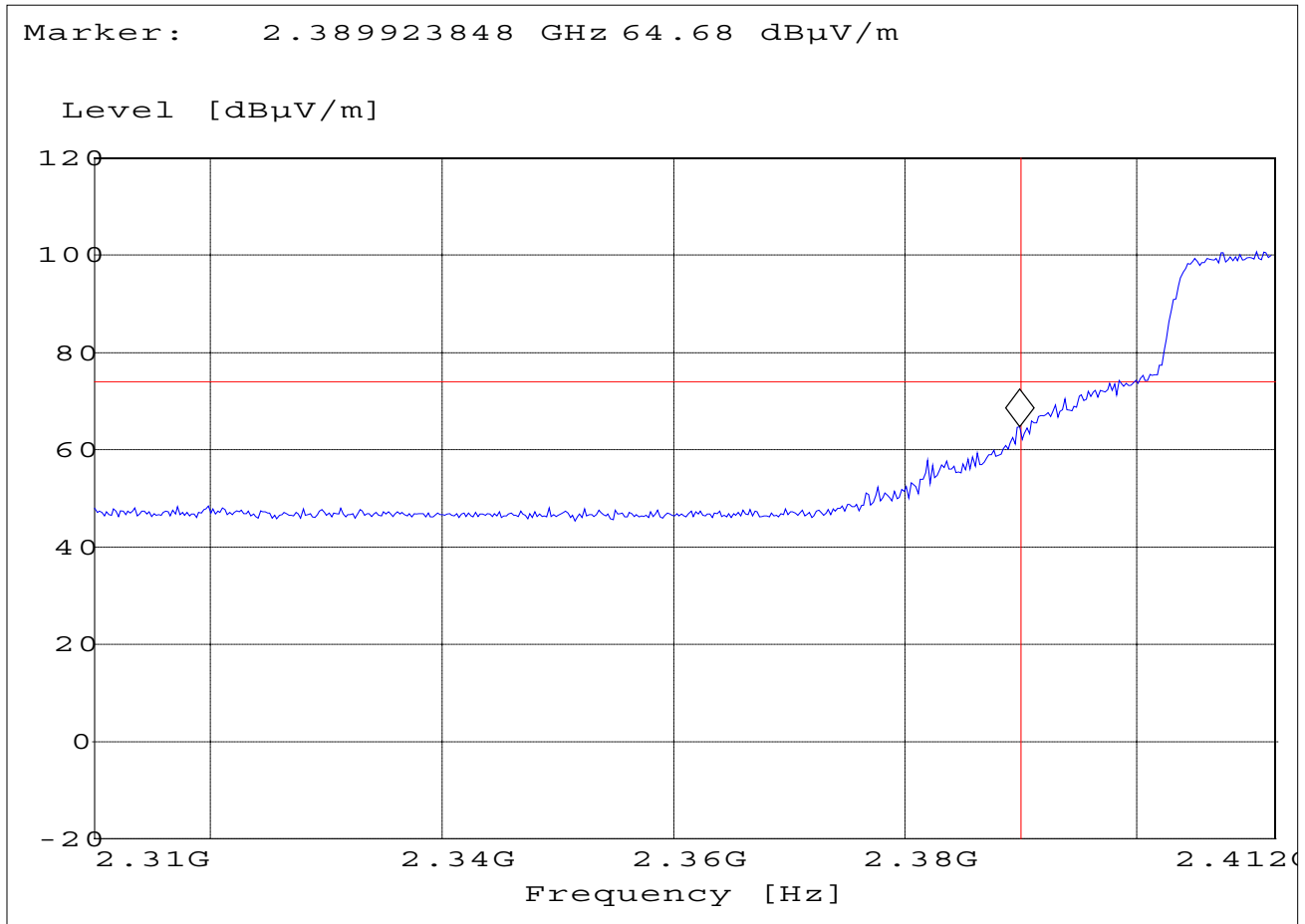
§15.247 (c)

**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**

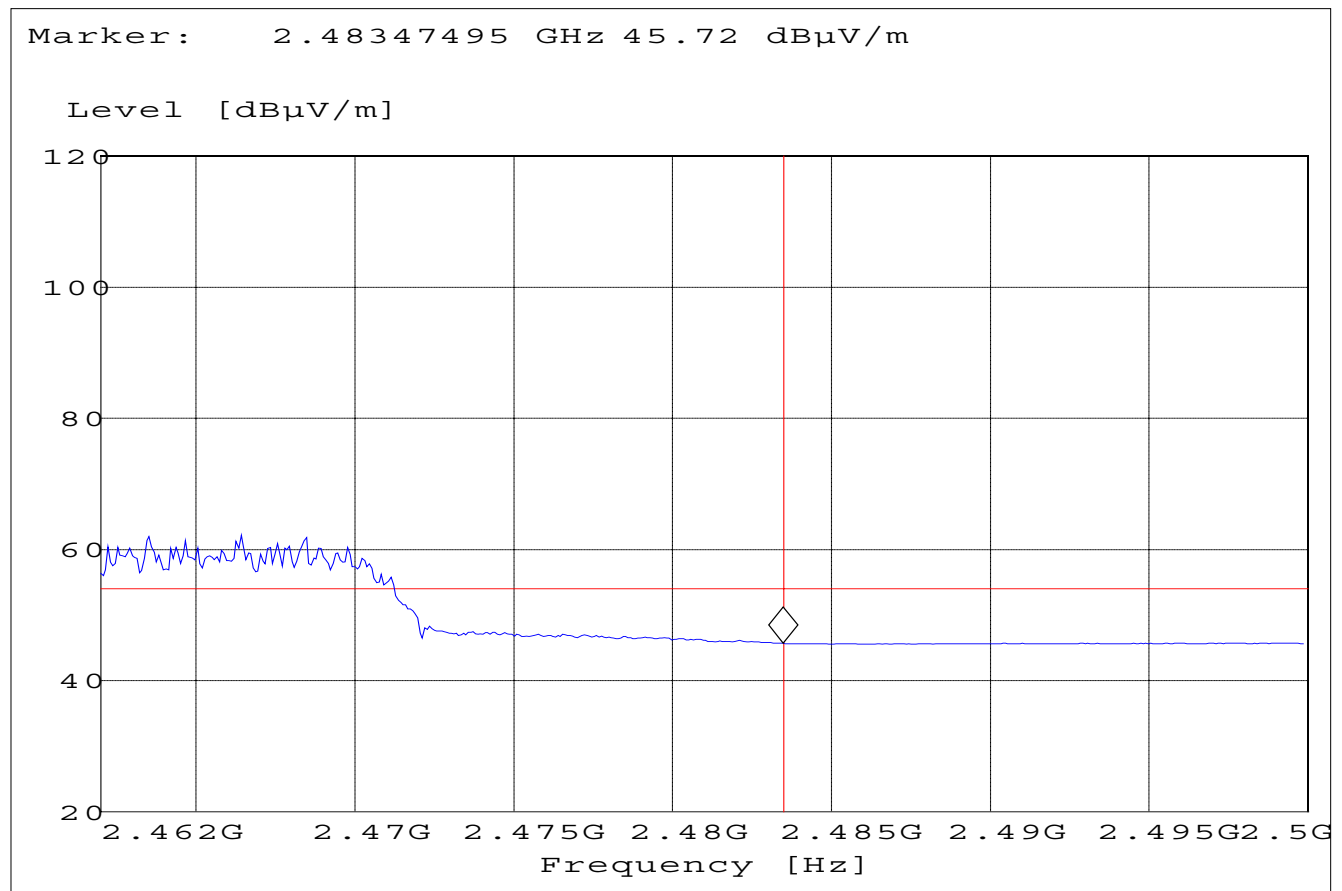
§15.247 (c)

**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	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



**BAND EDGE COMPLIANCE**

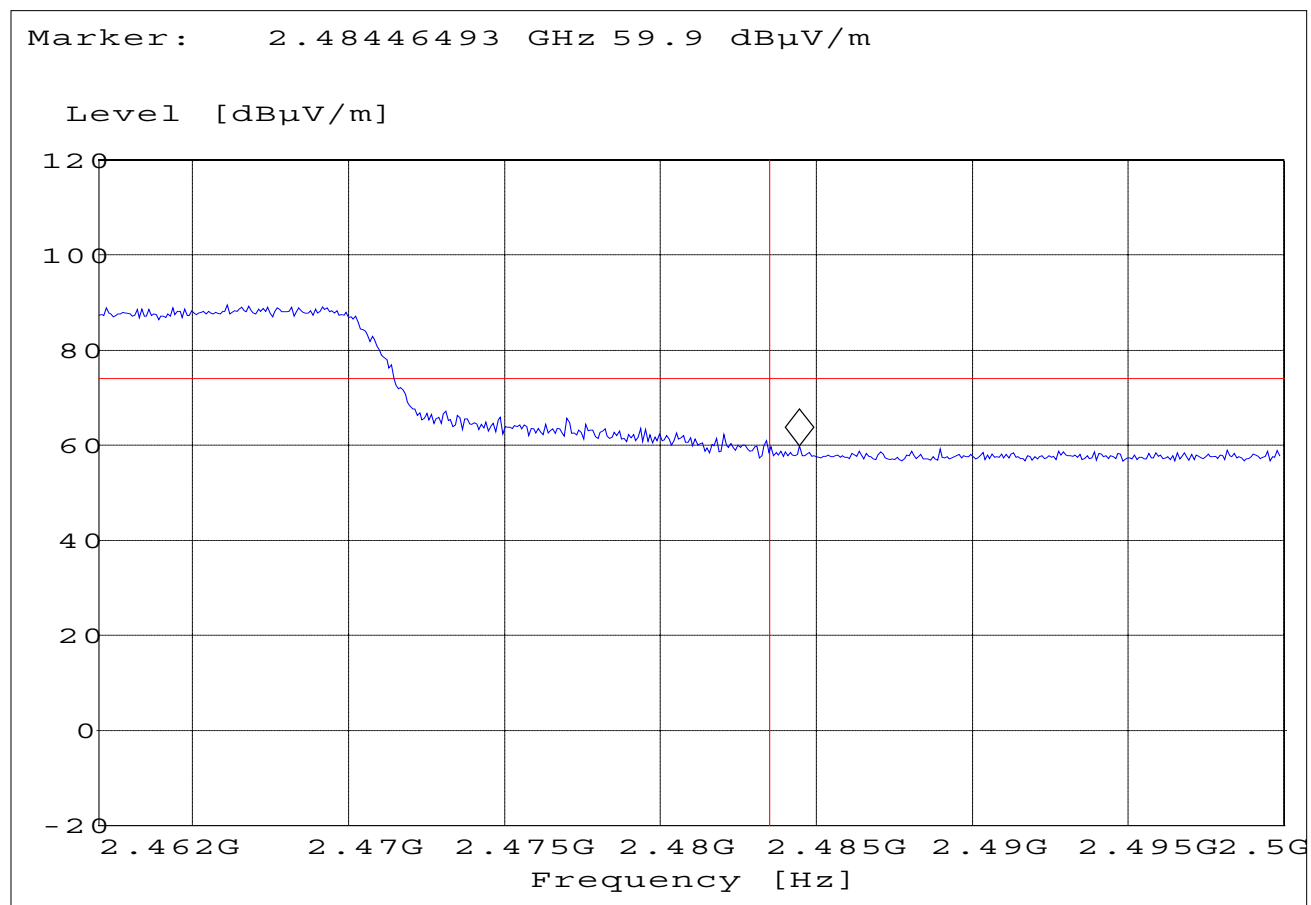
§15.247 (c)

**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	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



**EMISSION LIMITATIONS  
Transmitter (Conducted)  
LIMITS**

**§ 15.247 (c) (1)**

**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: Frequency resolution is not fine enough to show the exact frequency of the carrier, refer to plots under EIRP.**

