CETECOM Inc.

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

Test report no.: EMC_320_FCC15.247_2002
FCC Part 15.247 for DSSS systems / CANADA RSS-210
(WL-308)

Table of Contents

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: Harpreet Sidhu

1.2 Testing laboratory

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1.3 Details of applicant

Name	**:**	**3COM Corporation**
Street	**:**	**5400 Bayfront Plaza**
City / Zip Code	**:**	**Santa Clara, CA 95052**
Country	**:**	**USA**
Contact	**:**	**Collin Smith**
Telephone	**:**	**+1 408 326 5274**
Tele-fax	**:**	**+1 408 326 5854**
e-mail	**:**	**col_smith@3com.com**

1.4 Application details

Date of receipt of application	:	2002-07-24
Date of receipt test item	:	2002-09-20
Date of test	:	2002-09-21/28

1.5 Test item

Manufacturer	:	Applicant
Marketing Name	:	3COM Wireless LAN
Model No.	:	WL-308
Description	:	802.11b WLAN Access point
FCC-ID	:	DF6-WL-308
IC-ID	:	2299A-WL308

Additional information

Frequency	:	2412MHz – 2472MHz
Type of modulation	:	DSSS
Number of channels	:	13
Antenna	:	3COM® 8dBi Omnidirectional Antenna Product # 3CWE491
Power supply	:	5.0 VDC
Output power	:	24.02dBm (252.35mW) max. EIRP
Extreme temp. Tolerance	:	-20ºC - +55ºC

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")	**Passed**

Technical responsibility for area of testing:

Date	Section	Name	Signature
2002-10-04	EMC & Radio	Siegfried Lehmann (Technical Manager)	

Responsible for test report and project leader:

Date	Section	Name	Signature
2002-10-04	EMC & Radio	Harpreet Sidhu (EMC Engineer)	

2.2 Test report

TEST REPORT

Test report no. : EMC_320_FCC15.247_2002
(WL-308)

TEST REPORT REFERENCE

NOTE: EUT support following three antennas;

1. **Integrated Antenna**
2. **3COM® 8dBi Omnidirectional External Antenna Product # 3CWE491**
3. **Omnidirectional 2.4GHz External Antenna Product # 3CWE483**

This test report is based on EUT combination with 8dBi antenna (Product # 3CWE491) depicting worst case scenario. For details please refer to EIRP measurements.

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.

EUT with 3COM® 8dBi Omnidirectional Antenna Product # 3CWE491

	Low channel	Mid channel	High channel
Conducted Power	18.98dBm	18.40dBm	18.29dBm
Raidated Power (EIRP)	24.02dBm	23.27dBm	23.66dBm
Cable loss (6ft cbl. + pig tail)	4.5dB	4.5dB	4.5dB
Antenna Gain	9.54dBi	9.37dBi	9.87dBi

The calculated antenna gain is between +9.37dBi and +9.87dBi.

EUT with Omnidirectional 2.4GHz External Antenna Product # 3CWE483

	Low channel	Mid channel	High channel
Conducted Power	18.98dBm	18.40dBm	18.29dBm
Raidated Power (EIRP)	20.53dBm	19.62dBm	19.77dBm
Antenna Gain	1.55dBi	1.22dBi	1.48dBi

The calculated antenna gain is between +1.22dBi and +1.55dBi.

EUT with Integrated Antenna

	Low channel	Mid channel	High channel
Conducted Power	18.98dBm	18.40dBm	18.29dBm
Raidated Power (EIRP)	21.53dBm	22.06dBm	23.34dBm
Antenna Gain	2.55dBi	3.66dBi	5.05dBi

The calculated antenna gain is between +2.55dBi and +5.05dBi.

SPECTRUM BANDWIDTH OF DSSS SYSTEM §15.247(a) (2)
6 dB bandwidth

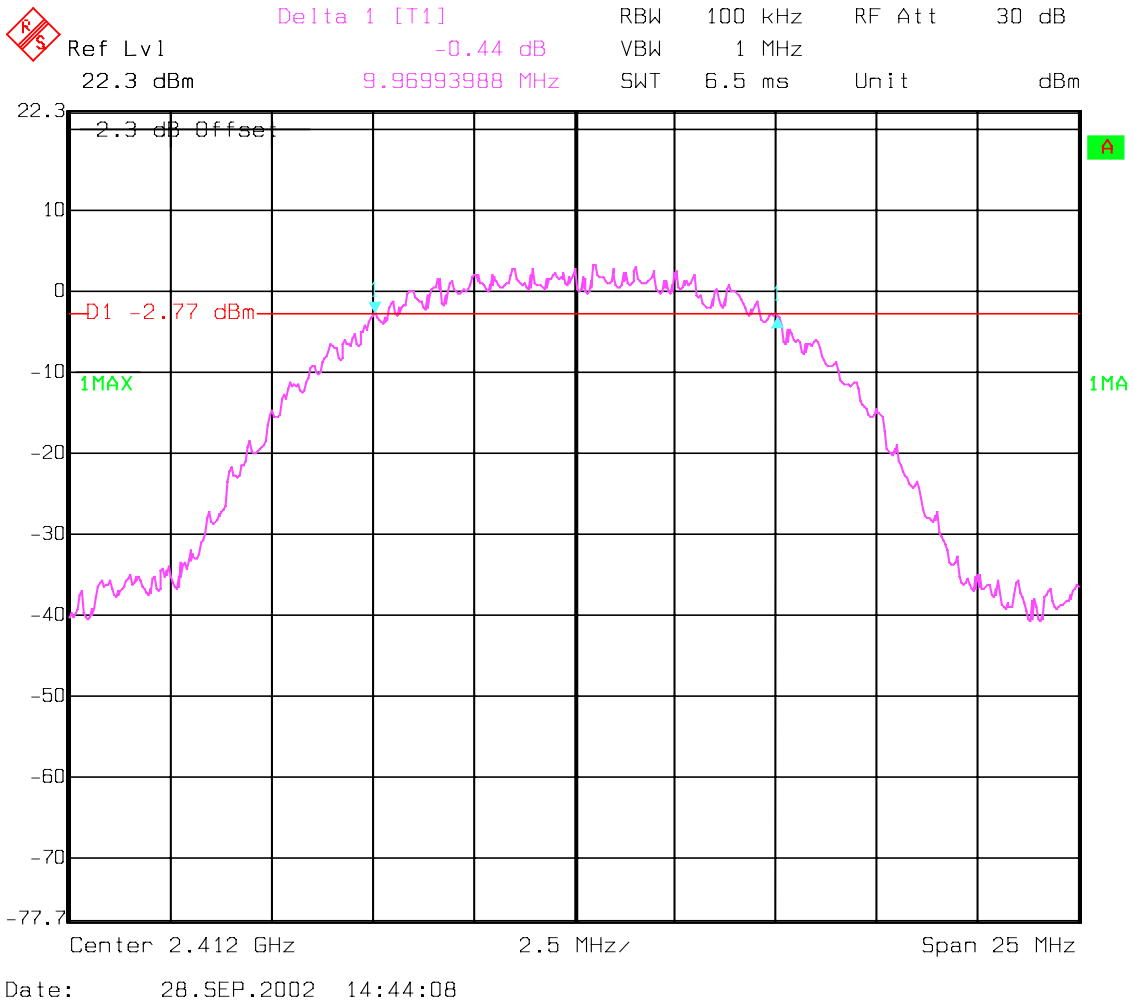
TEST CONDITIONS		6 dB BANDWIDTH (MHz)		
Frequency (MHz)		2412	2442	2472
T_{nom}(23)°C	V_{nom}(5.0)VDC	9.97	9.97	9.62

LIMIT **SUBCLAUSE §15.247(a) (2)**

The minimum 6dB bandwith shall shall be at least 500 KHz

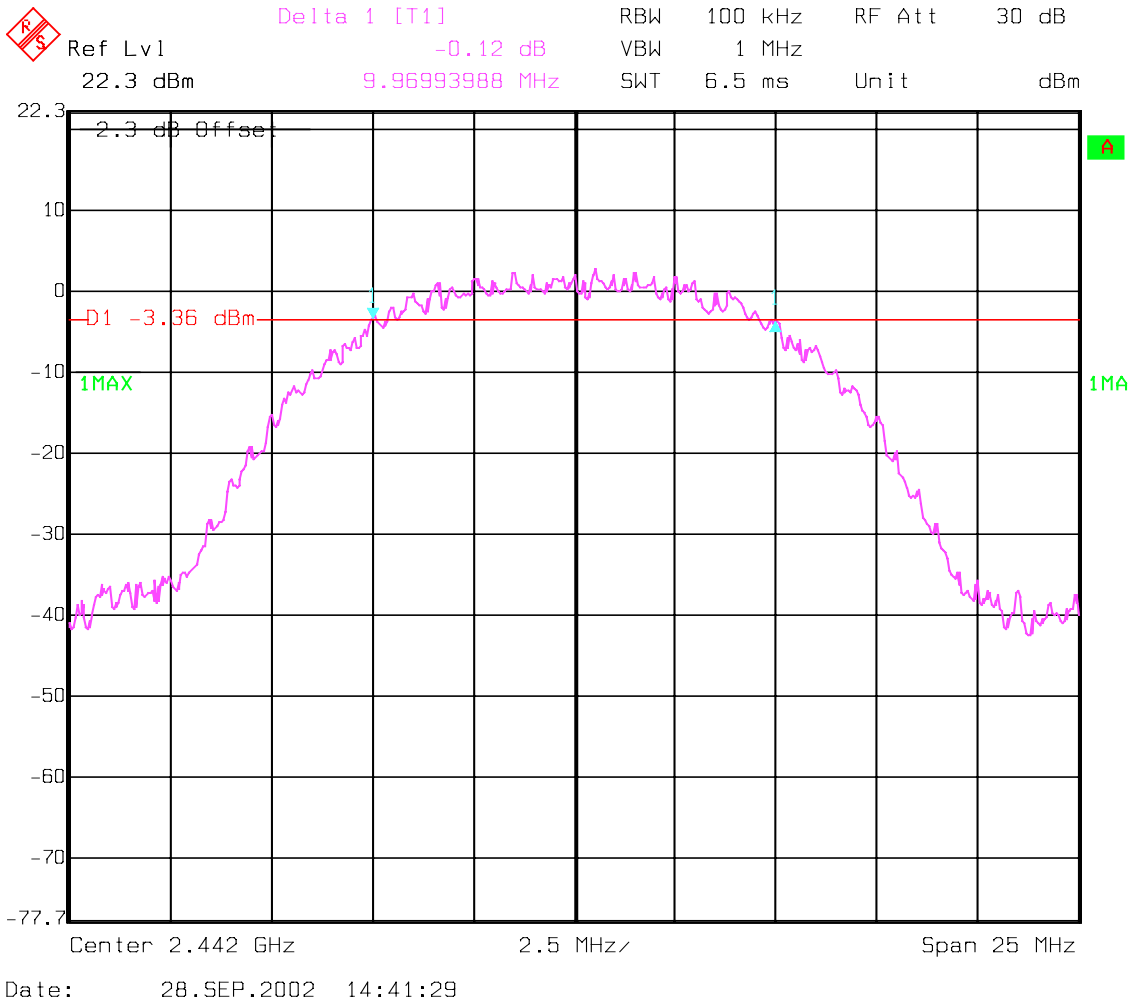
SPECTRUM BANDWIDTH OF DSSS SYSTEM **§15.247(a) (2)**
6 dB bandwidth