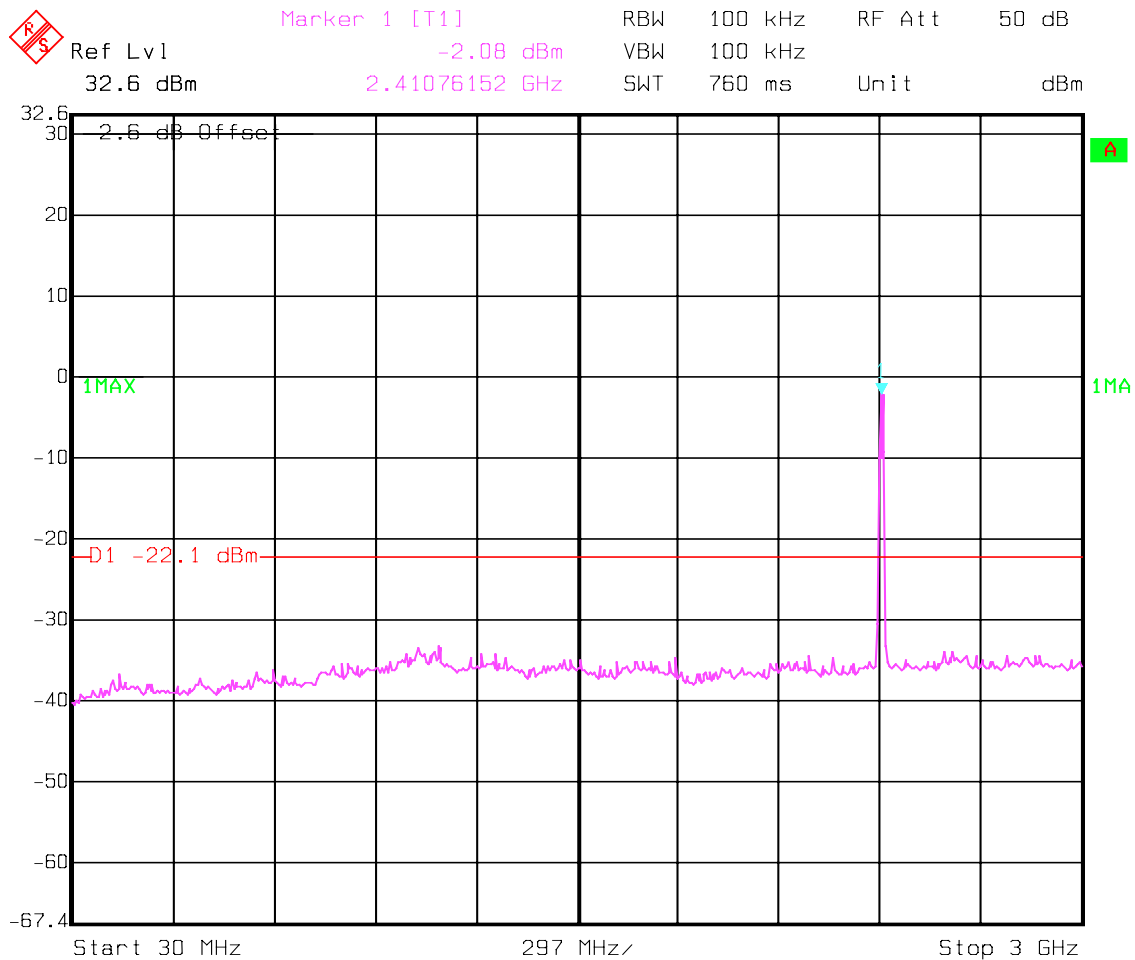


EMISSION LIMITATIONS - Conducted (Transmitter)

§ 15.247 (c) (1)

Lowest Channel(2412MHz): 30MHz - 3GHz

NOTE: The peak above the limit line is the carrier frequency.



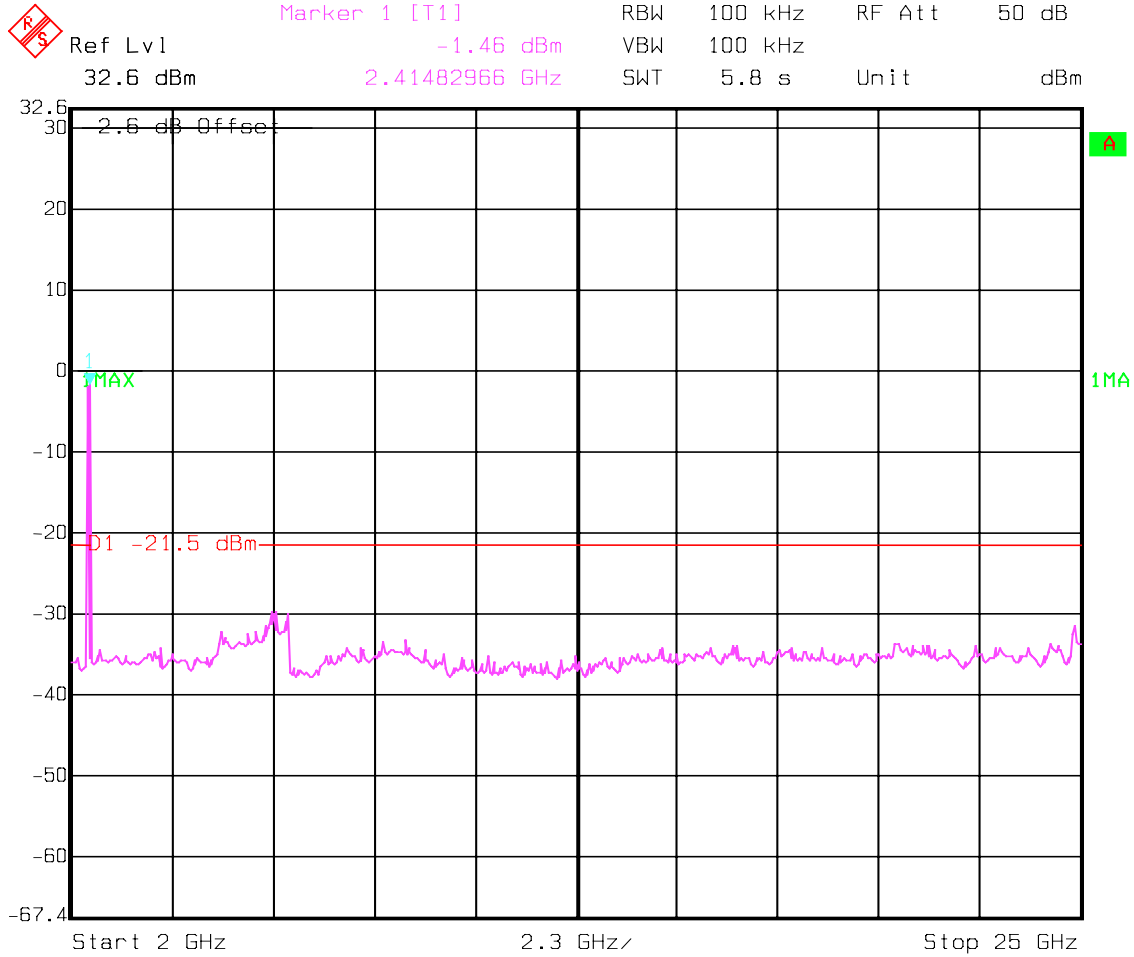
Date: 21.NOV.2002 09:28:10

EMISSION LIMITATIONS - Conducted (Transmitter)

§ 15.247 (c) (1)

Lowest Channel(2412MHz): 2GHz - 25GHz

NOTE: The peak above the limit line is the carrier frequency.



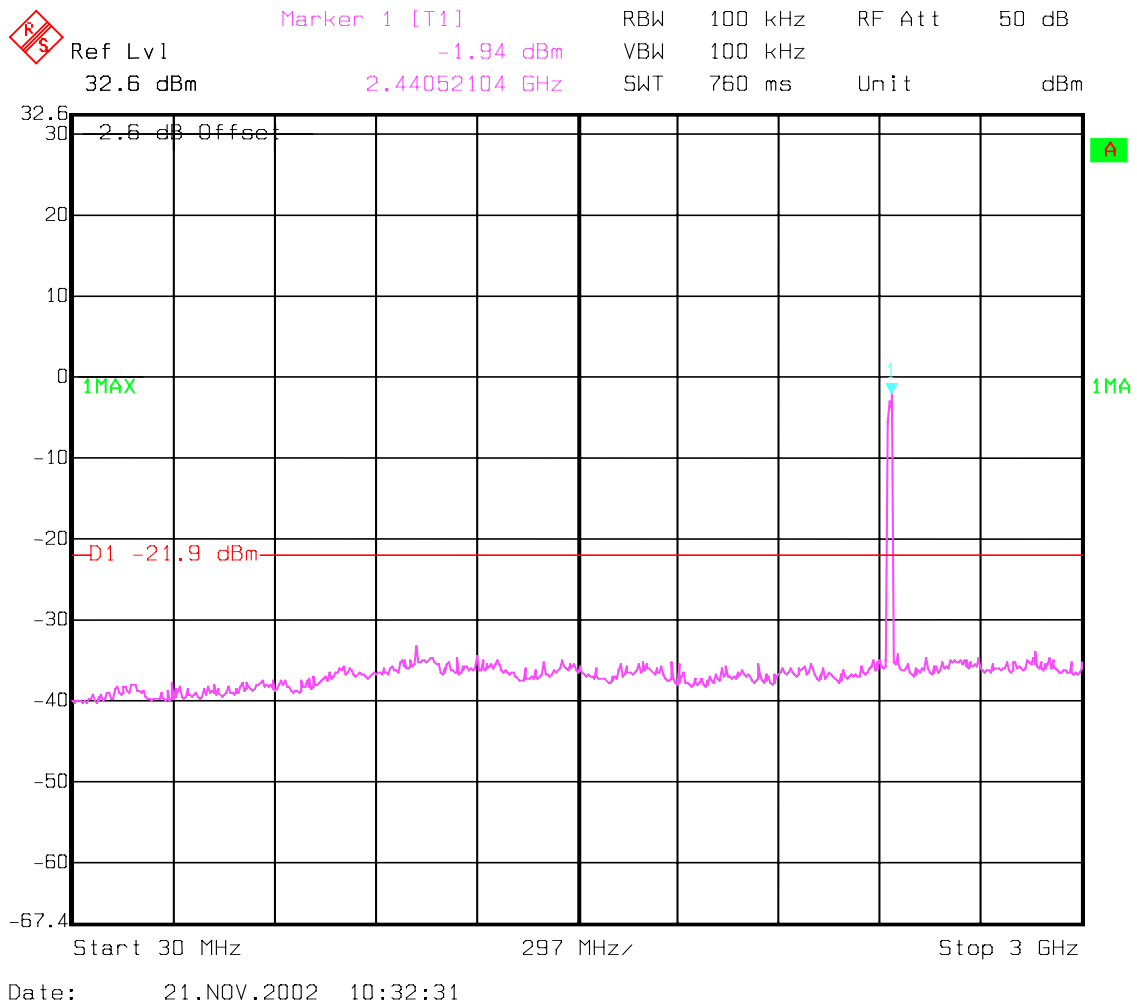
Date: 21.NOV.2002 09:30:51

## EMISSION LIMITATIONS - Conducted (Transmitter)

§ 15.247 (c) (1)

### Mid Channel(2437MHz): 30MHz - 3GHz

NOTE: The peak above the limit line is the carrier frequency.

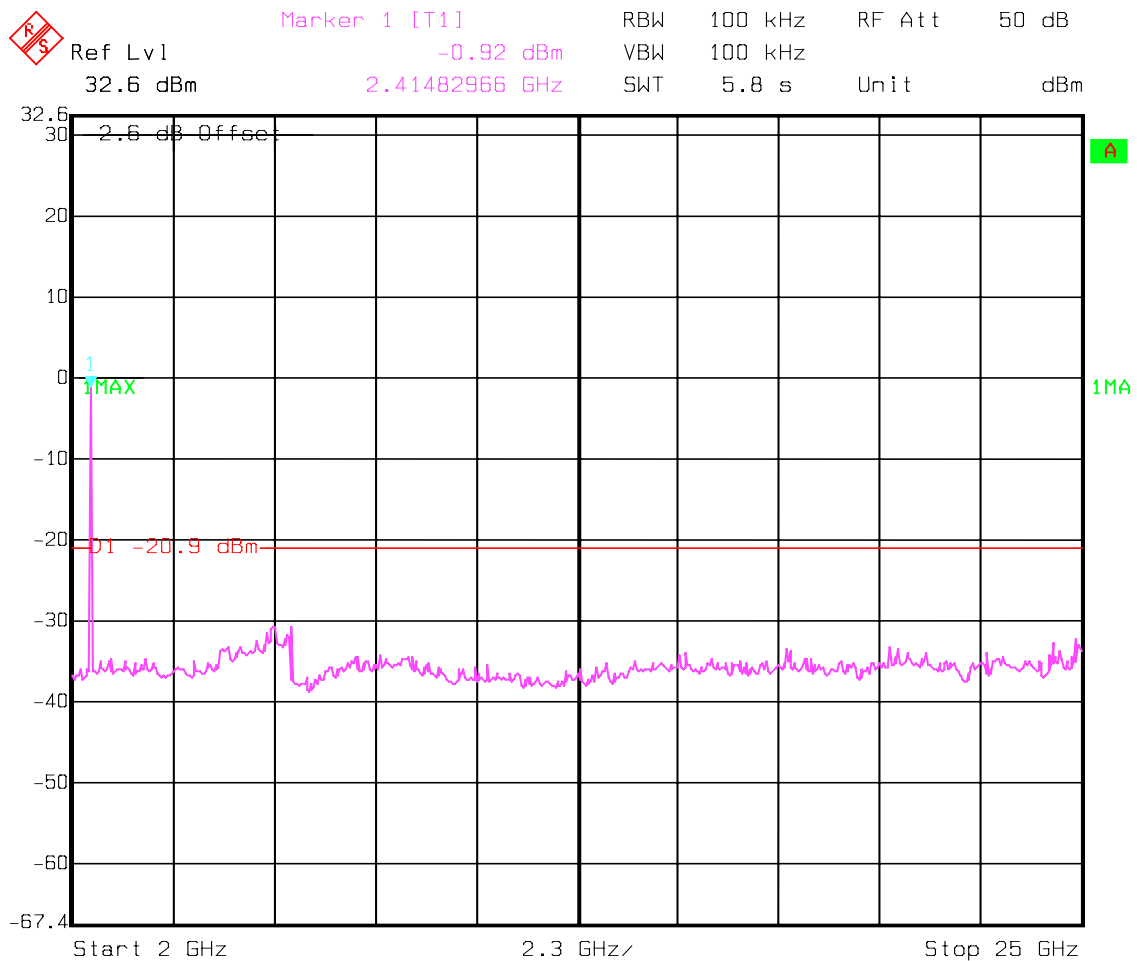


EMISSION LIMITATIONS - Conducted (Transmitter)

§ 15.247 (c) (1)

Mid Channel(2437MHz): 2GHz - 25GHz

NOTE: The peak above the limit line is the carrier frequency.



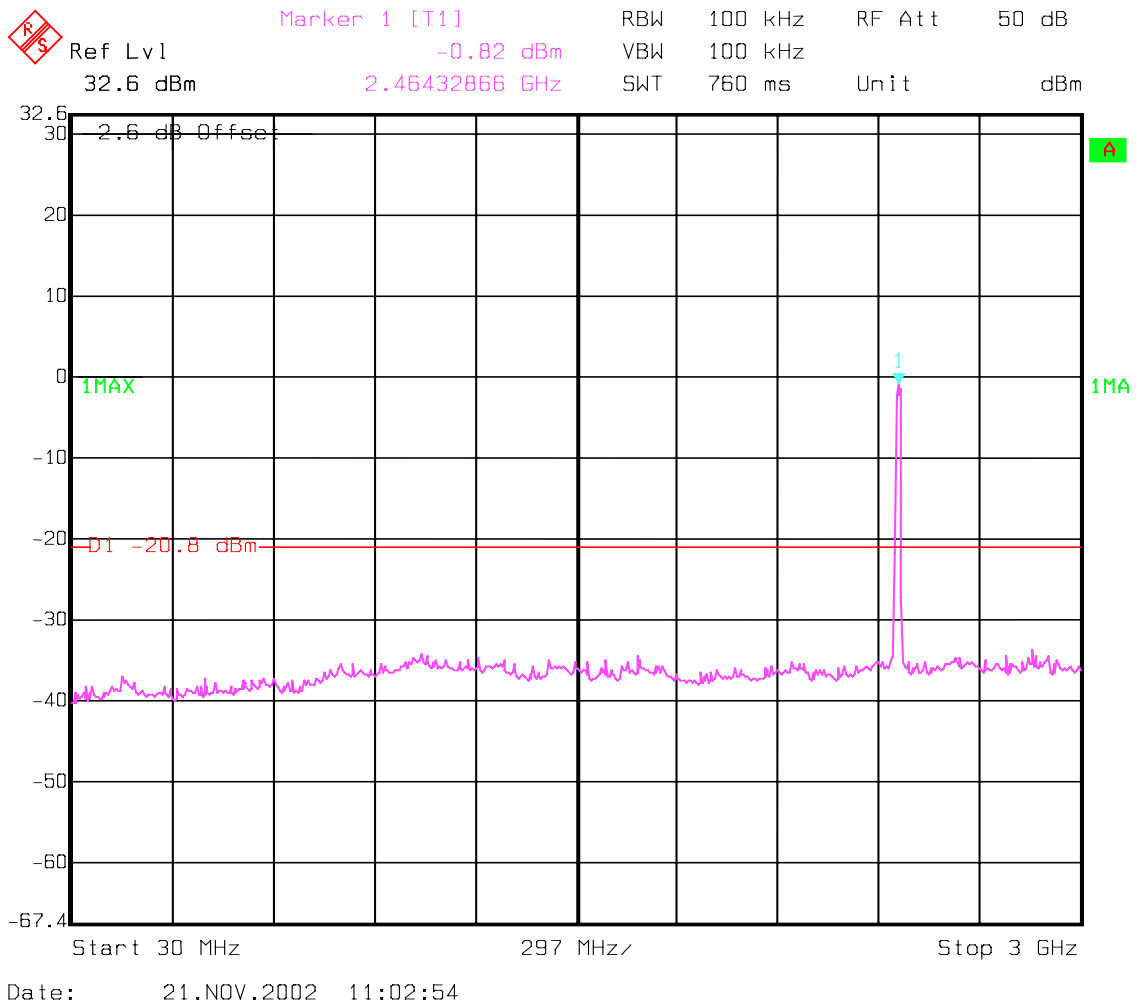
Date: 21.NOV.2002 10:34:11

## EMISSION LIMITATIONS - Conducted (Transmitter)

§ 15.247 (c) (1)

Highest Channel(2462MHz): 30MHz - 3GHz

NOTE: The peak above the limit line is the carrier frequency.

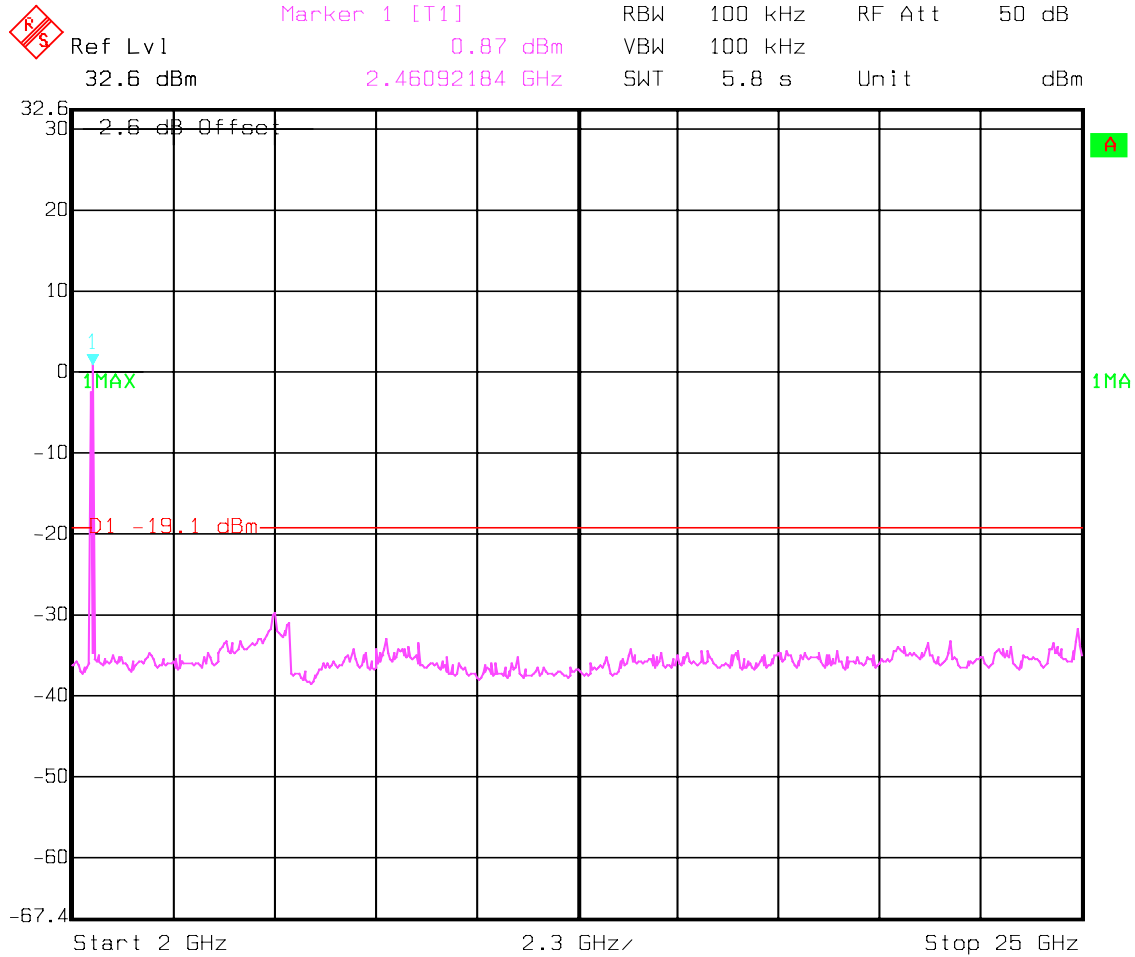


**EMISSION LIMITATIONS - Conducted (Transmitter)**

**§ 15.247 (c) (1)**

**Highest Channel(2462MHz): 2GHz - 25GHz**

**NOTE: The peak above the limit line is the carrier frequency.**



Date: 21.NOV.2002 11:04:51

**EMISSION LIMITATIONS**  
**Transmitter (Radiated)**

§ 15.247 (c) (1)

**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 18 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.
2. Frequency resolution is not fine enough to show the exact frequency of the carrier, refer to plots under EIRP.
3. All measurements were carried out in peak mode.

**Results for the radiated measurements below 30MHz according § 15.33**

<b>Frequency</b>	<b>Measured values</b>	<b>Remarks</b>
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)**

**Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.**

Tx ch-Low 2412 MHz		Tx ch-Mid 2442 MHz		Tx ch-High 2462 MHz	
Freq.(MHz)	Level (dBµV/m)	Freq.(MHz)	Level (dBµV/m)	Freq.(MHz)	Level (dBµV/m)
3210.4	34.33	3240.5	31.61	3270.5	30.90
4803.6	41.11	4863.7	38.01	4923.8	37.54
7238	51.59	7298.6	53.52	7358.7	53.29
9643.3	35.23	9733.5	33.95	9853.7	33.04
12048.1	37.11	12198	37.20	12288.6	39.09

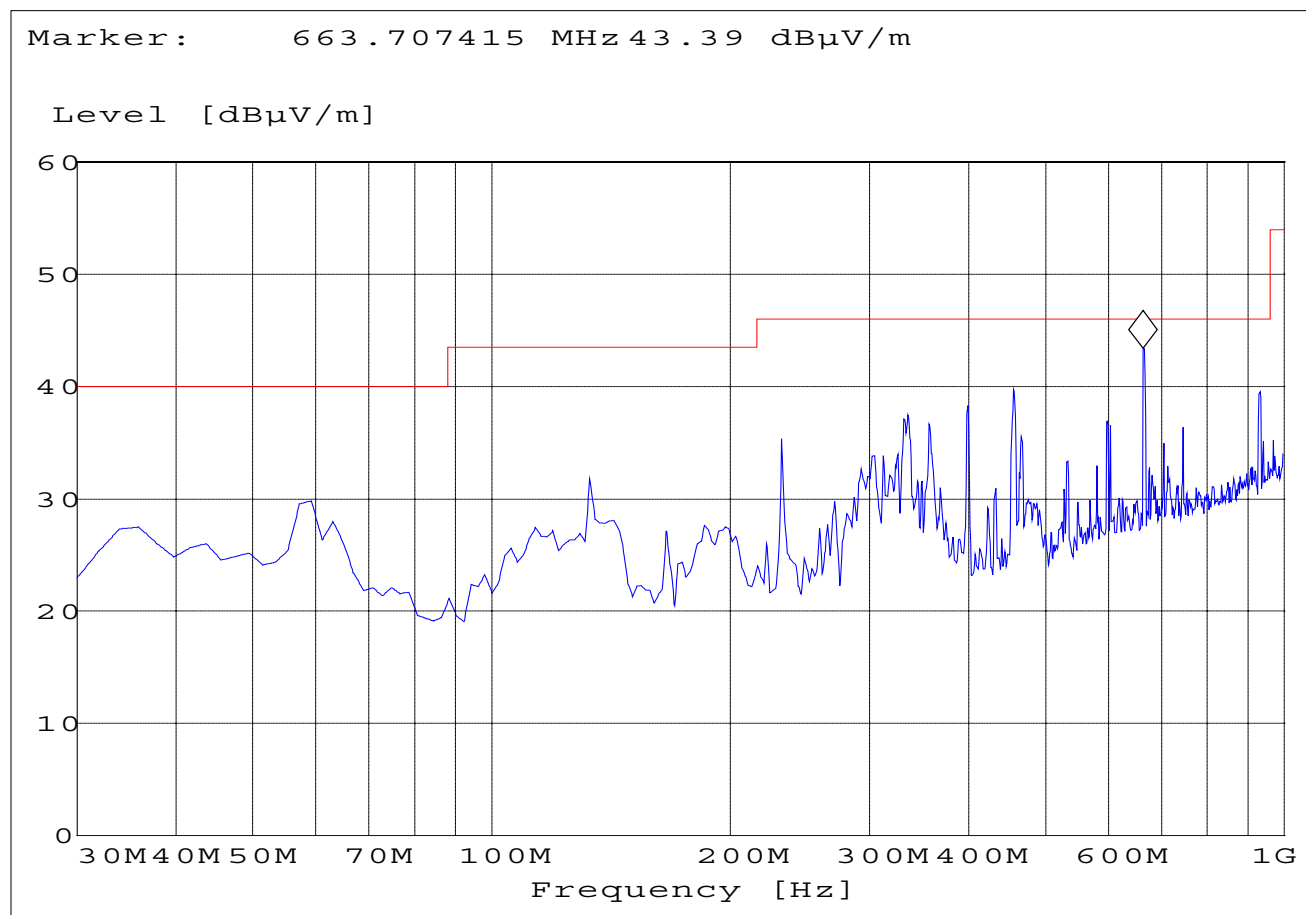


EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

Lowest Channel(2412MHz): 30MHz – 1GHz

SWEEP TABLE:		"BT Spuri hi 30-1G"			
Short Description:		15.247 30MHz-1GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency		Time	VBW	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186