Lowest Channel: 2412MHz



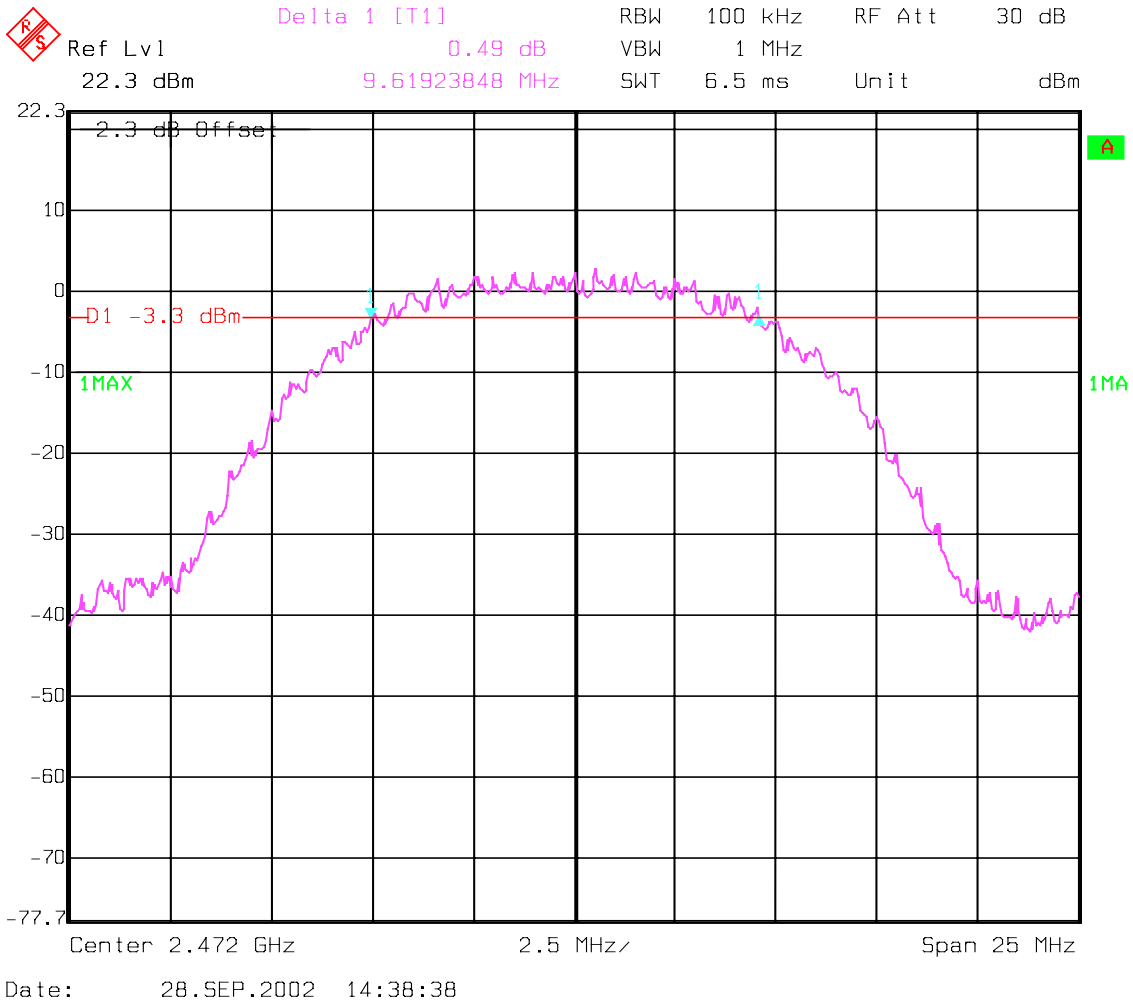
SPECTRUM BANDWIDTH OF DSSSS SYSTEM **§15.247(a) (2)**
6 dB bandwidth

Mid Channel: 2442MHz



SPECTRUM BANDWIDTH OF DSSS SYSTEM **§15.247(a) (2)**
6 dB bandwidth

Highest Channel: 2472MHz



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

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)			
Frequency (MHz)			2412	2442	2472
T_{nom}(23)°C	V_{nom}(5.0)VDC	Pk	18.98	18.40	18.29
Measurement uncertainity		±0.5dBm			

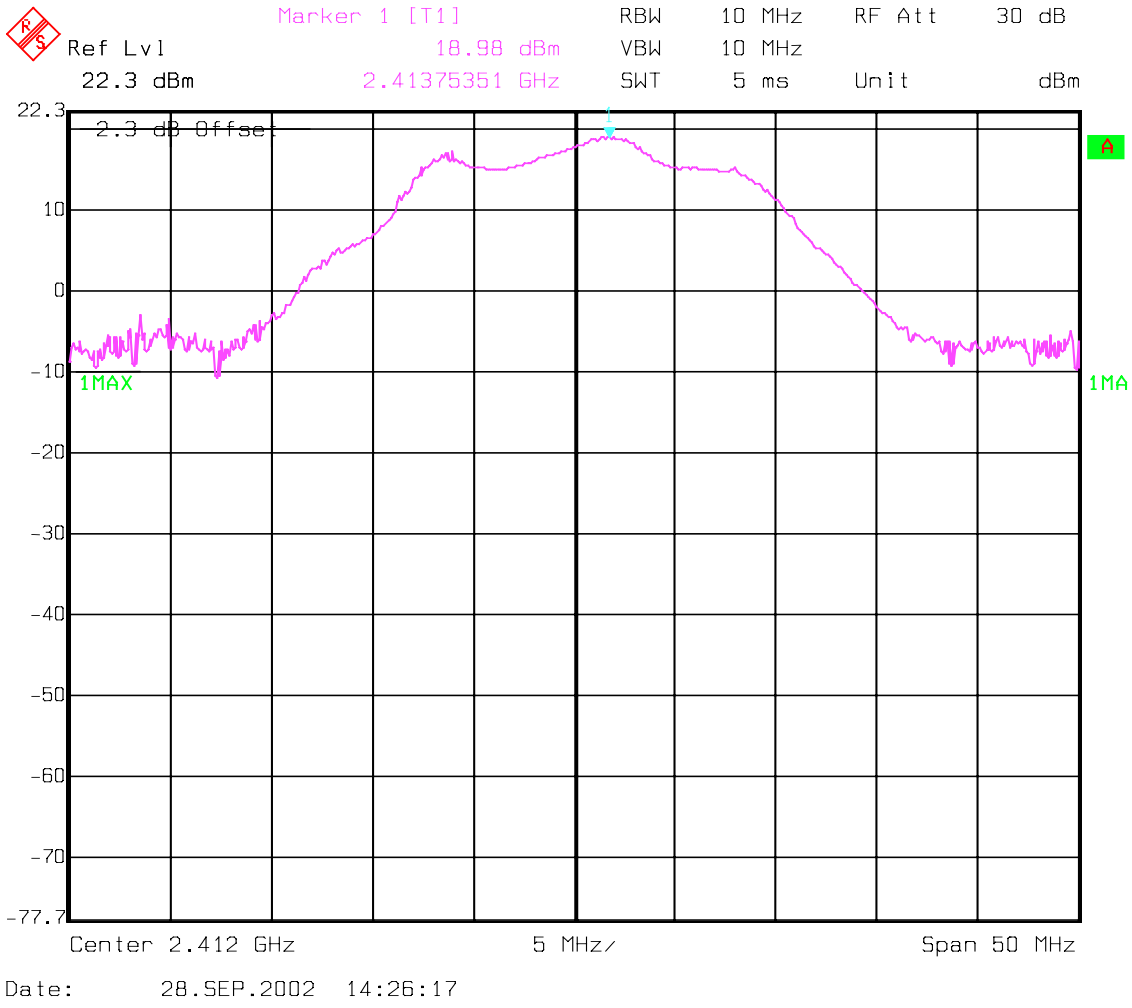
RBW / VBW : 10MHz

LIMIT **SUBCLAUSE § 15.247 (b) (1)**

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

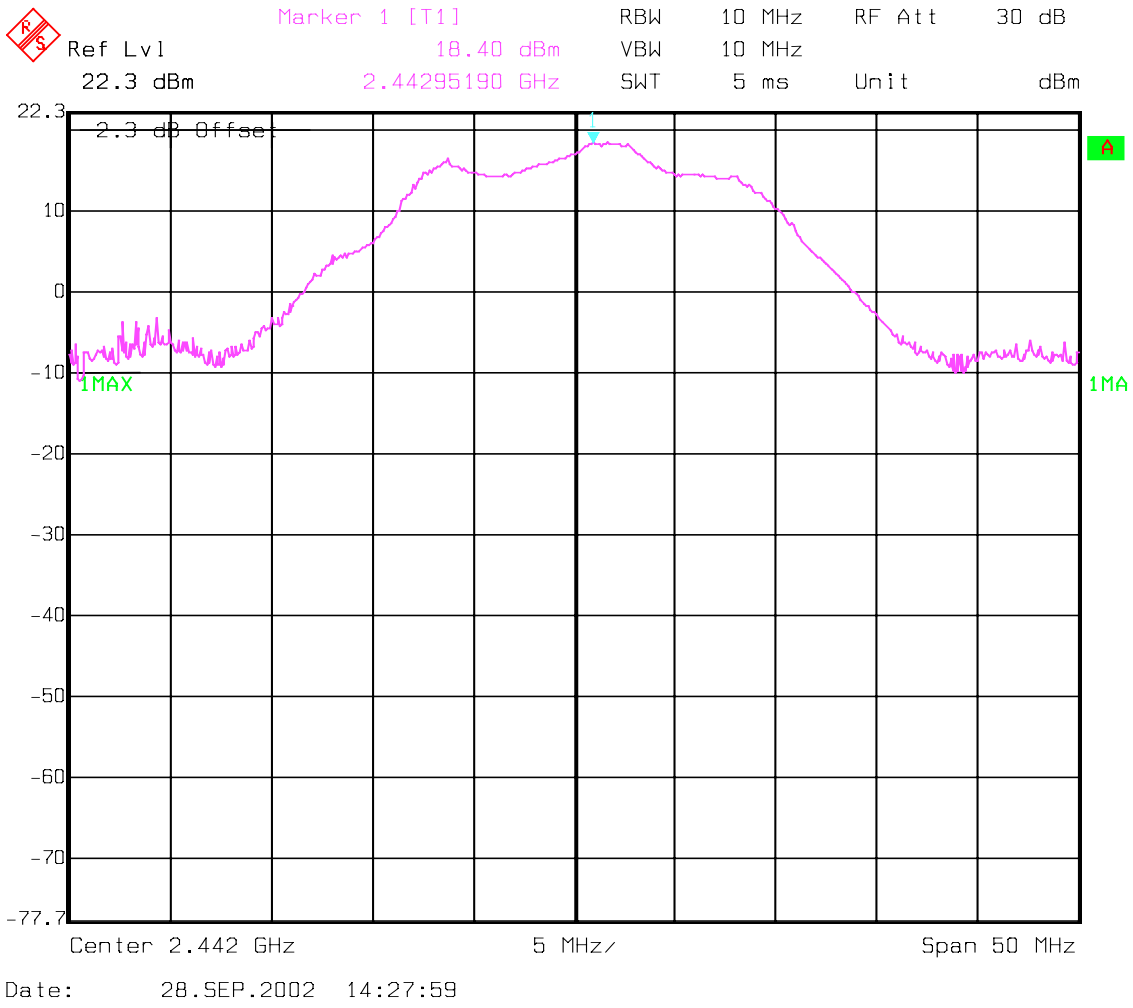
PEAK OUTPUT POWER (CONDUCTED) §15.247 (b) (1)

Lowest Channel: 2412MHz



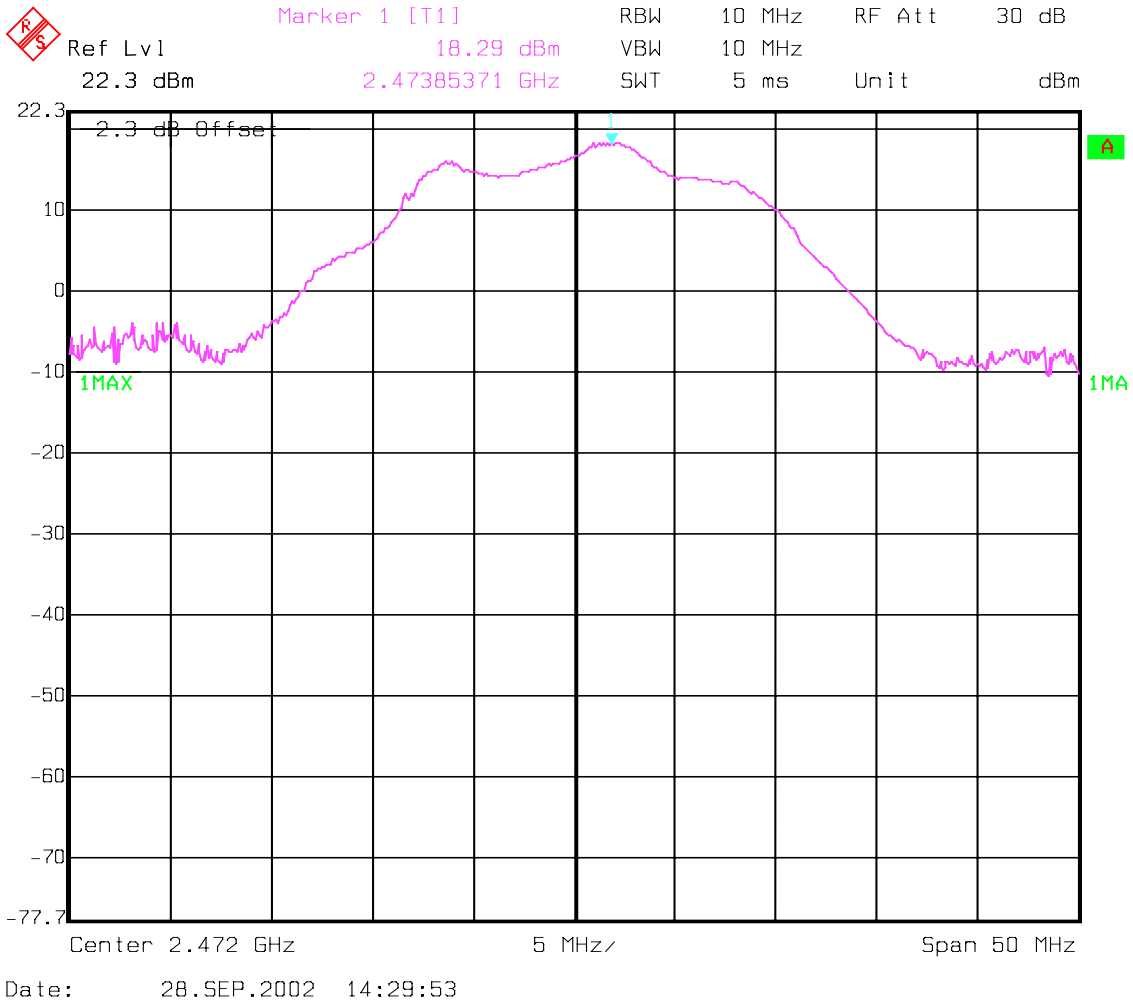
PEAK OUTPUT POWER (CONDUCTED) §15.247 (b)

Mid Channel: 2442MHz



PEAK OUTPUT POWER (CONDUCTED) §15.247 (b)

Highest Channel: 2472MHz



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

EIRP:

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2412	2442	2472
T_{nom}(23)°C	V_{nom}(5.0)VDC	24.02	23.27	23.66
Measurement uncertainty		±0.5dBm		

RBW/VBW : 10MHz

LIMIT **SUBCLAUSE § 15.247 (b) (1)**

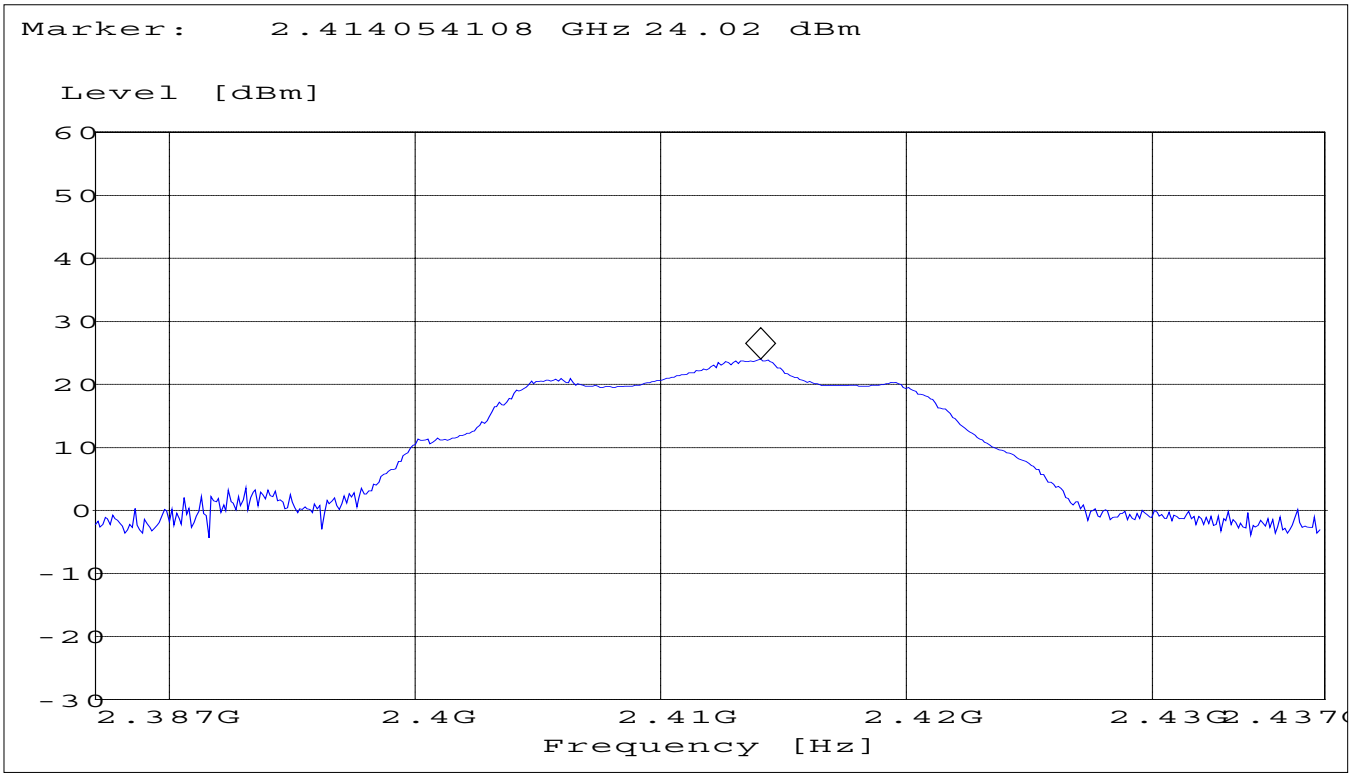
Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt / 30dBm

PEAK OUTPUT POWER (RADIATED) §15.247 (b) (1)

Lowest Channel: 2412MHz

SWEEP TABLE: "EIRP RLAN ch-1"

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



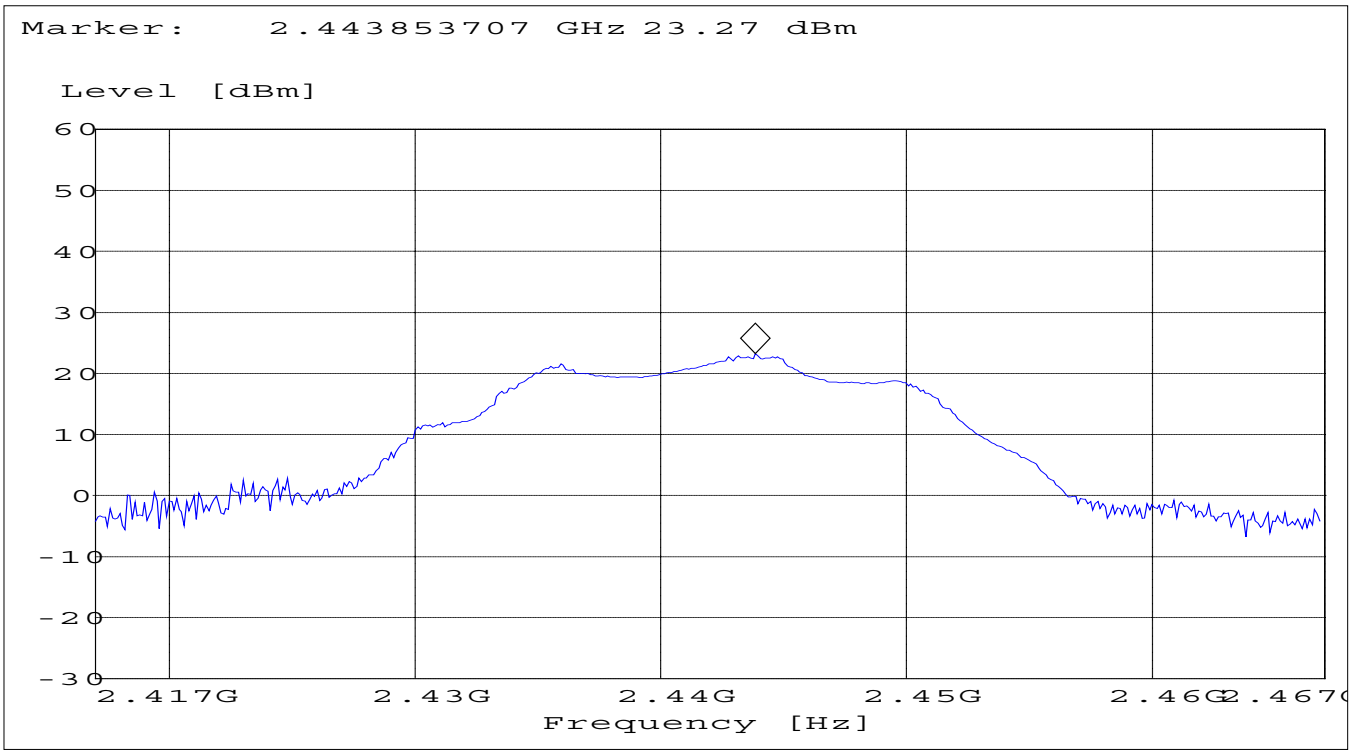
PEAK OUTPUT POWER (RADIATED) §15.247 (b) (1)

Mid Channel: 2442MHz

SWEEP TABLE: "EIRP RLAN CH7"

Short Description: EIRP RLAN channel-2442MHz

Start Frequency	Stop Frequency	Detector	Meas. Time	IF BW
2.417GHz	2.467GHz	MaxPeak	Coupled	10 MHz

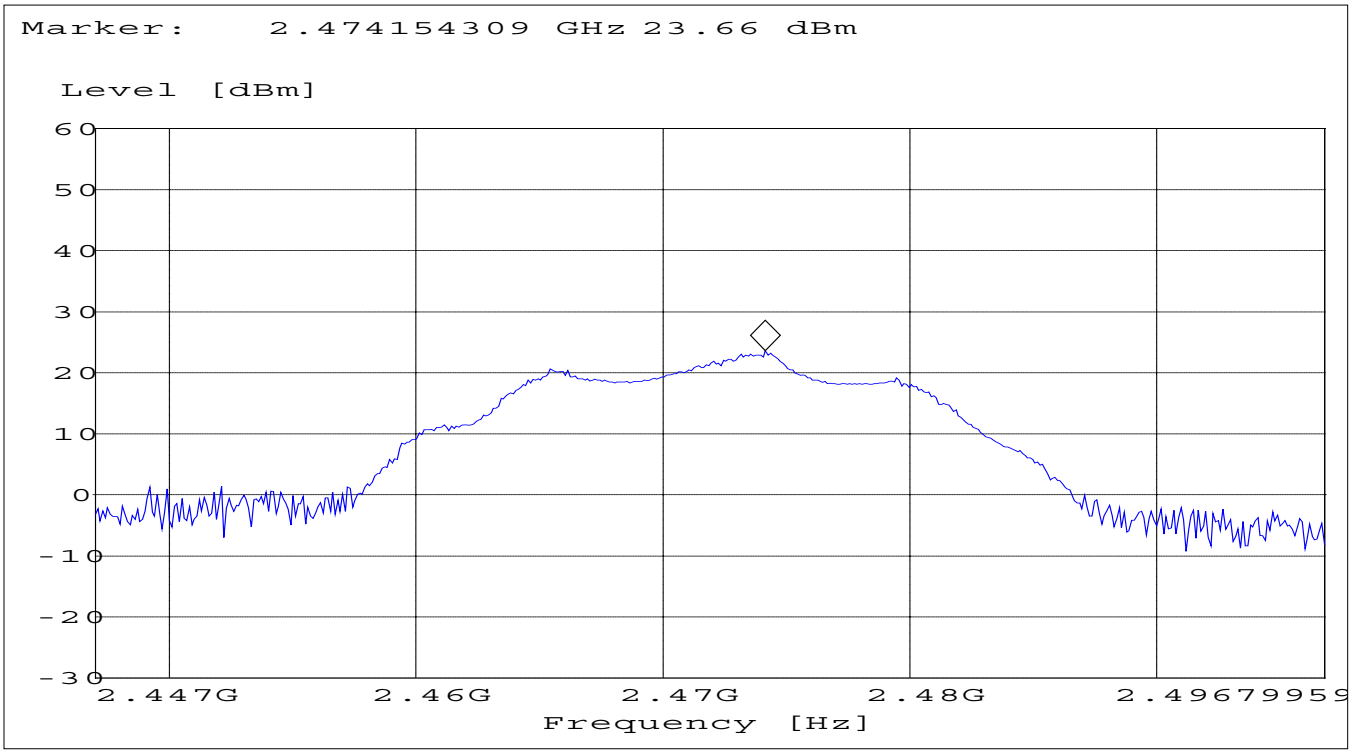


PEAK OUTPUT POWER (RADIATED) §15.247 (b) (1)

Highest Channel: 2472MHz

SWEEP TABLE: "EIRP RLAN CH13"