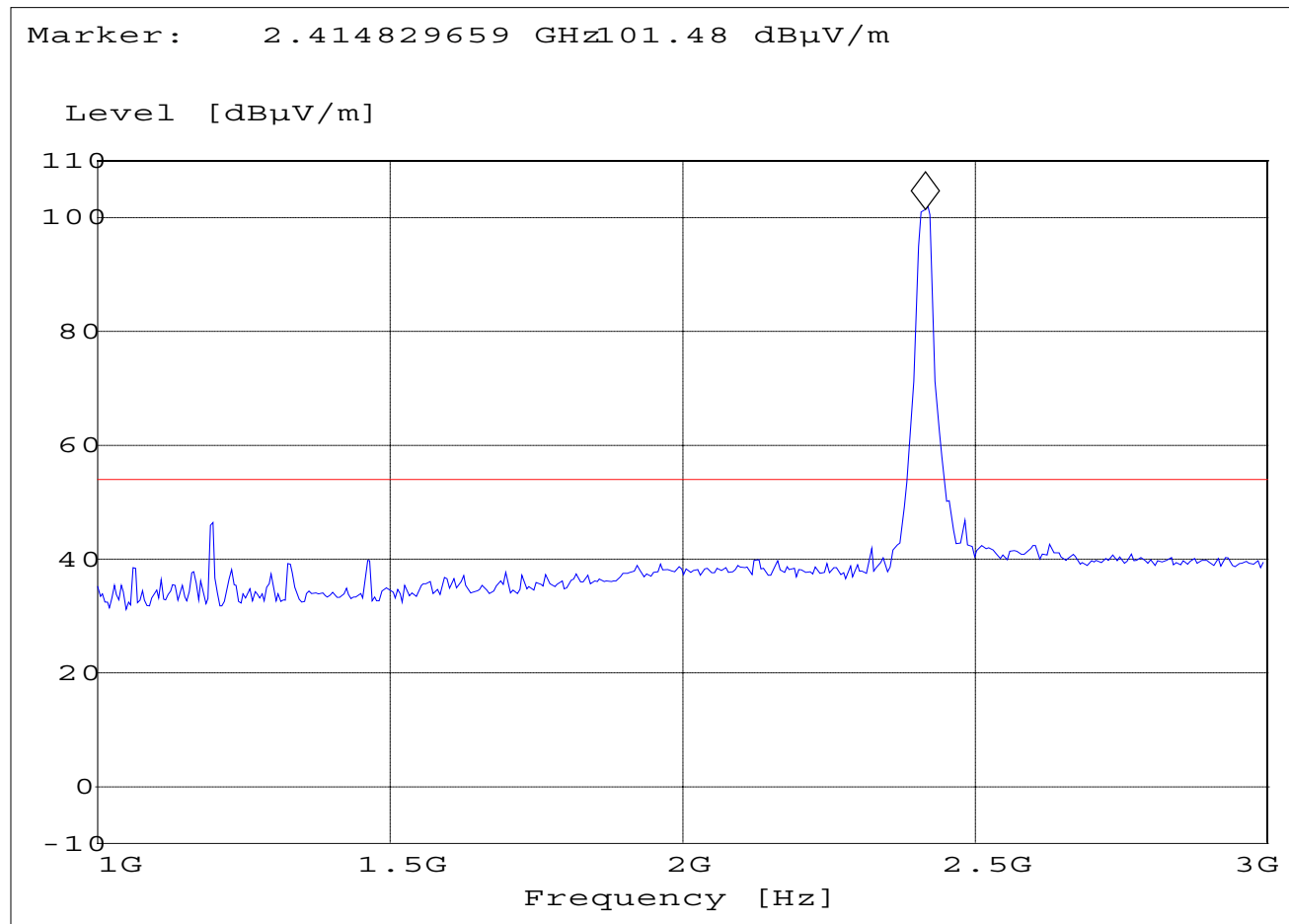
**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

**Lowest Channel(2412MHz): 1GHz – 3GHz**

**NOTE: The peak above the limit is the carrier frequency.**

SWEEP TABLE:		"BT Spuri hi 1-3G"			
Short Description:		15.247 Spurious 1-3 GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

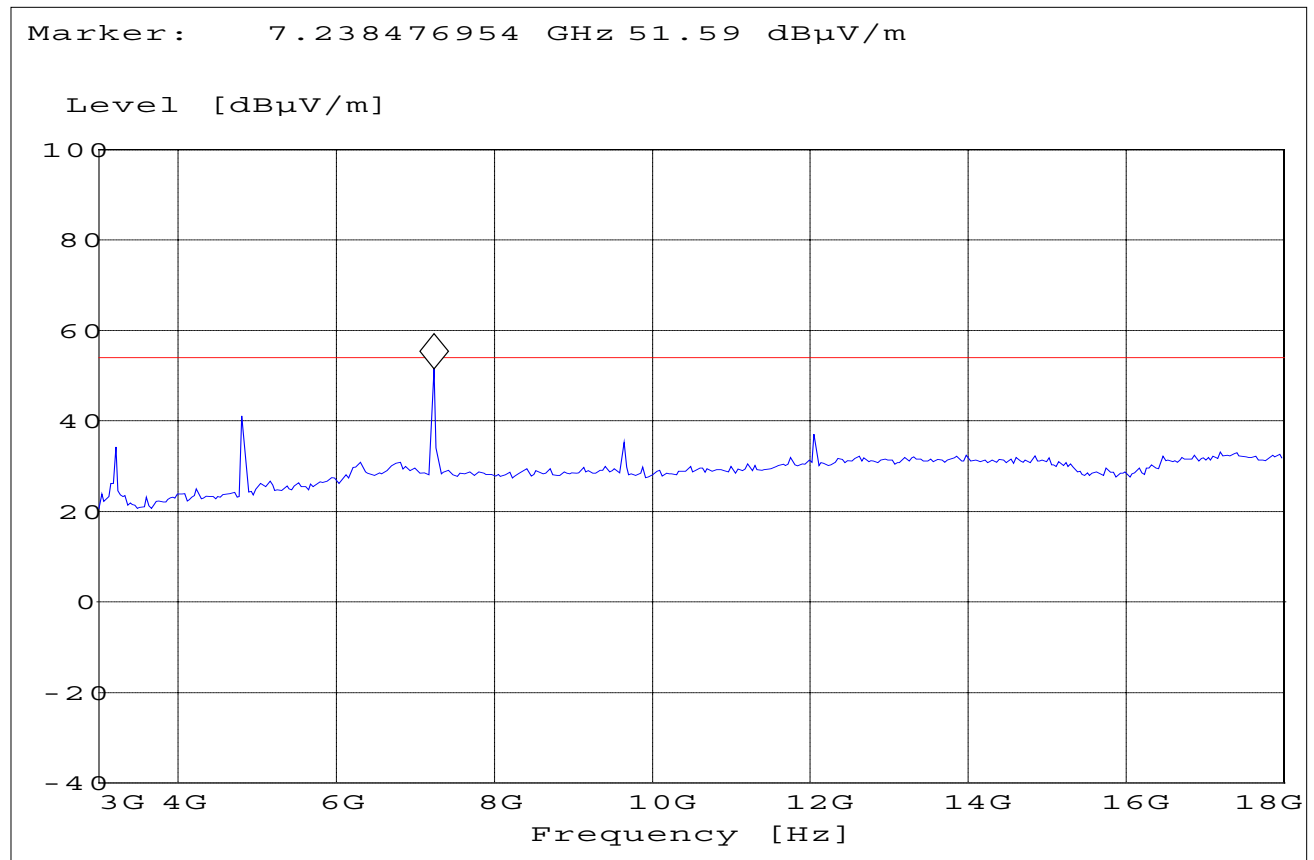


**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

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

SWEEP TABLE:		"BT Spuri hi 3-18G"			
Short Description:		15.247 Spurious3-18 GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

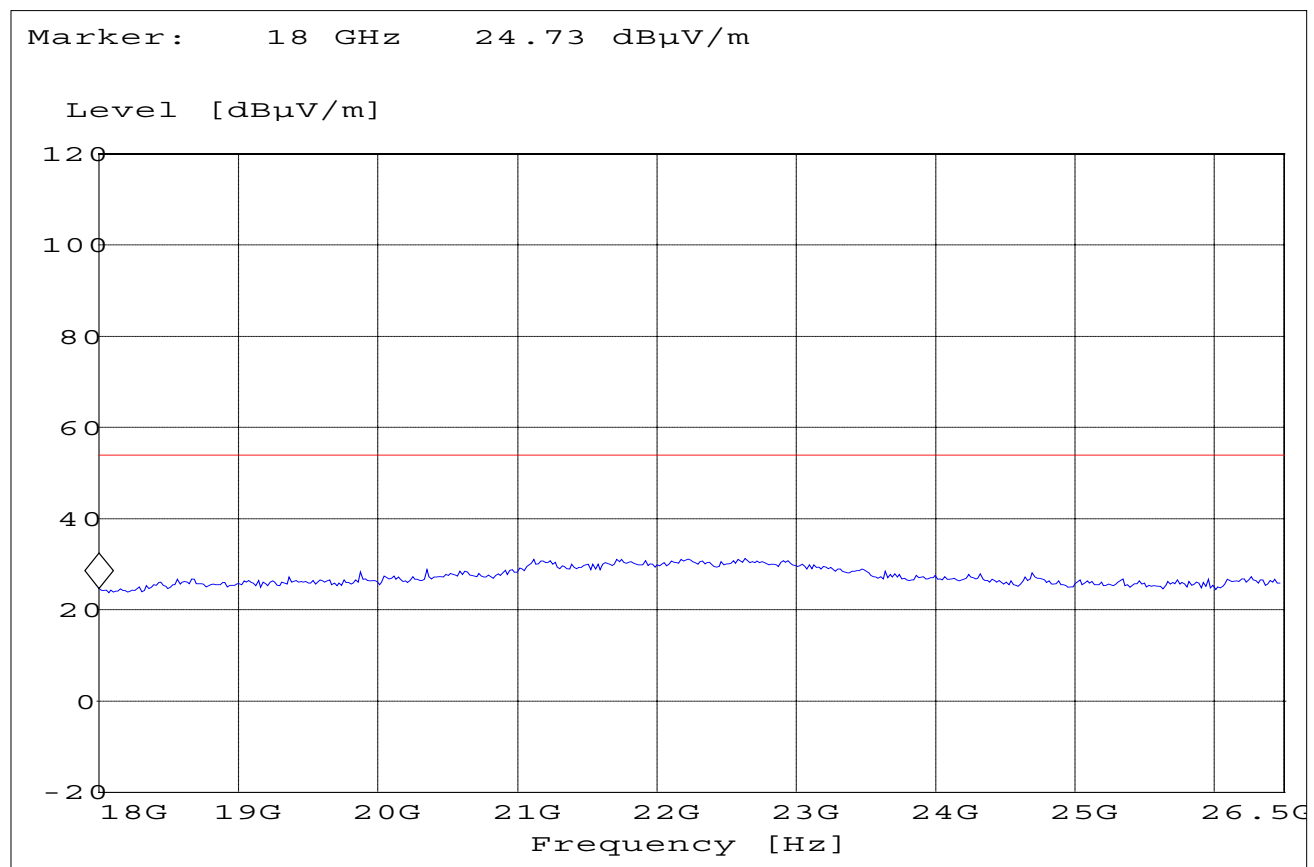


**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

**Lowest Channel(2412MHz): 18GHz – 26.5GHz**

SWEEP TABLE:		"BT Spuri hi 18-26.5G"			
Short Description:		15.247 Spurious 18-26.5 GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18.0 GHz	26.5.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