Short Description:		EIRP RLAN channel-2472MHz		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF BW
2.447GHz	2.497GHz	MaxPeak	Coupled	10 MHz



POWER SPECTRAL DENSITY §15.247 (d)

TEST CONDITIONS		POWER SPECTRAL DENSITY (dBm)		
Frequency (MHz)		2412	2442	2472
T_{nom}(23)°C	V_{nom}(5.0)VDC	-11.44	-12.65	-11.04

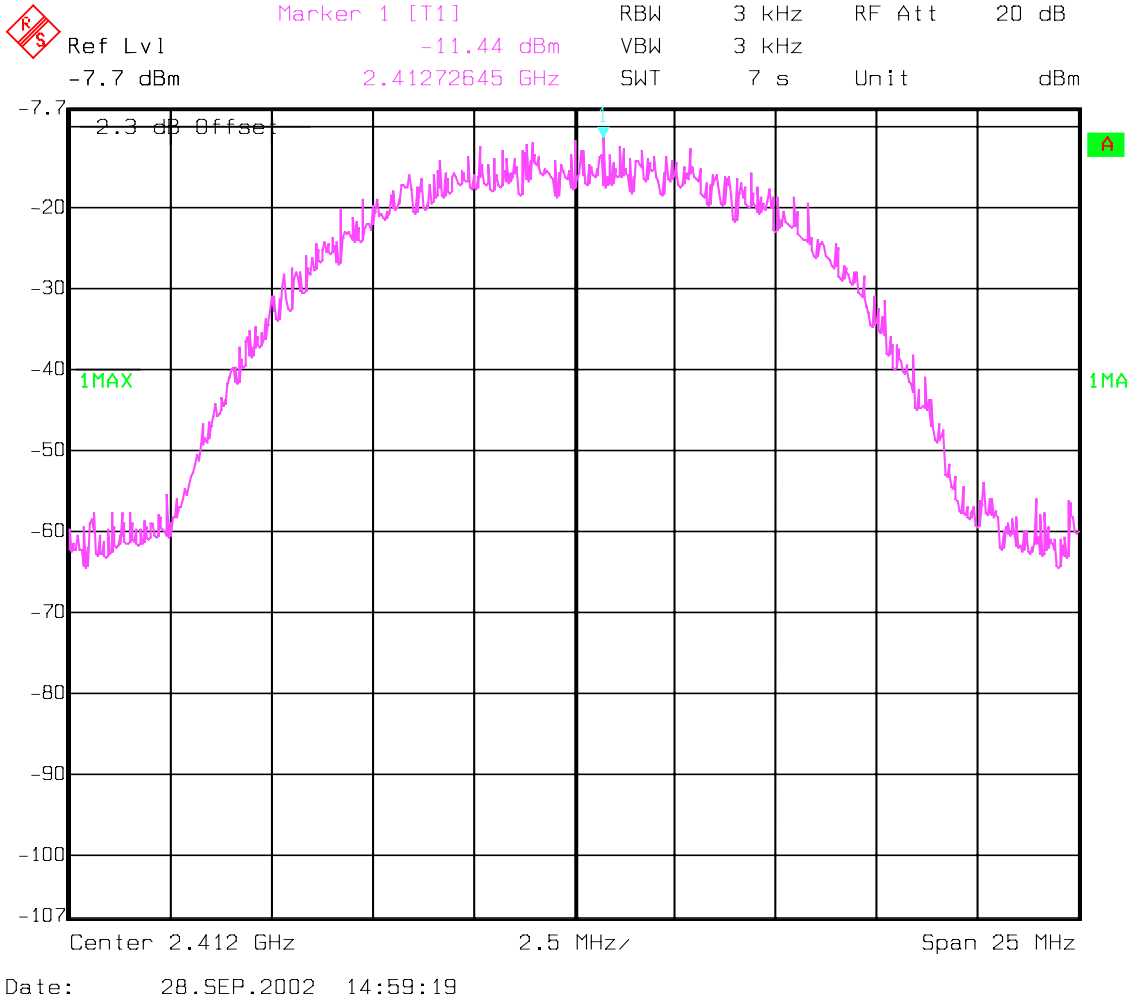
LIMIT **SUBCLAUSE §15.247(d)**

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

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

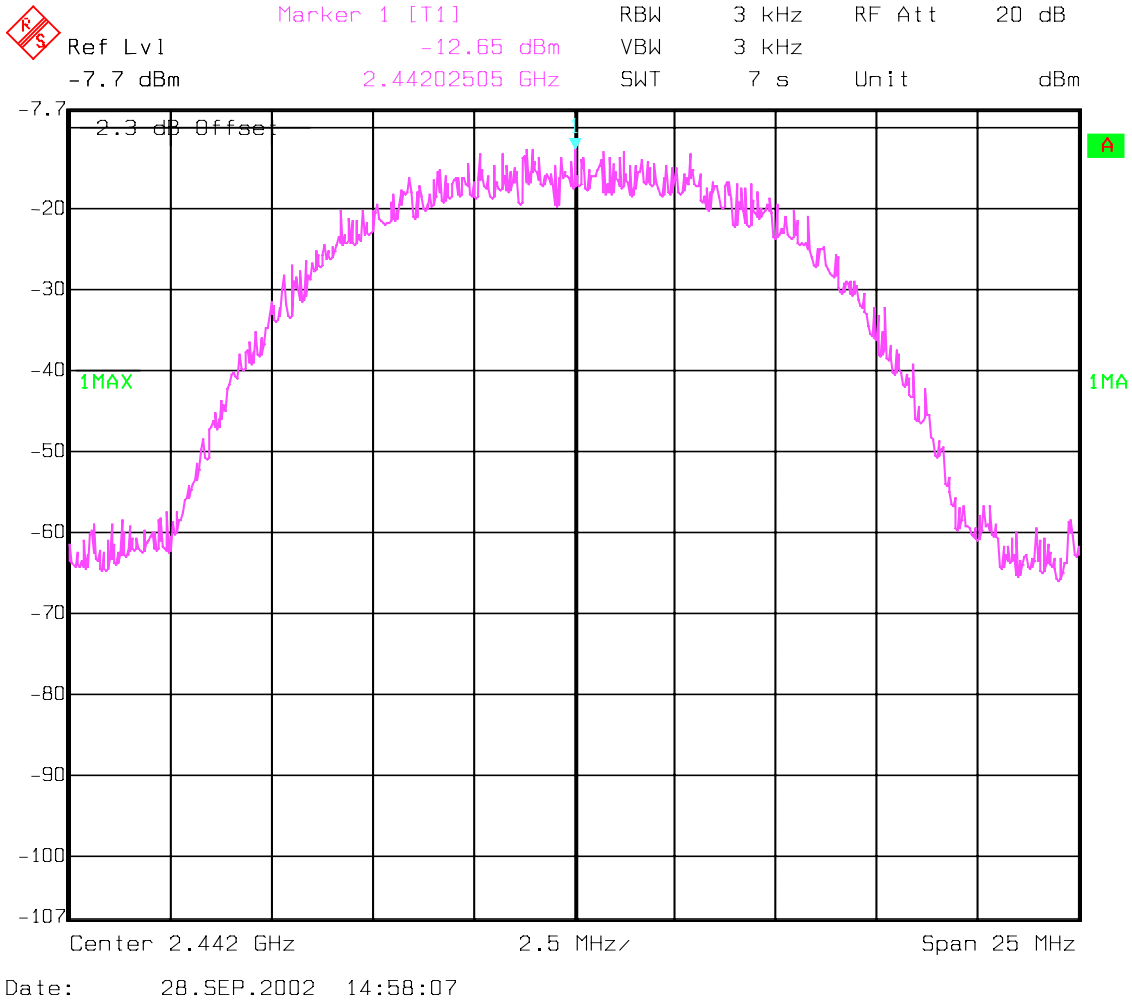
POWER SPECTRAL DENSITY §15.247(d)

Lowest Channel: 2412MHz



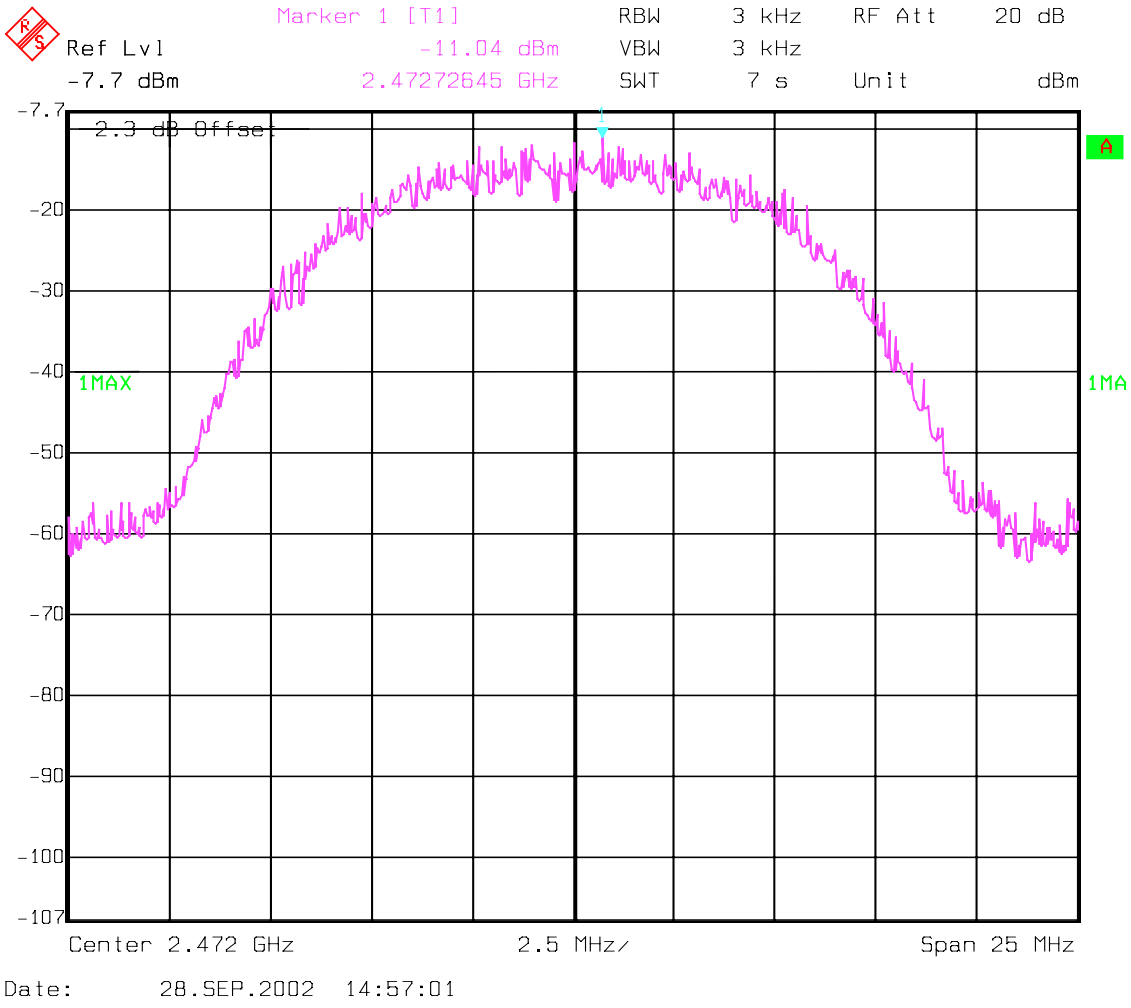
POWER SPECTRAL DENSITY §15.247(d)

Mid Channel: 2442MHz



POWER SPECTRAL DENSITY §15.247(d)

Highest Channel: 2472MHz



POWER SPECTRAL DENSITY **RSS-210**

TEST CONDITIONS		POWER SPECTRAL DENSITY (dBm/MHz)		
Frequency (MHz)		2412	2442	2472
T_{nom}(23)°C	V_{nom}(5.0)VDC	10.98	10.59	10.74

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

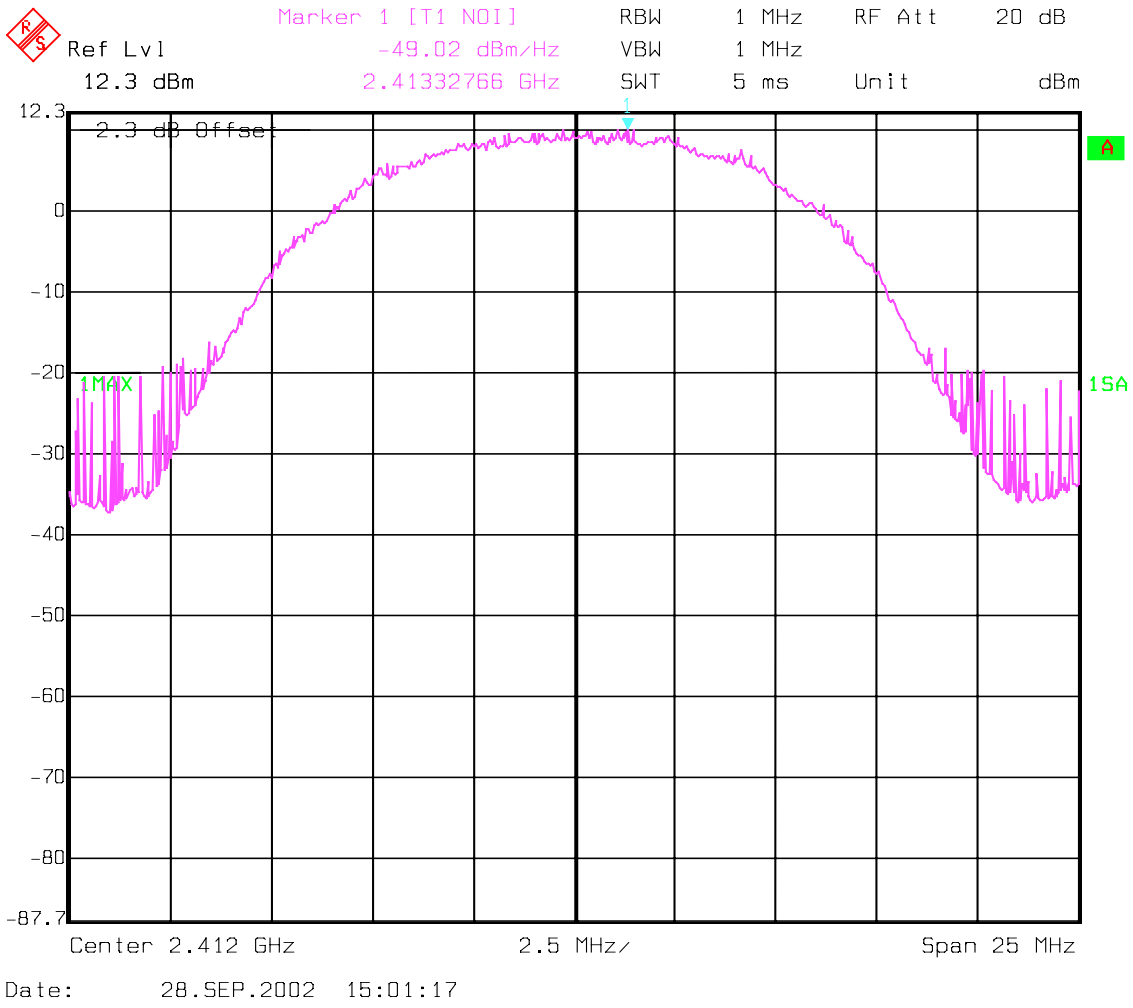
LIMIT **RSS-210**

The peak power spectral density shall be ≤ 50mW/MHz (17dBm/MHz)

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

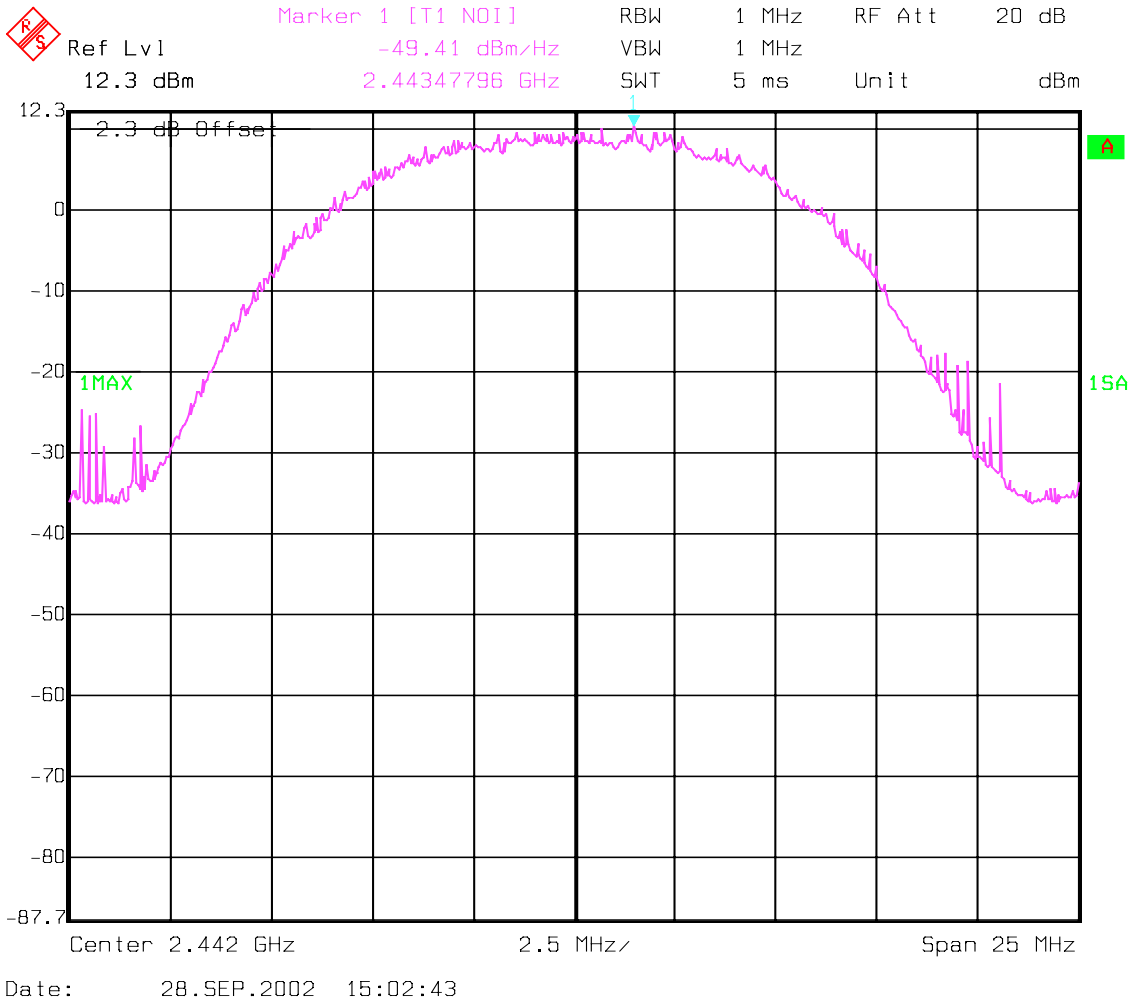
POWER SPECTRAL DENSITY **RSS-210**

Lowest Channel: 2412MHz



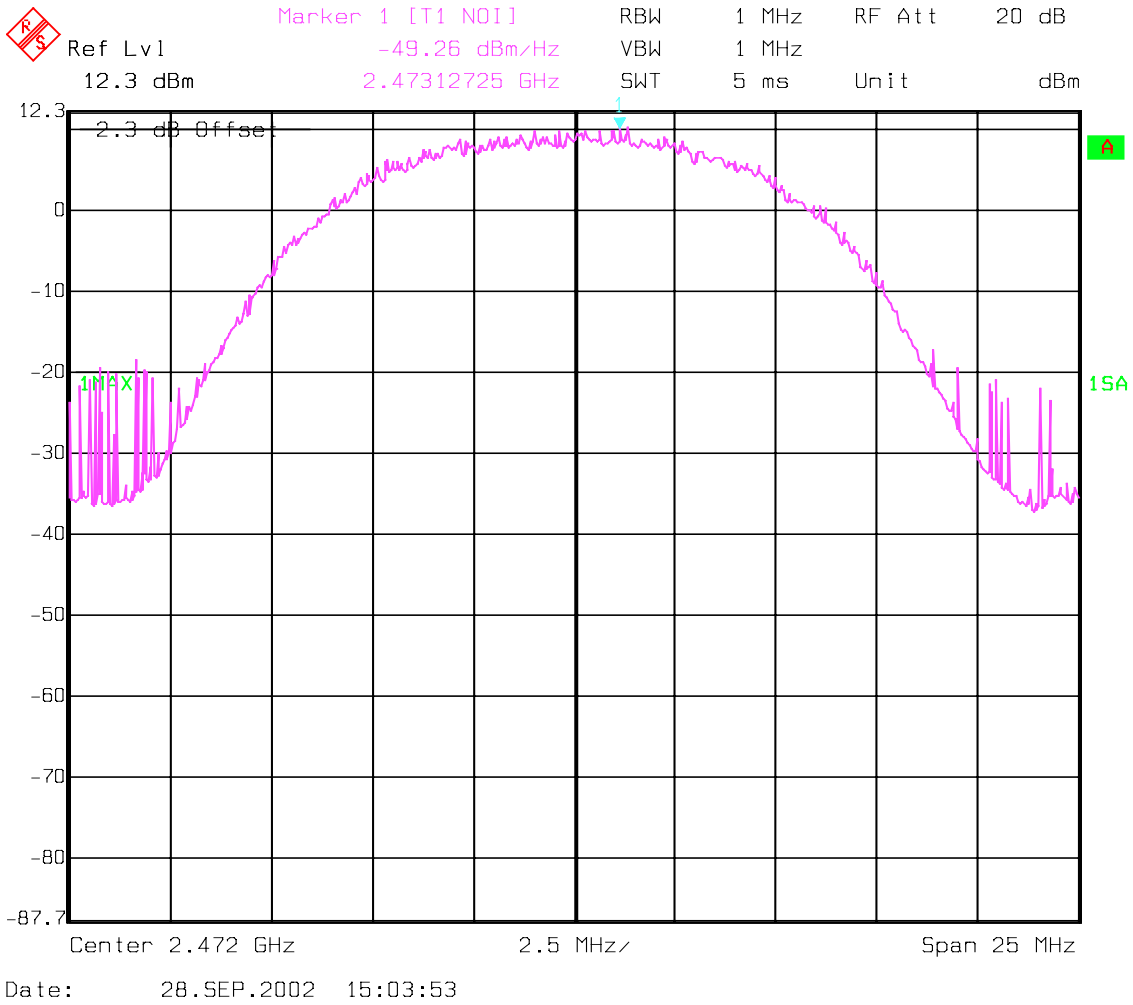
POWER SPECTRAL DENSITY **RSS-210**

Mid Channel: 2442MHz



POWER SPECTRAL DENSITY **RSS-210**

Highest Channel: 2472MHz

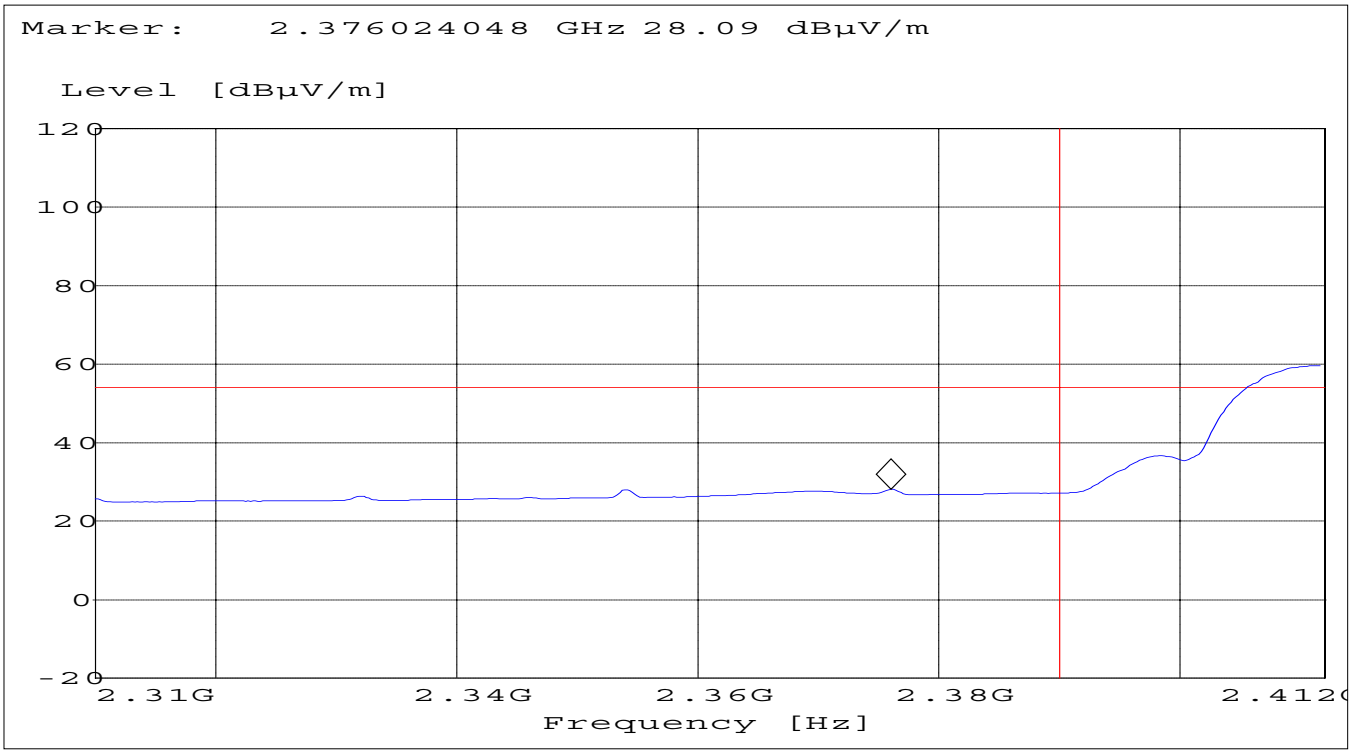


BAND EDGE COMPLIANCE §15.247 (c)