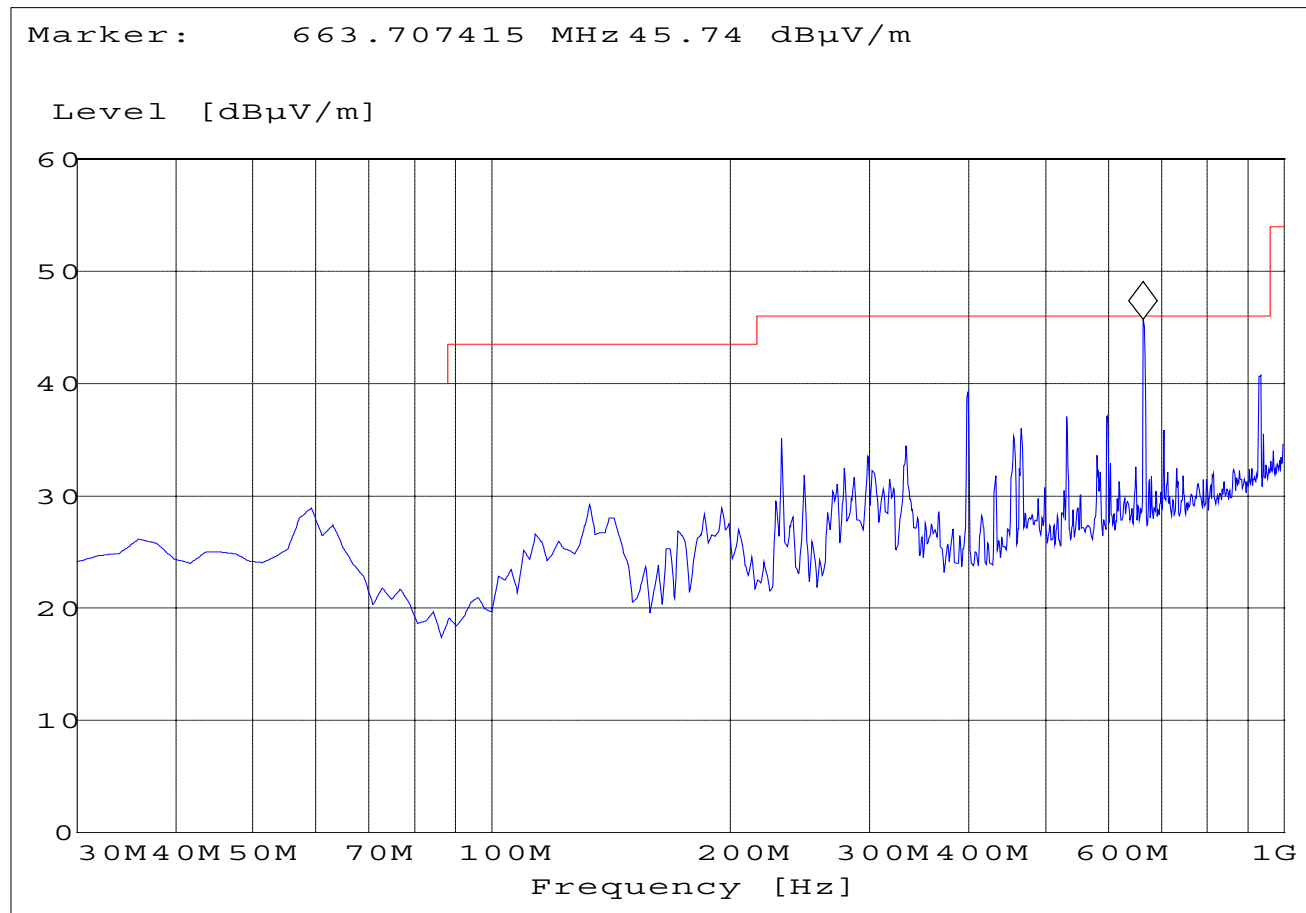


**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

**Middle Channel(2437MHz): 30MHz – 1GHz**

SWEEP TABLE:		"BT Spuri hi 30-1G"			
Short Description:		15.247 30MHz-1GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency		Time	VBW	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186



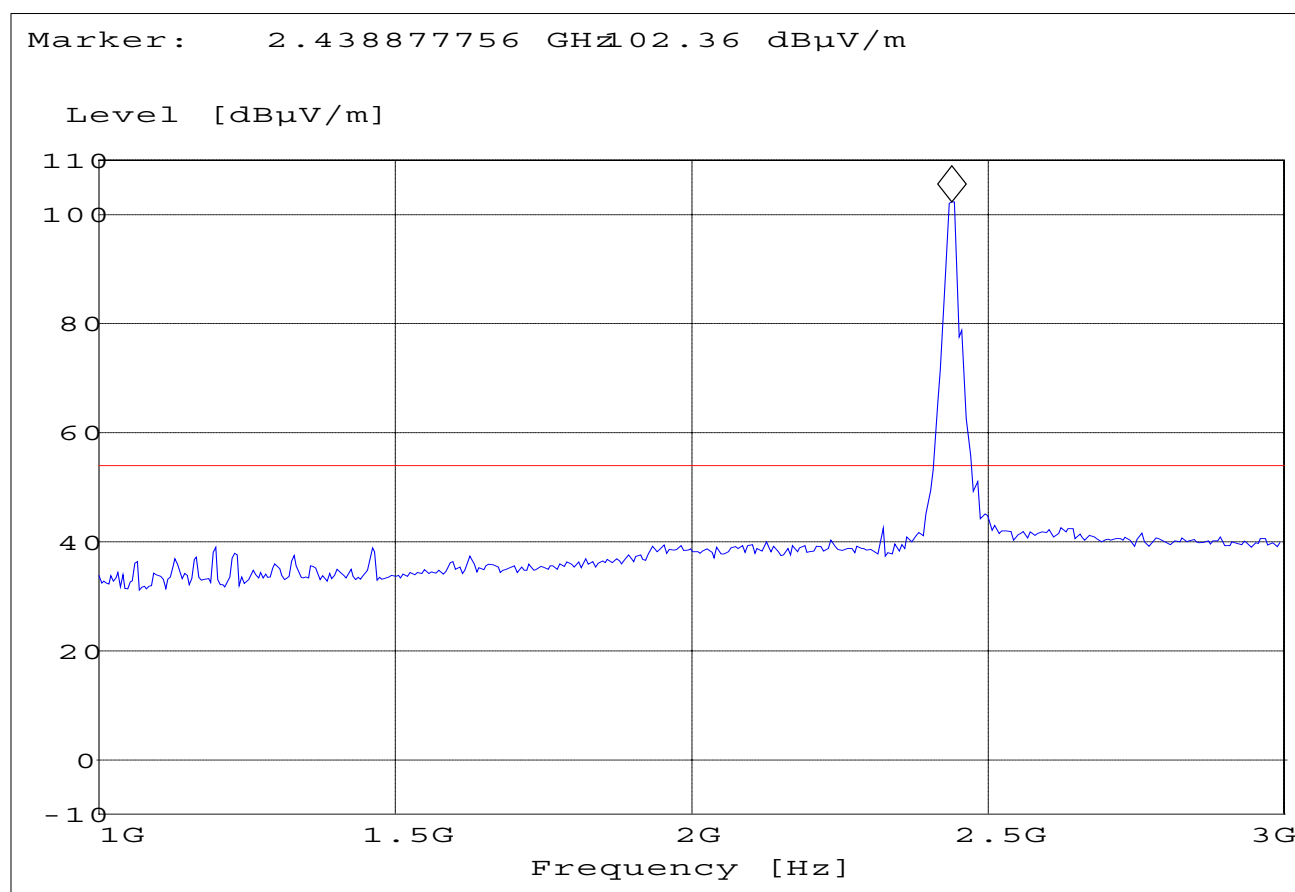
**EMISSION LIMITATIONS - Radiated (Transmitter)**

§ 15.247 (c) (1)

**Middle Channel(2437MHz): 1GHz – 3GHz**

**NOTE: The peak above the limit is the carrier frequency.**

SWEEP TABLE:		"BT Spuri hi 1-3G"			
Short Description:		15.247 Spurious 1-3GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

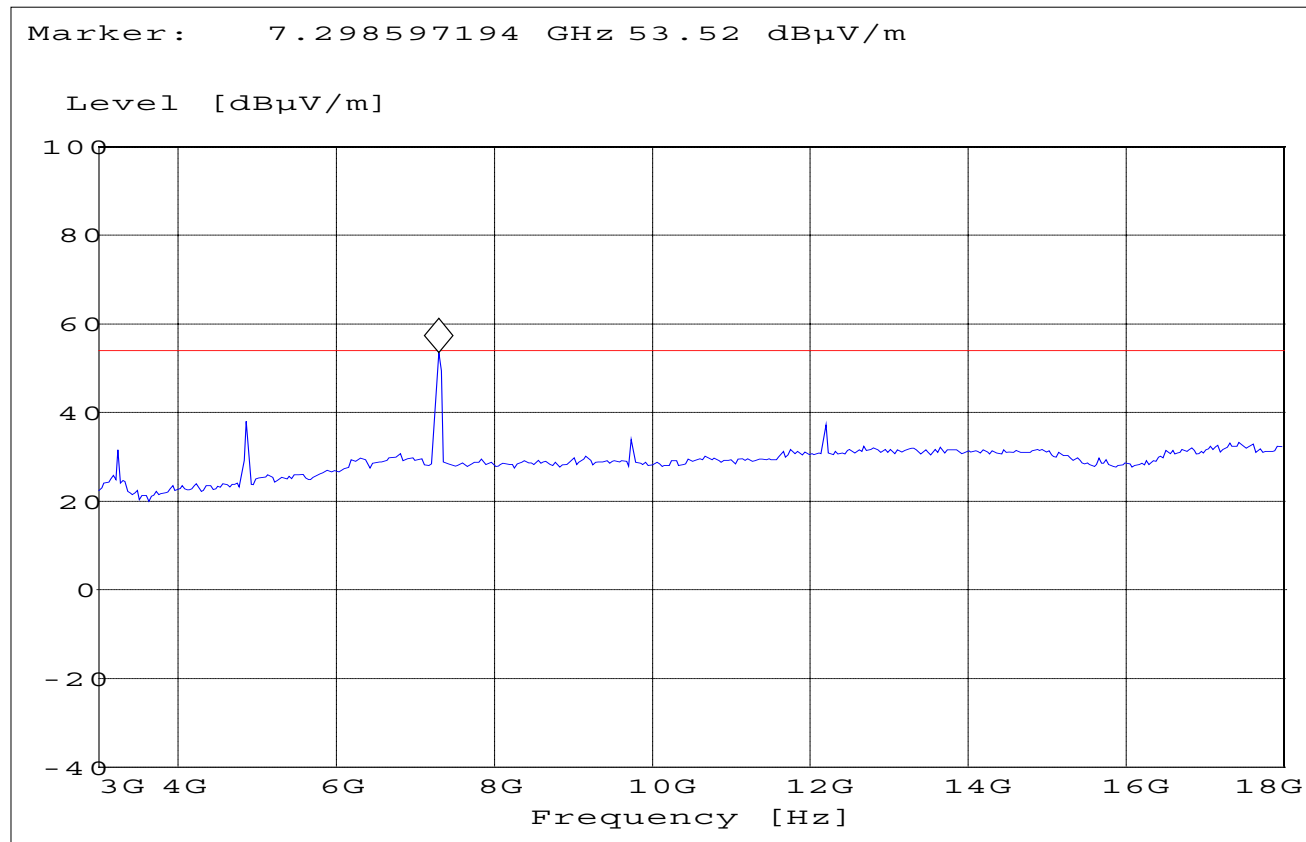


**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

**Middle Channel(2437MHz): 3GHz – 18GHz**

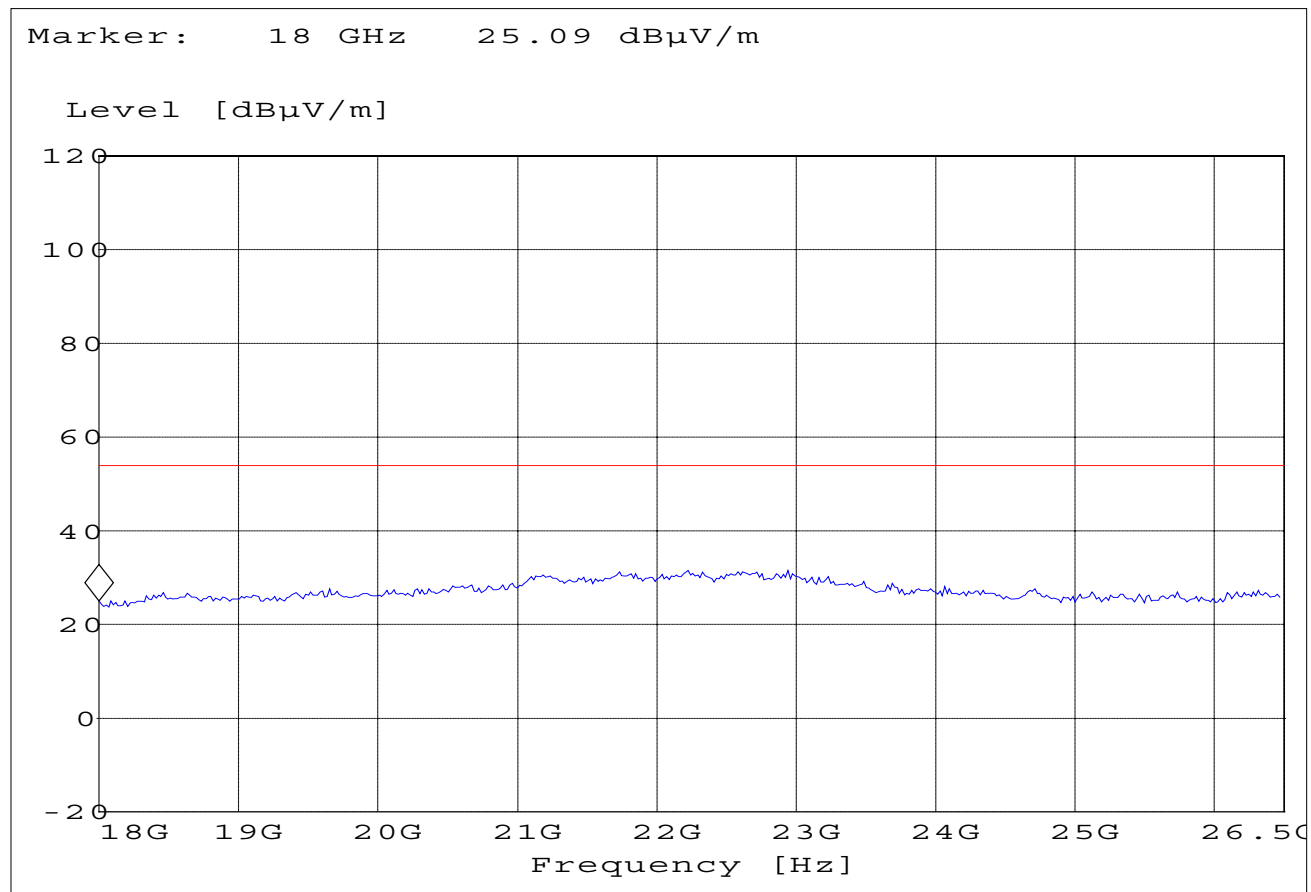
SWEEP TABLE:		"BT Spuri hi 3-18G"			
Short Description:		15.247 Spurious 3-18 GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