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

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

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

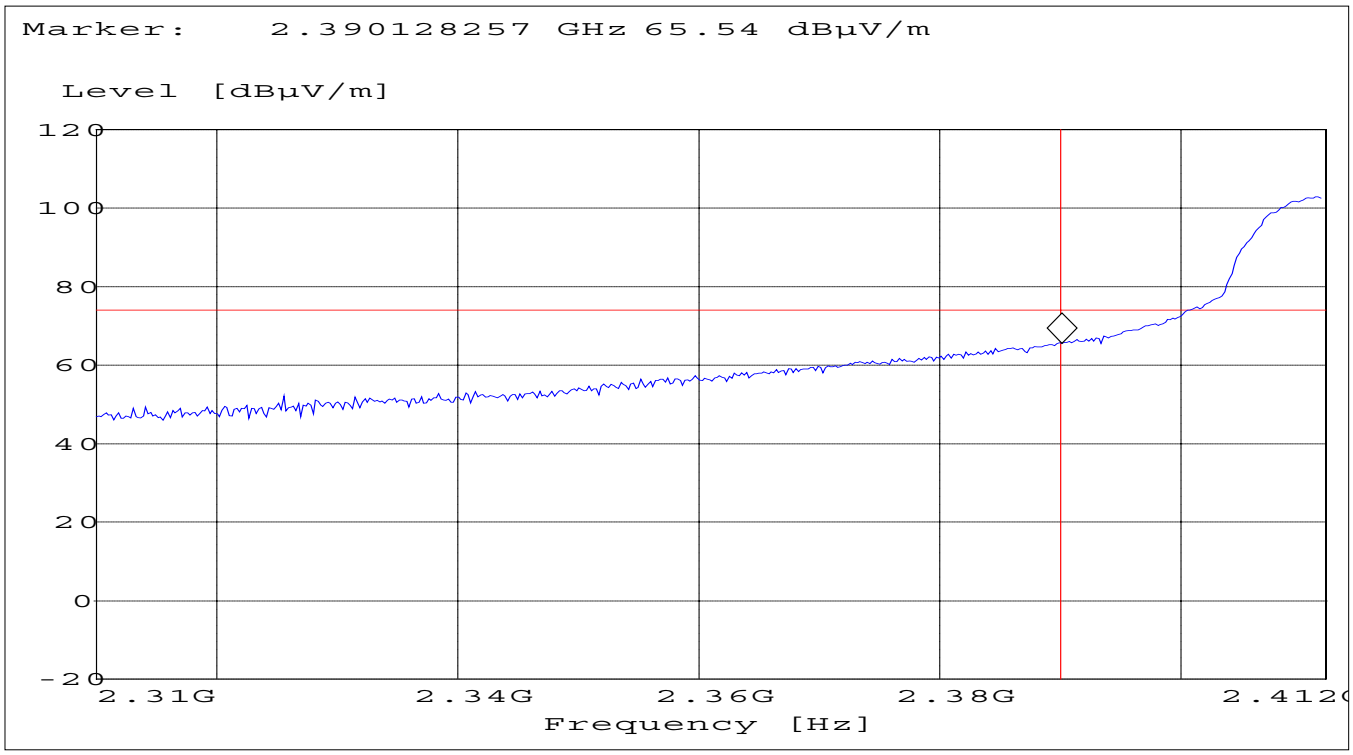


BAND EDGE COMPLIANCE §15.247 (c)

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

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)

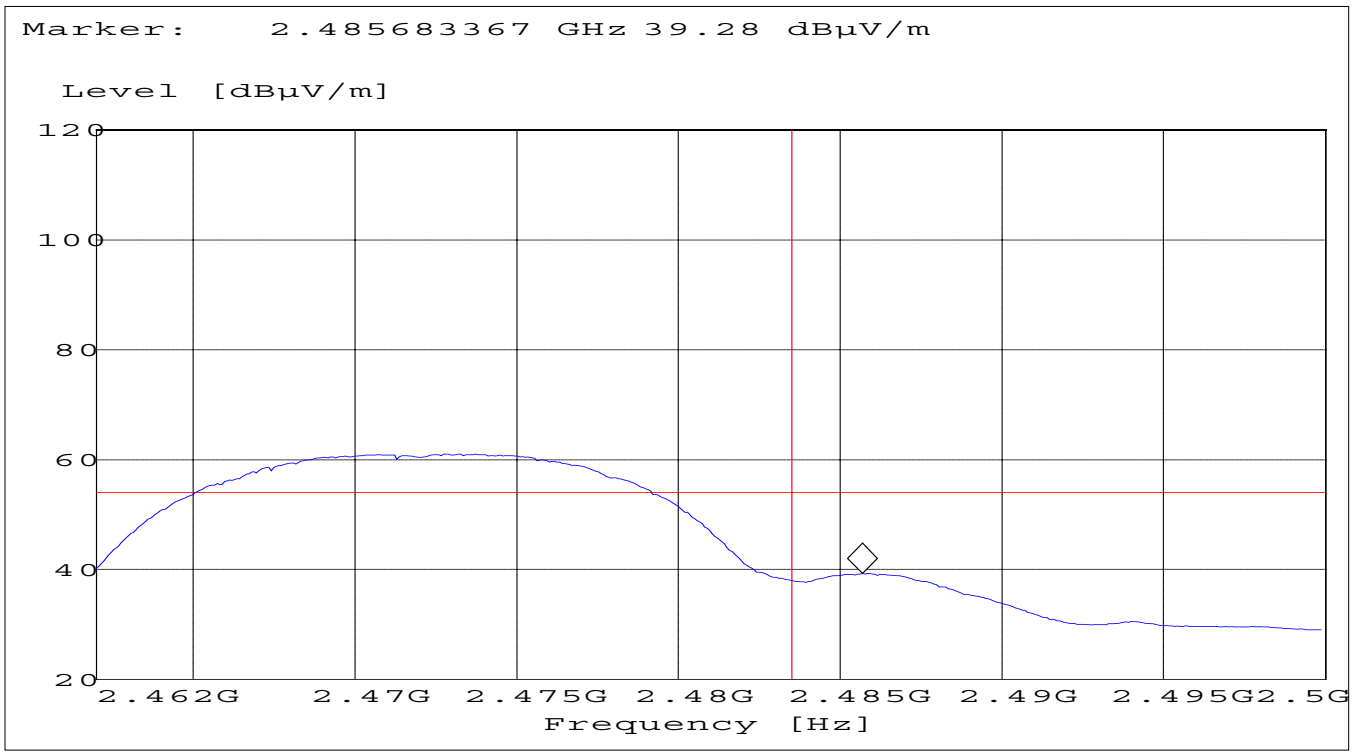


BAND EDGE COMPLIANCE §15.247 (c)

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

Operating condition : Tx at 2472MHz
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)

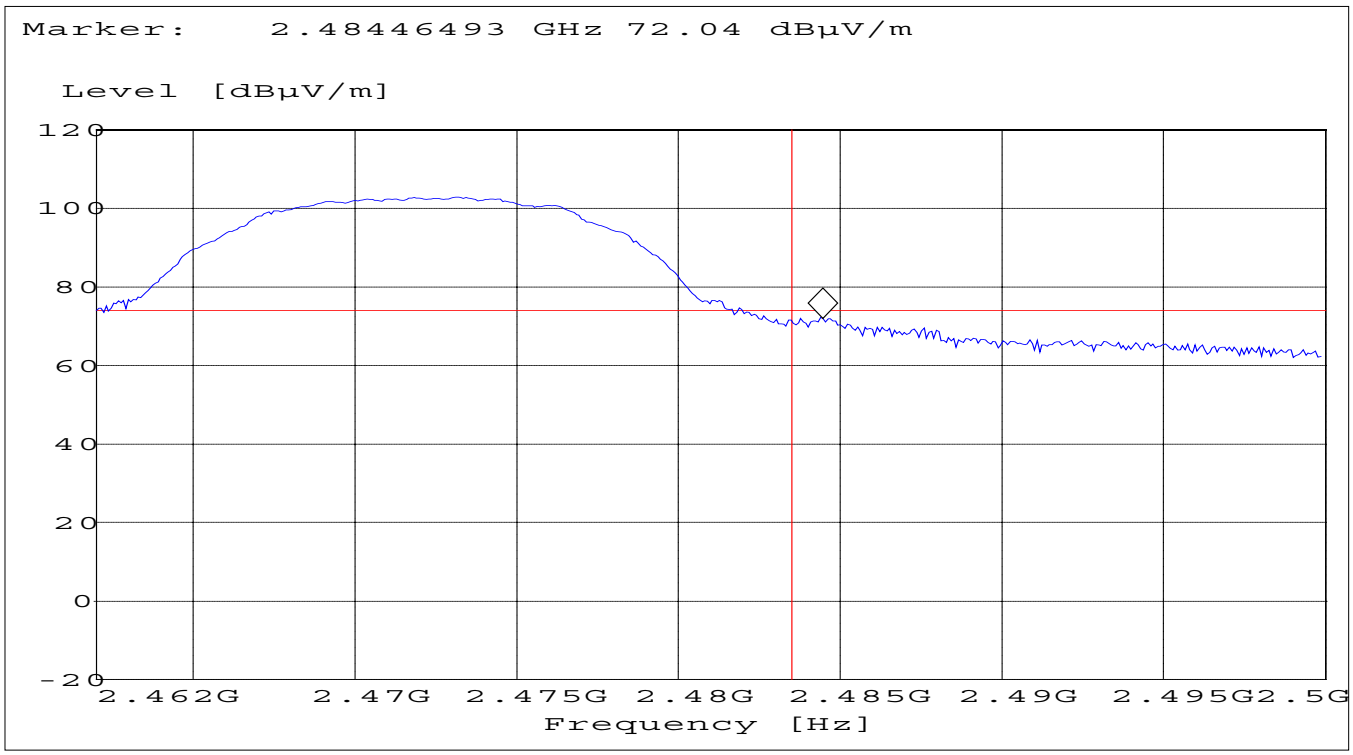


BAND EDGE COMPLIANCE §15.247 (c)

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

Operating condition : Tx at 2472MHz
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 **§ 15.247 (c) (1)**
Transmitter (Conducted)
LIMITS

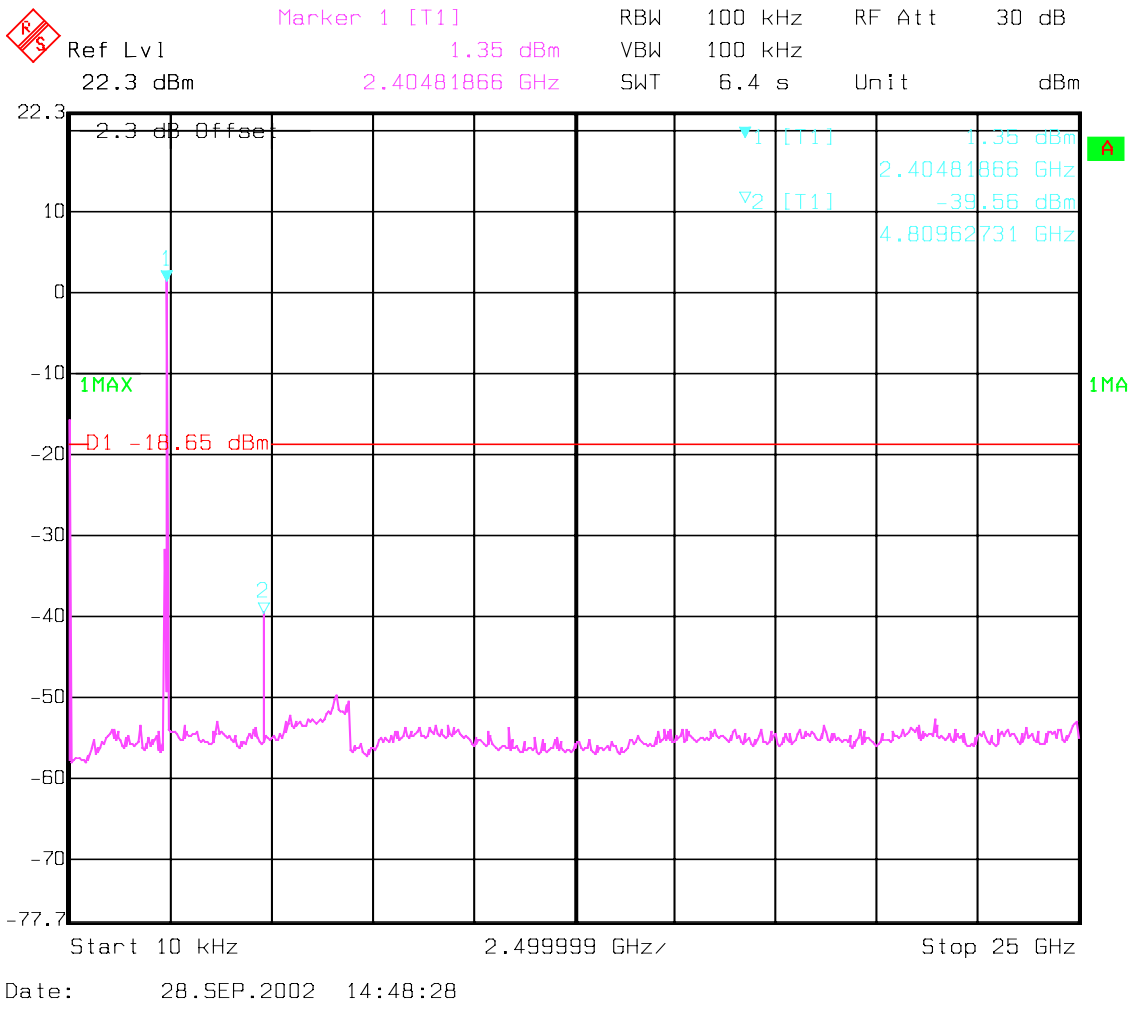
In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

NOTE: 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): 10KHz - 25GHz

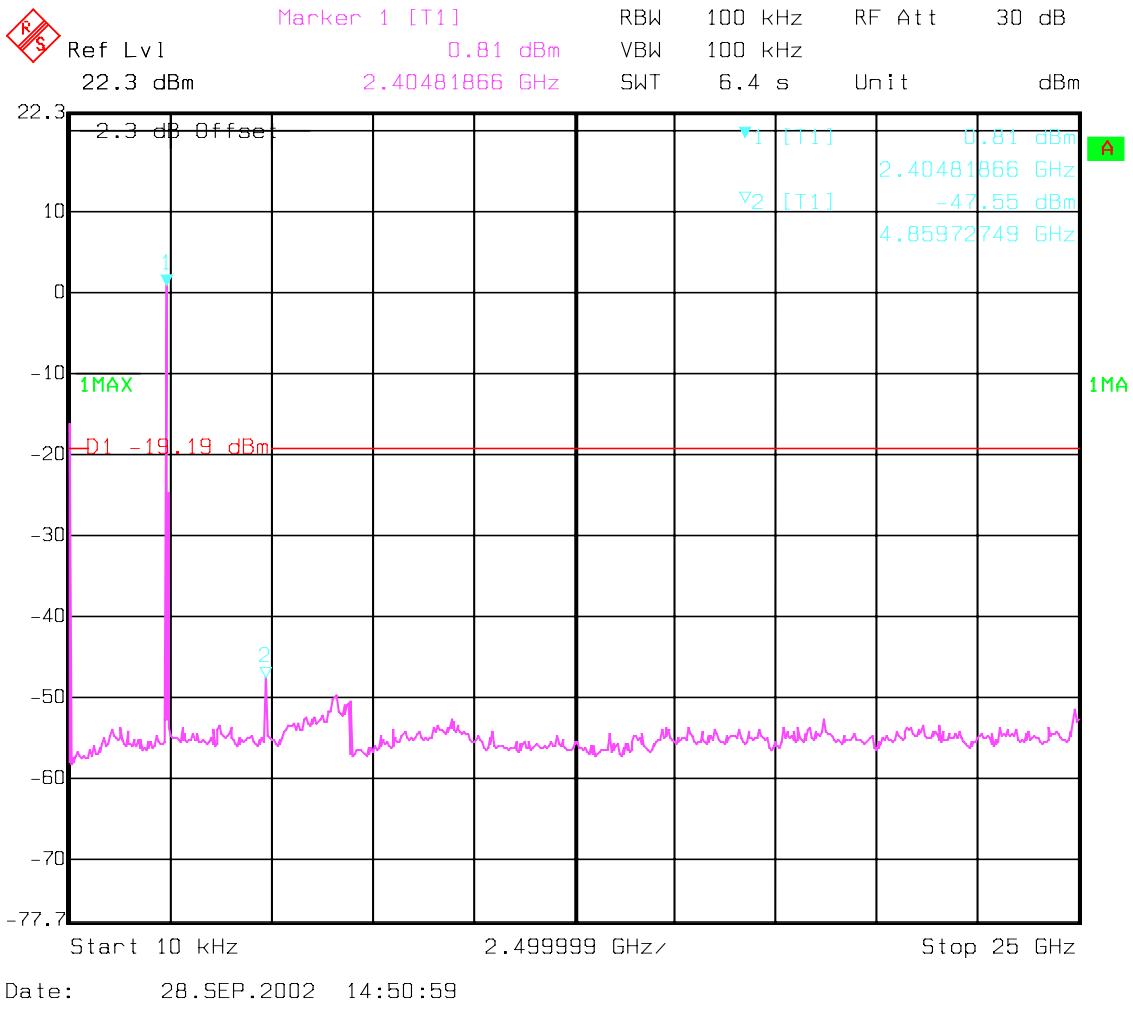
NOTE: The peak above the limit line is the carrier frequency.



EMISSION LIMITATIONS - Conducted (Transmitter) § 15.247 (c) (1)

Mid Channel(2442MHz): 10KHz - 25GHz

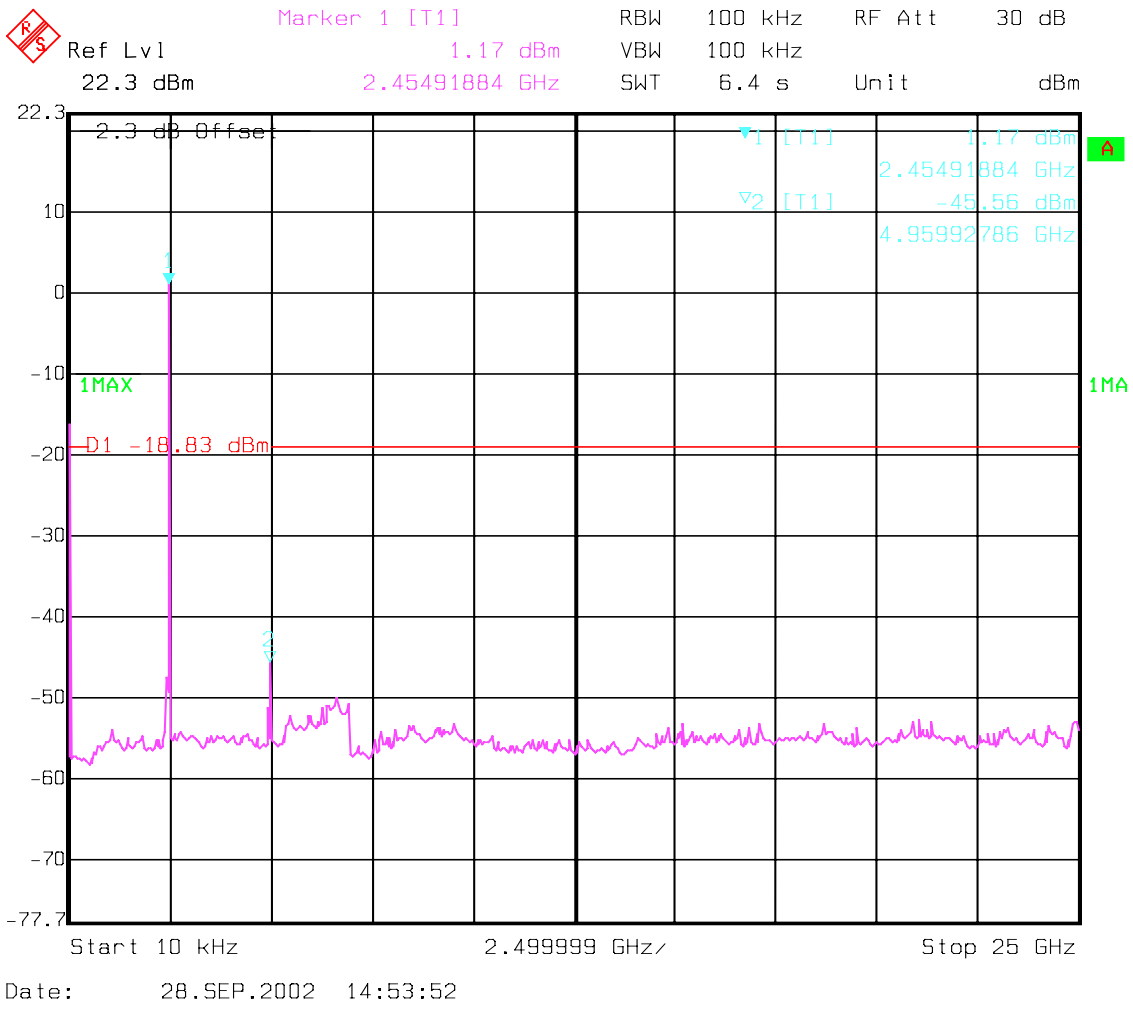
NOTE: The peak above the limit line is the carrier frequency.



EMISSION LIMITATIONS - Conducted (Transmitter) § 15.247 (c) (1)

Highest Channel(2472MHz): 10KHz - 25GHz

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



EMISSION LIMITATIONS **§ 15.247 (c) (1)**
Transmitter (Radiated)

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.

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)

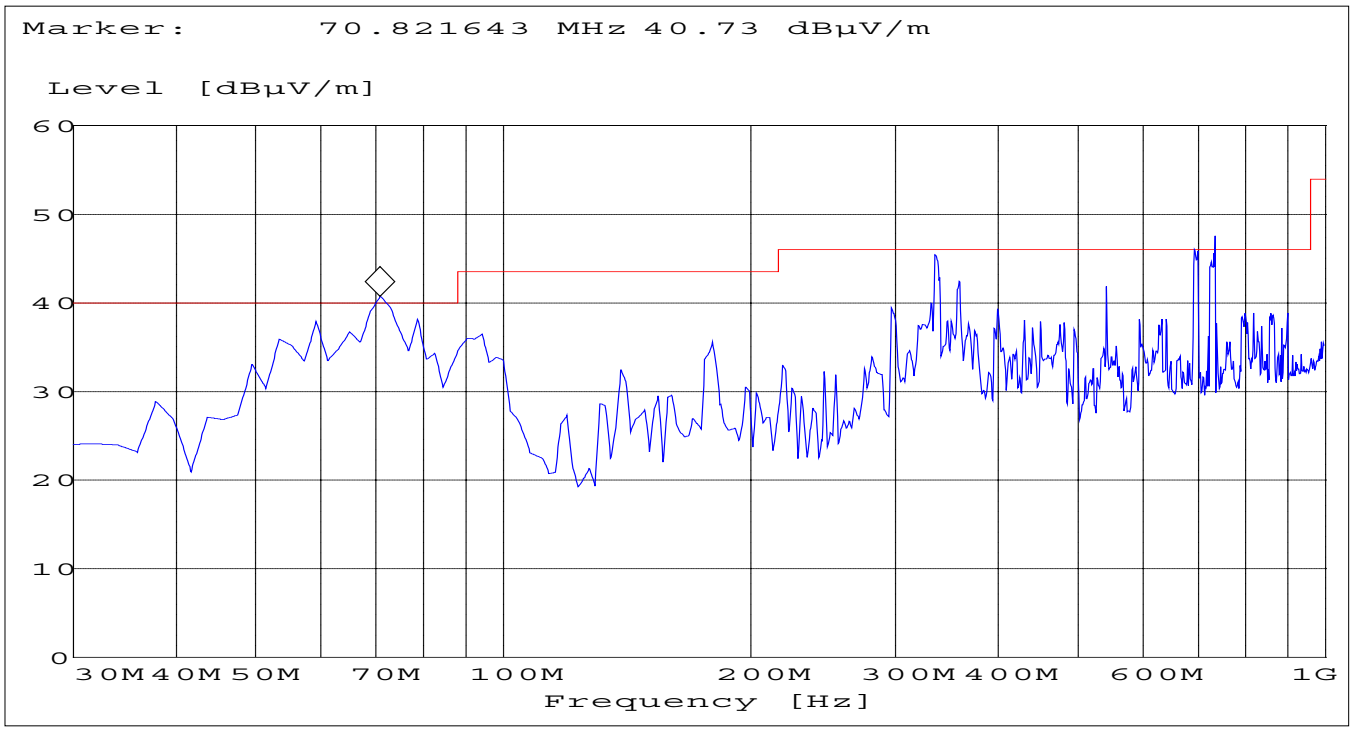
Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