**EMISSION LIMITATIONS - Radiated (Transmitter)**  
**Middle Channel(2437MHz): 18GHz – 26.5GHz**

§ 15.247 (c) (1)

SWEEP TABLE:		"BT Spuri hi 18-26.5G"			
Short Description:		15.247 Spurious 18-26.5 GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18.0 GHz	26.5.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)





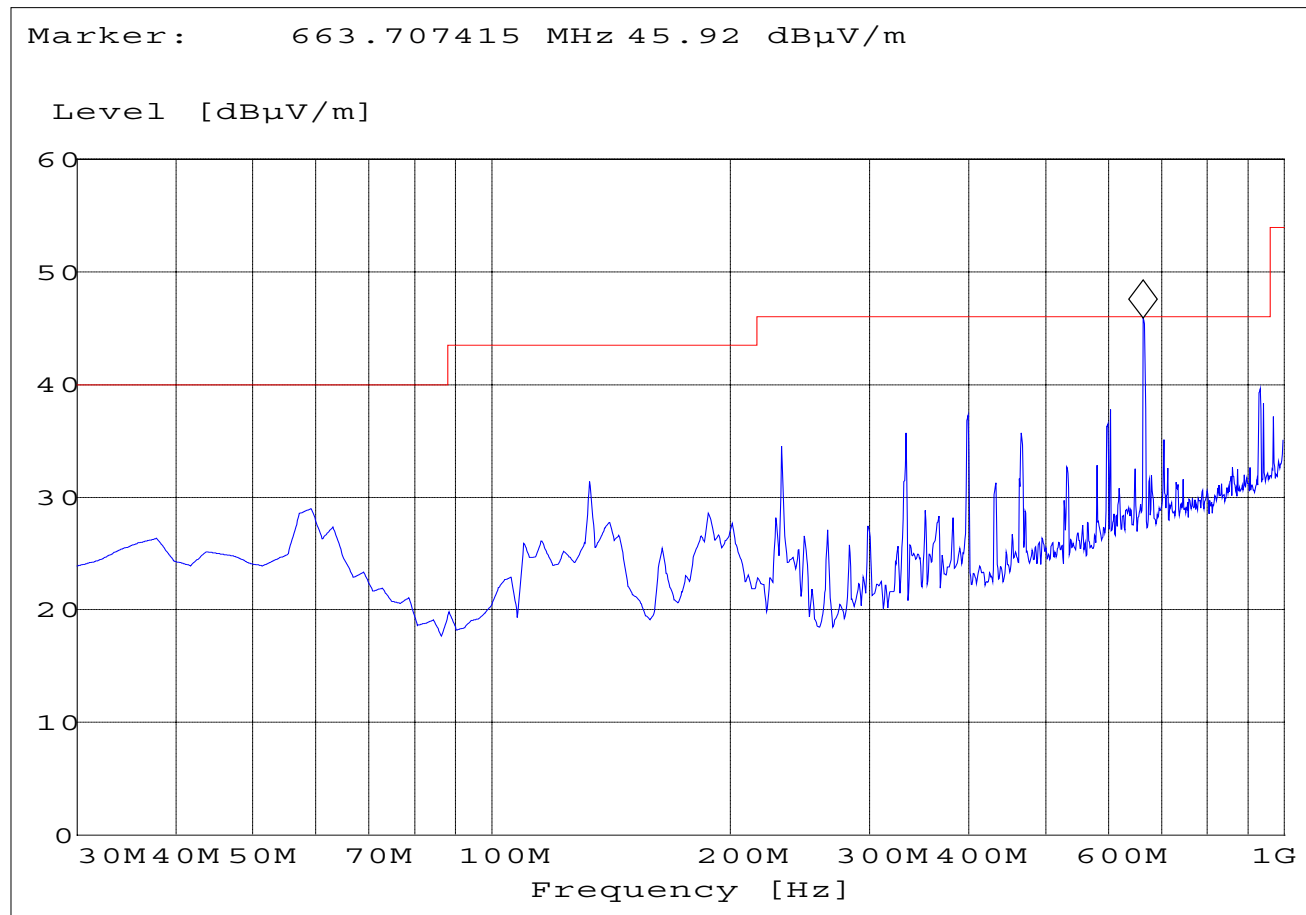
**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

**Highest Channel(2462MHz): 30MHz – 1GHz**

SWEEP TABLE: "BT Spuri hi 30-1G"  
Short Description: 15.247 30MHz-1GHz

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



**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

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

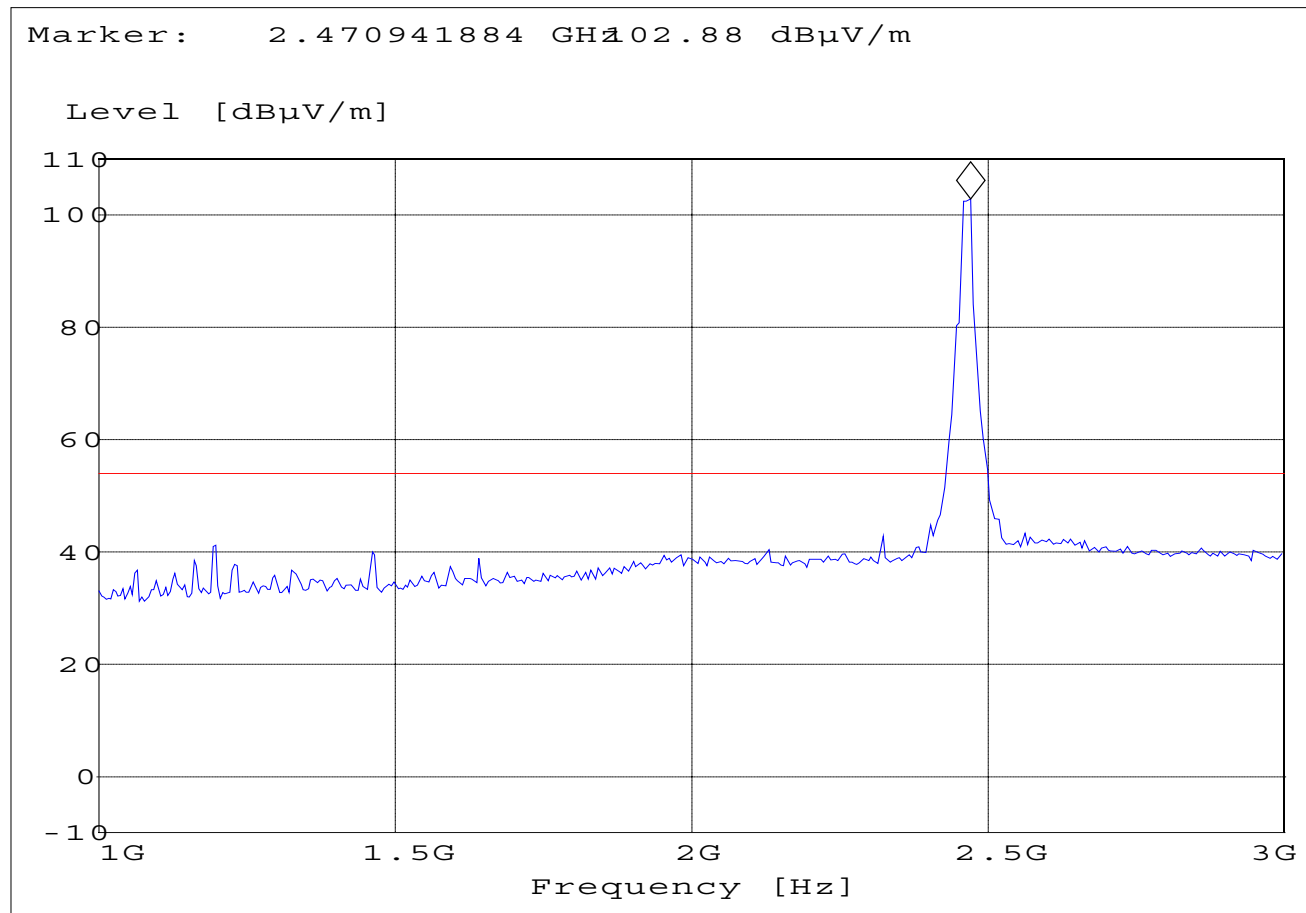
**NOTE: The peak above the limit is the carrier frequency.**

SWEEP TABLE:

"BT Spuri hi 1-3G"

Short Description: 15.247 Spurious 1-3GHz

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

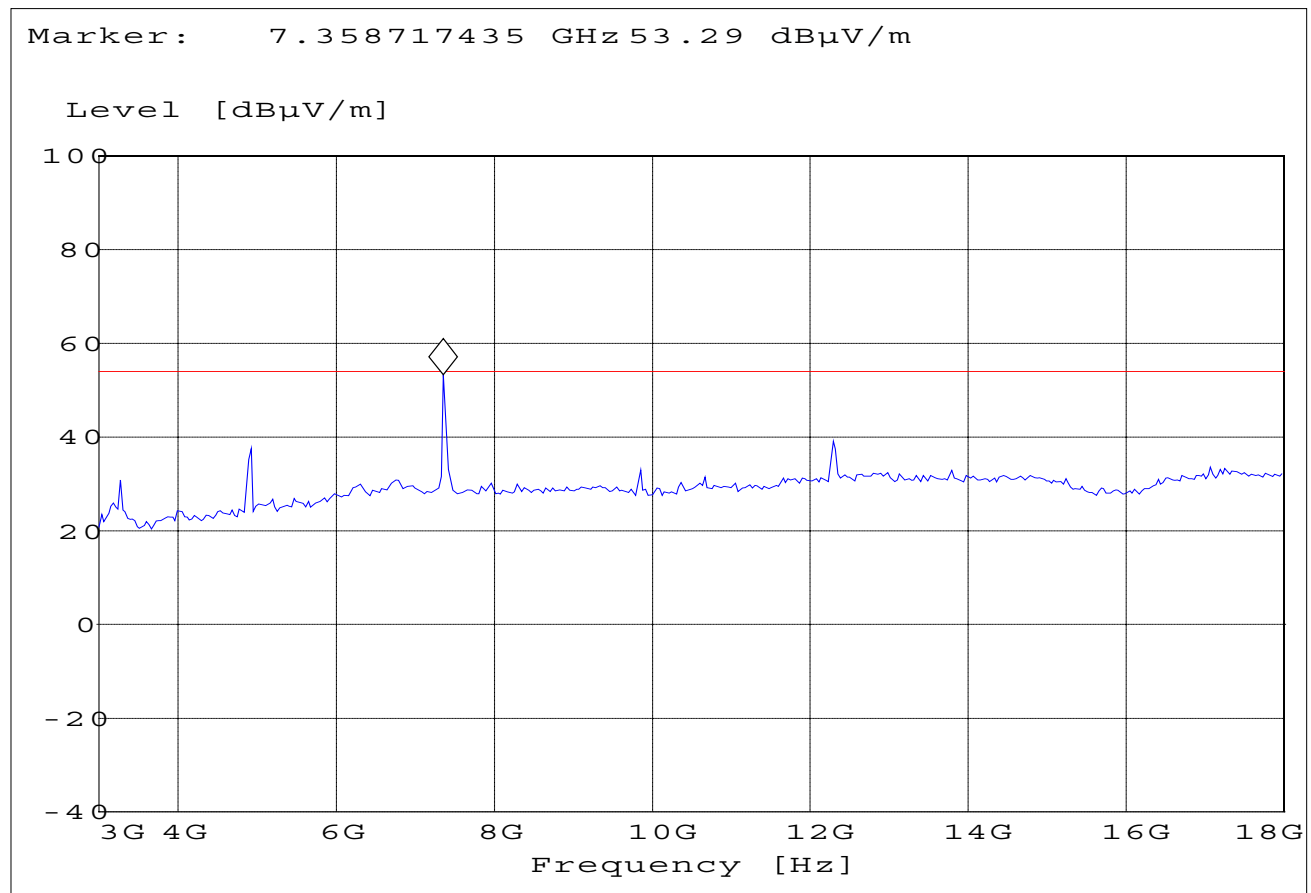


EMISSION LIMITATIONS - Radiated (Transmitter)

§ 15.247 (c) (1)

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

SWEEP TABLE:		"BT Spuri hi 3-18G"			
Short Description:		15.247 Spurious 3-18GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

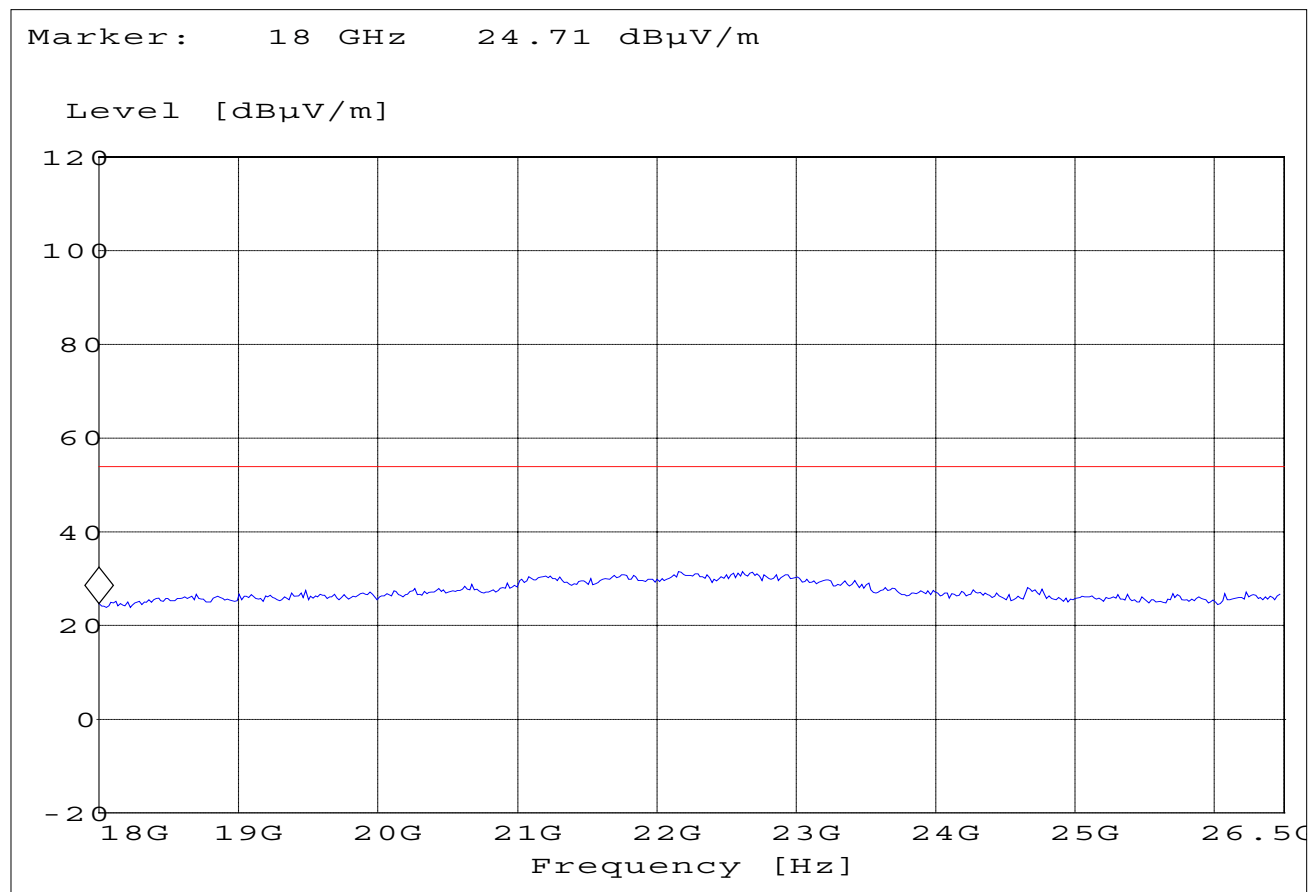


**EMISSION LIMITATIONS - Radiated (Transmitter)**

**§ 15.247 (c) (1)**

**Highest Channel(2462MHz): 18GHz – 26.5GHz**

SWEEP TABLE:		"BT Spuri hi 18-26.5G"			
Short Description:		15.247 Spurious 18-26.5GHz			
Start	Stop	Detector	Meas.	RBW	Transducer
Frequency	Frequency	Time	Bandw.	VBW	
18.0 GHz	26.5 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)**

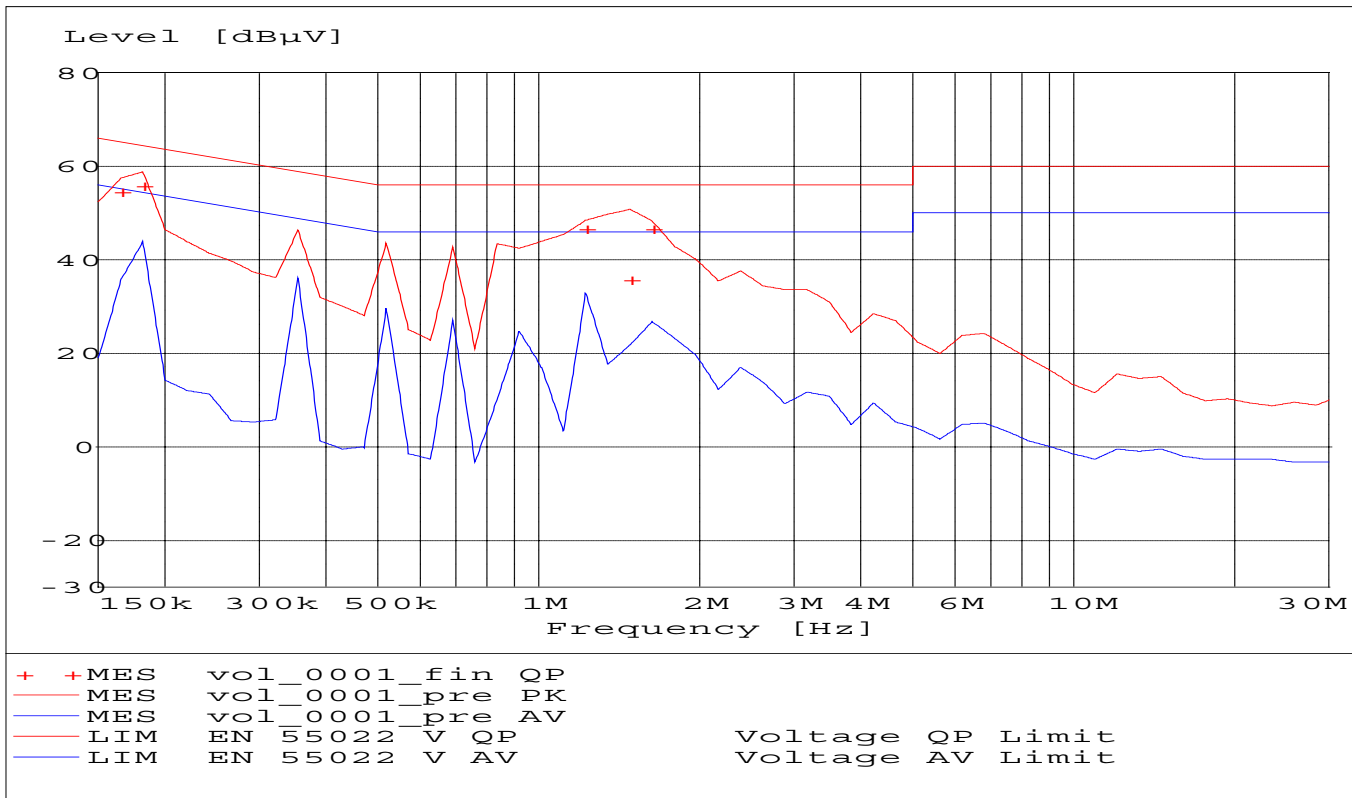
**Limit**

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: "vol\_0001\_fin QP"

11/22/02 8:24AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.165000	54.70	0.0	65	10.5	2	---
0.181500	55.90	0.0	64	8.5	1	---
1.221041	46.80	0.0	56	9.2	2	---
1.477460	35.90	0.0	56	20.1	1	---
1.625206	46.90	0.0	56	9.1	1	---

**RECEIVER SPURIOUS RADIATION**

§ 15.209

**Limits**

Frequency (MHz)	Field strength ( $\mu\text{V/m}$ )	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 18 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.

RECEIVER SPURIOUS RADIATION

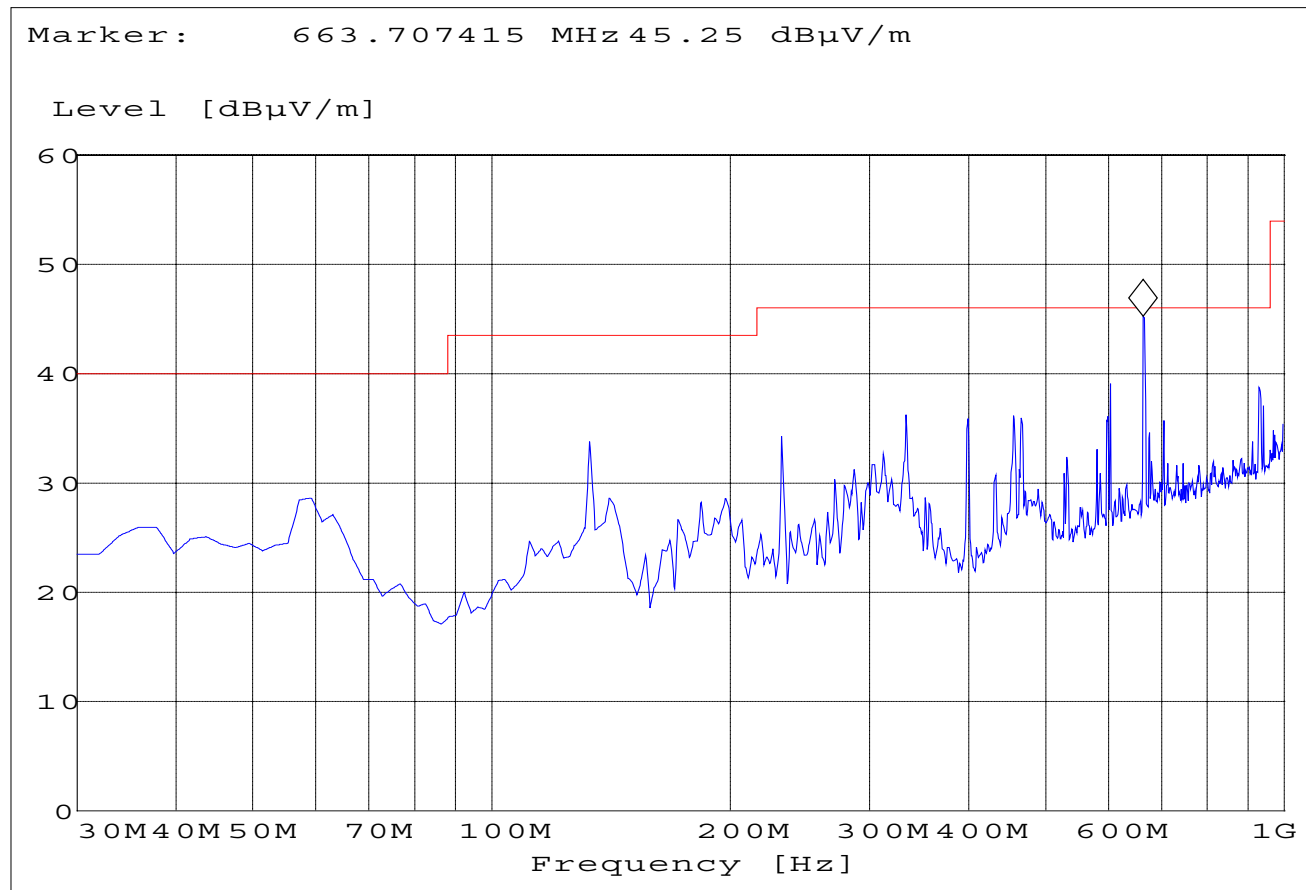
§ 15.209

30MHz – 1GHz

SWEEP TABLE: "BT Spuri hi 30-1G"

Short Description: 15.247 30MHz-1GHz

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





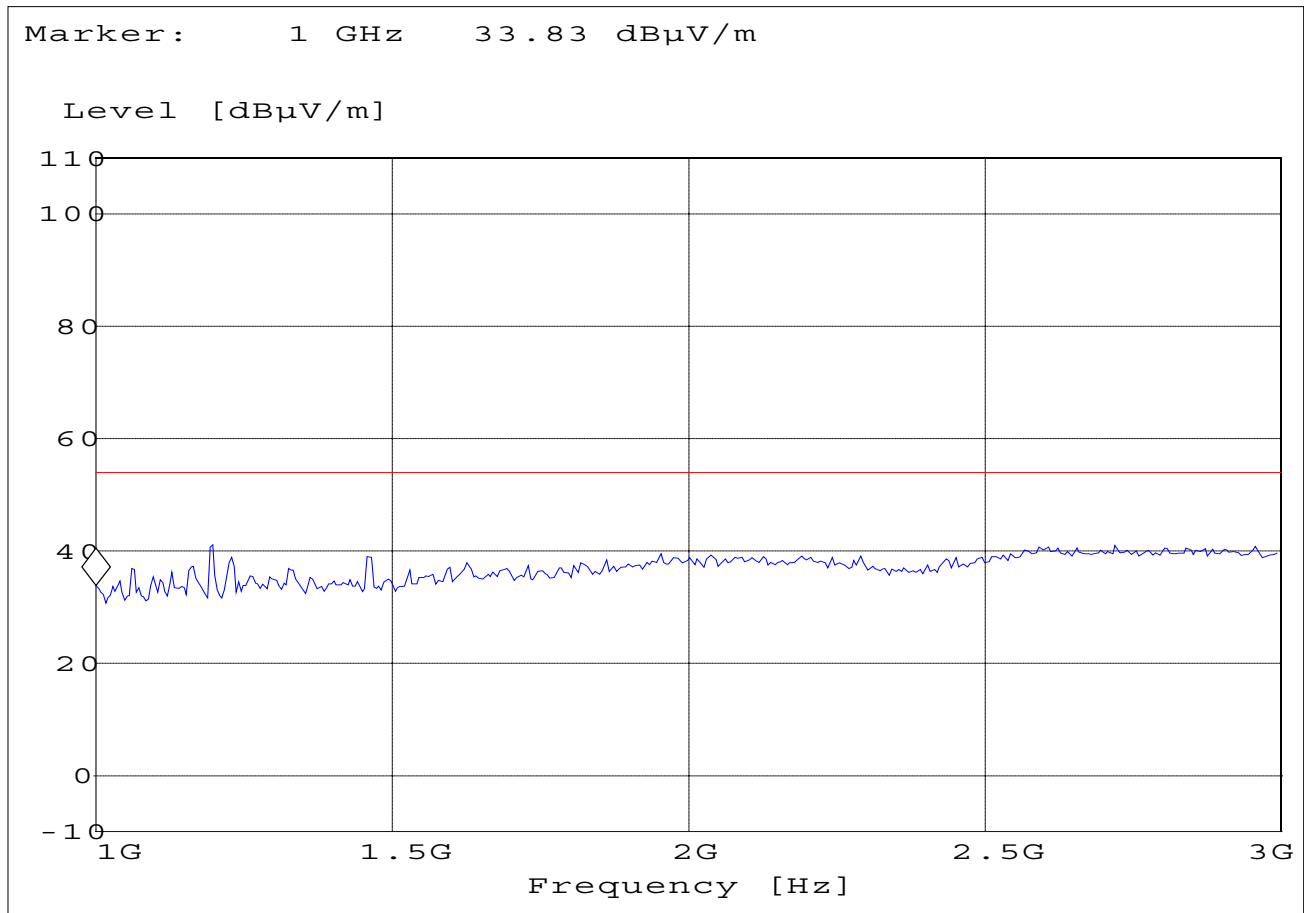
**RECEIVER SPURIOUS RADIATION**

**§ 15.209**

**1GHz – 3GHz**

SWEEP TABLE: "BT Spuri hi 1-3G"  
 Short Description: 15.247 Spurious 1-3 GHz

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



RECEIVER SPURIOUS RADIATION

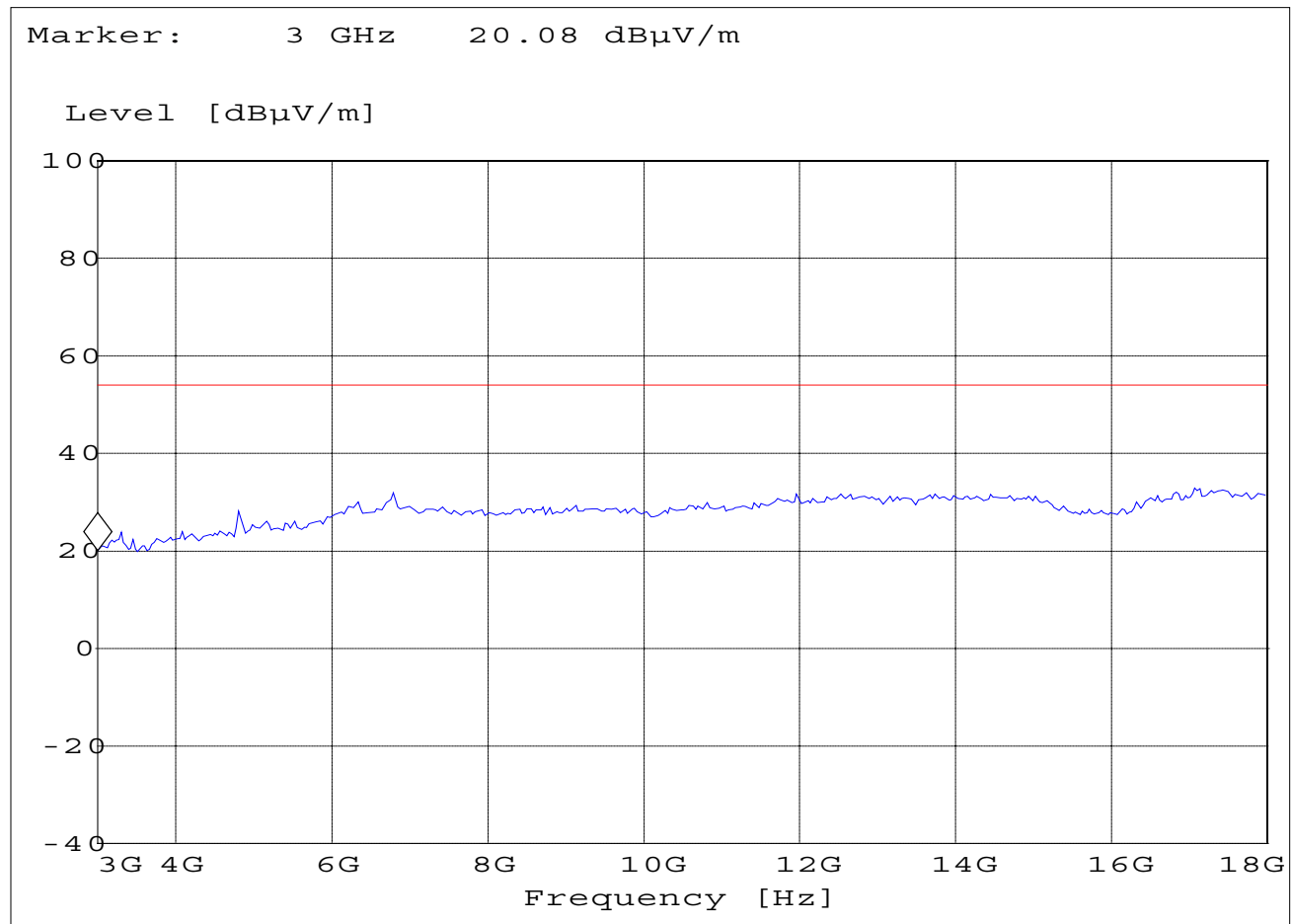
§ 15.209

3GHz – 18GHz

SWEEP TABLE: "BT Spuri hi 3-18G"

Short Description: 15.247 Spurious 3-18 GHz

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



RECEIVER SPURIOUS RADIATION

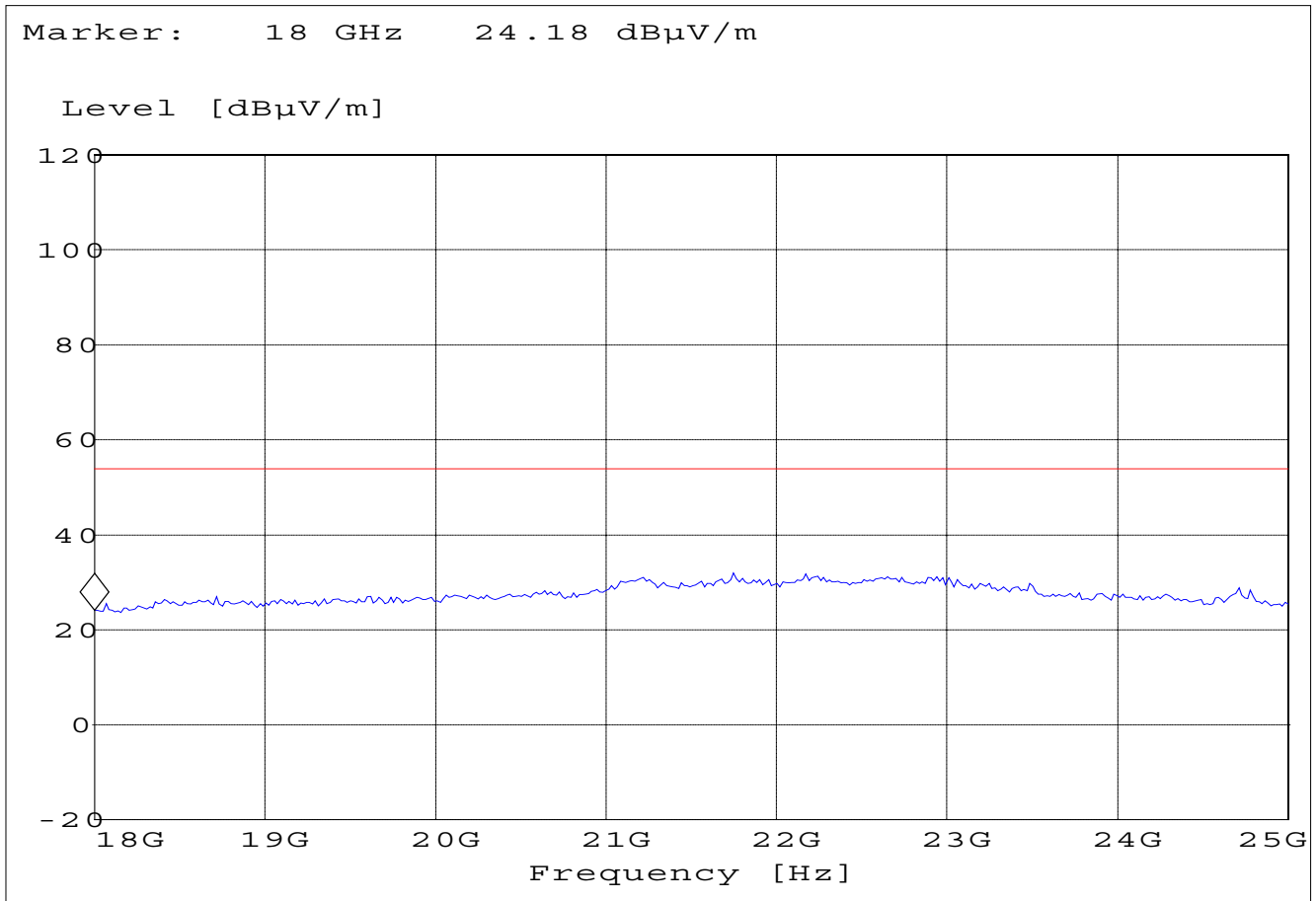
§ 15.209

18GHz – 25GHz

SWEEP TABLE: "BT Spuri hi 18-25G"

Short Description: 15.247 Spurious 18-25GHz

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

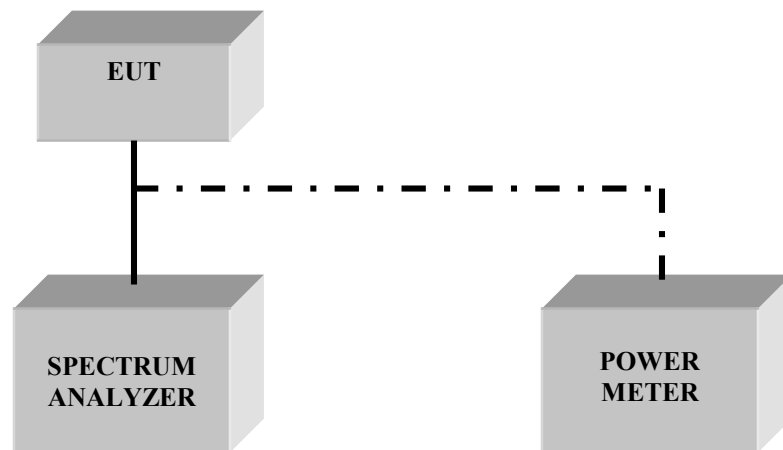


**TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS**

<b>No</b>	<b>Instrument/Ancillary</b>	<b>Type</b>	<b>Manufacturer</b>	<b>Serial No.</b>
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	826880/010
03	Signal Generator	SMY02	Rohde & Schwarz	836878/011
04	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02
05	Power Amplifier	250W1000	Amplifier Research	300031
06	Biconilog Antenna	3141	EMCO	0005-1186
07	Horn Antenna	SAS-200/571	AH Systems	325
08	Power Splitter	11667B	Hewlett Packard	645348
09	Climatic Chamber	VT4004	Votch	G1115
10	Pre-Amplifier	JS4-00102600	Miteq	00616
11	2-3GHz band reject filter	BRM50701	Microtronics	NA
12	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807

**BLOCK DIAGRAMS**

**Conducted Testing**



**Radiated Testing**

**ANECHOIC CHAMBER**