Tx ch-Low 2412 MHz			Tx ch-Mid 2442 MHz			Tx ch-High 2472 MHz		
Freq.(MHz)	Level (dBµV/m)		Freq.(MHz)	Level (dBµV/m)		Freq.(MHz)	Level (dBµV/m)	
	Pk	QPk		Pk	QPk		Pk	QPk
70.82	40.73	35.93	59.15	38.46		49.43	36.98	
335.2	45.43	41.42	82.48	39.12		80.54	37.85	
692.86	46.02	42.98	692.86	45.15		692.86	44.13	
731.74	45.64	42.04	731.74	45.19		731.74	44.09	

EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel(2412MHz): 30MHz – 1GHz

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

NOTE: This plot shows peak measurements only, during Quasi-peak all emissions were found under the limit line. Please refer to page-37 for Quasi-peak data.

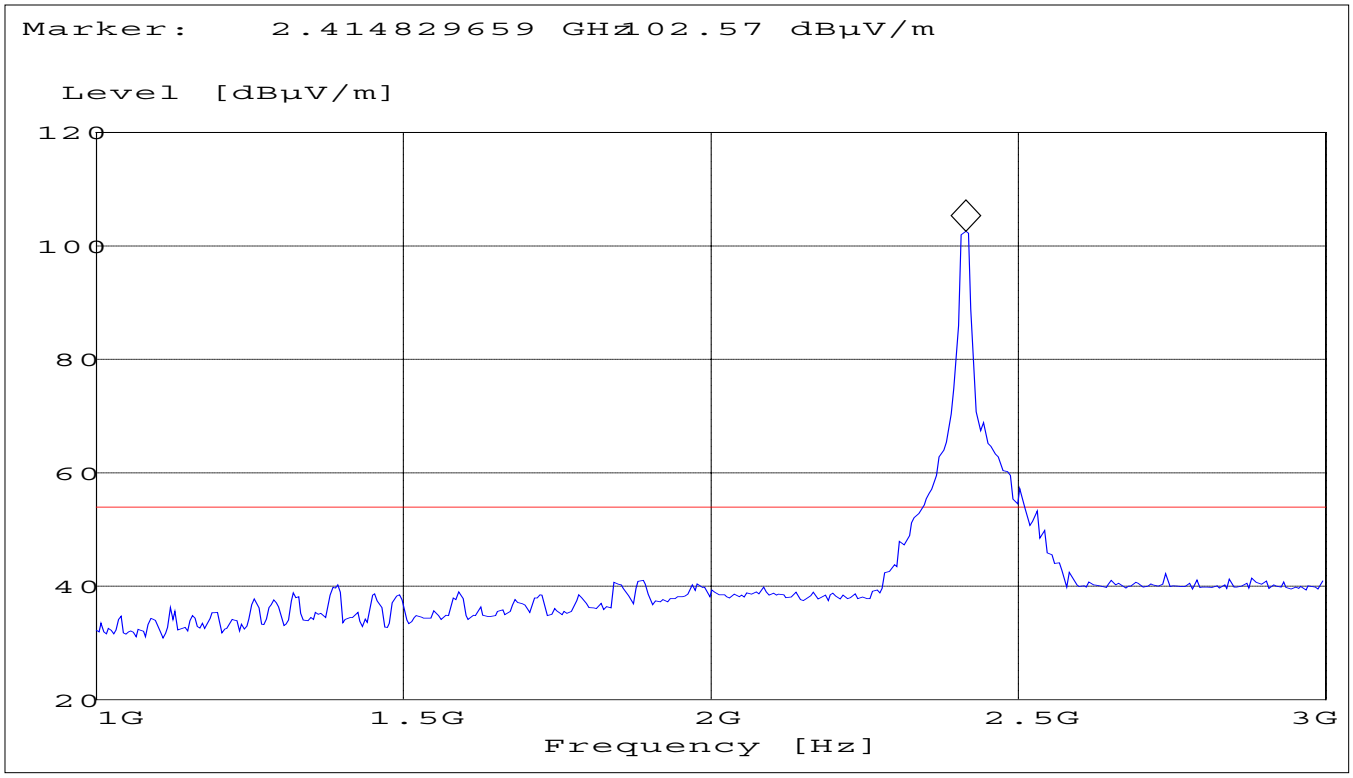


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel(2412MHz): 1GHz – 3GHz

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

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

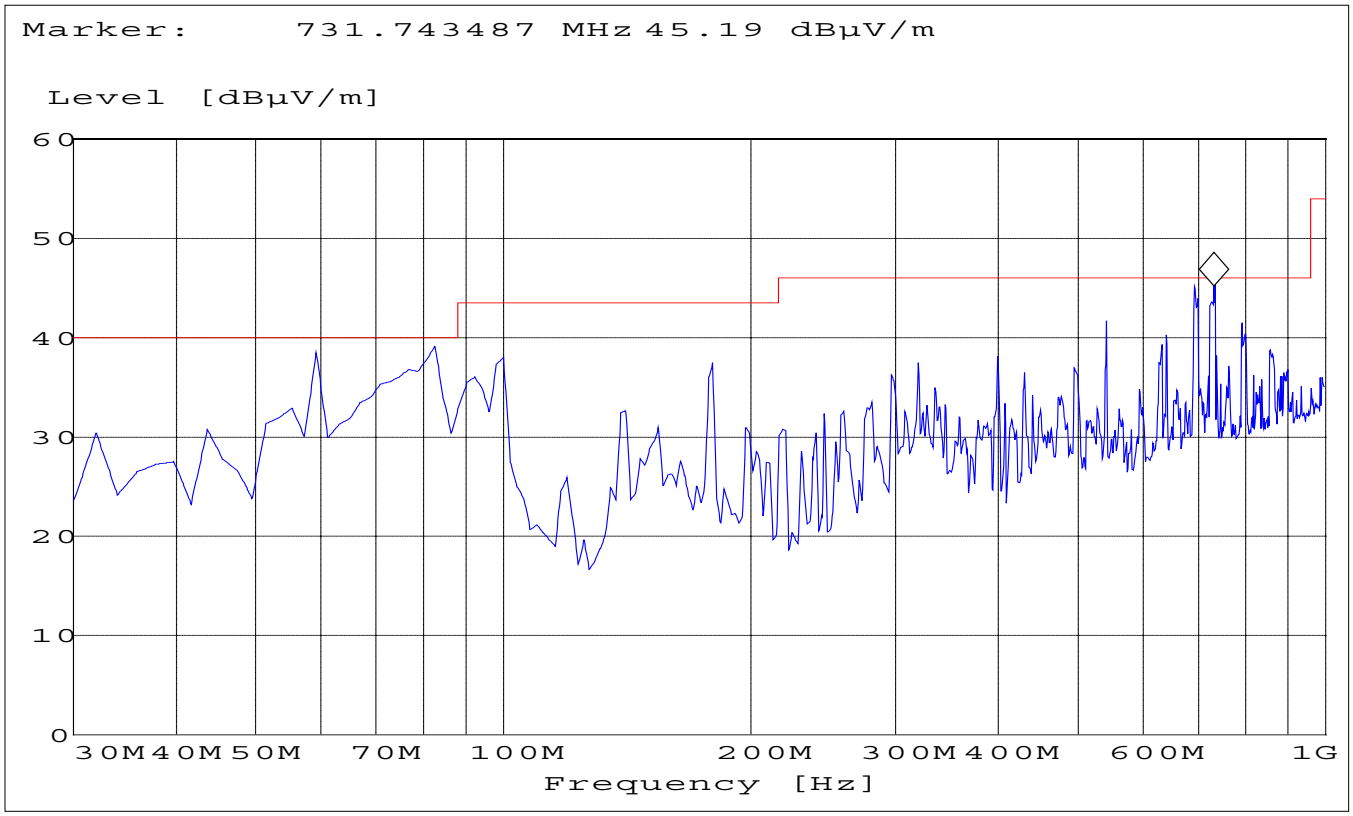
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Middle Channel(2442MHz): 30MHz – 1GHz

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

NOTE: This plot shows peak measurements

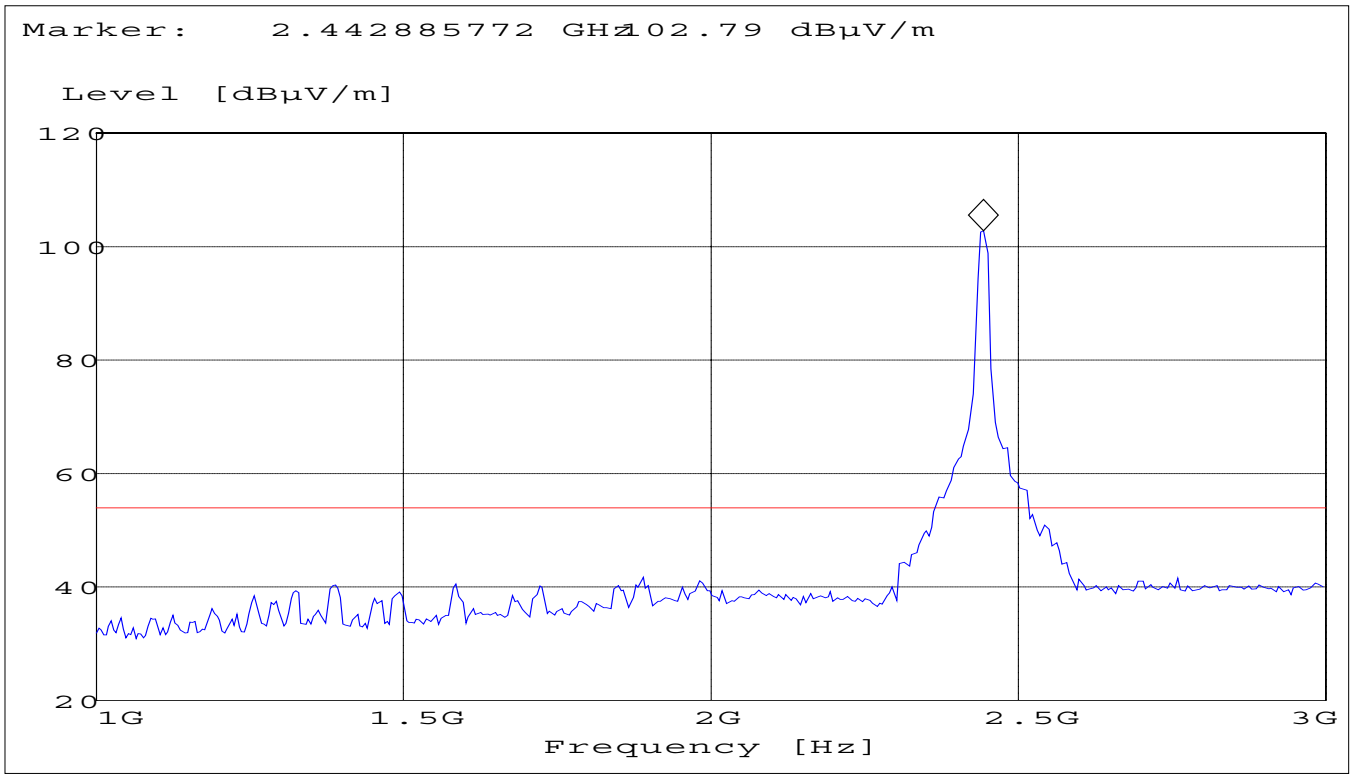


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Middle Channel(2442MHz): 1GHz – 3GHz

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

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

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

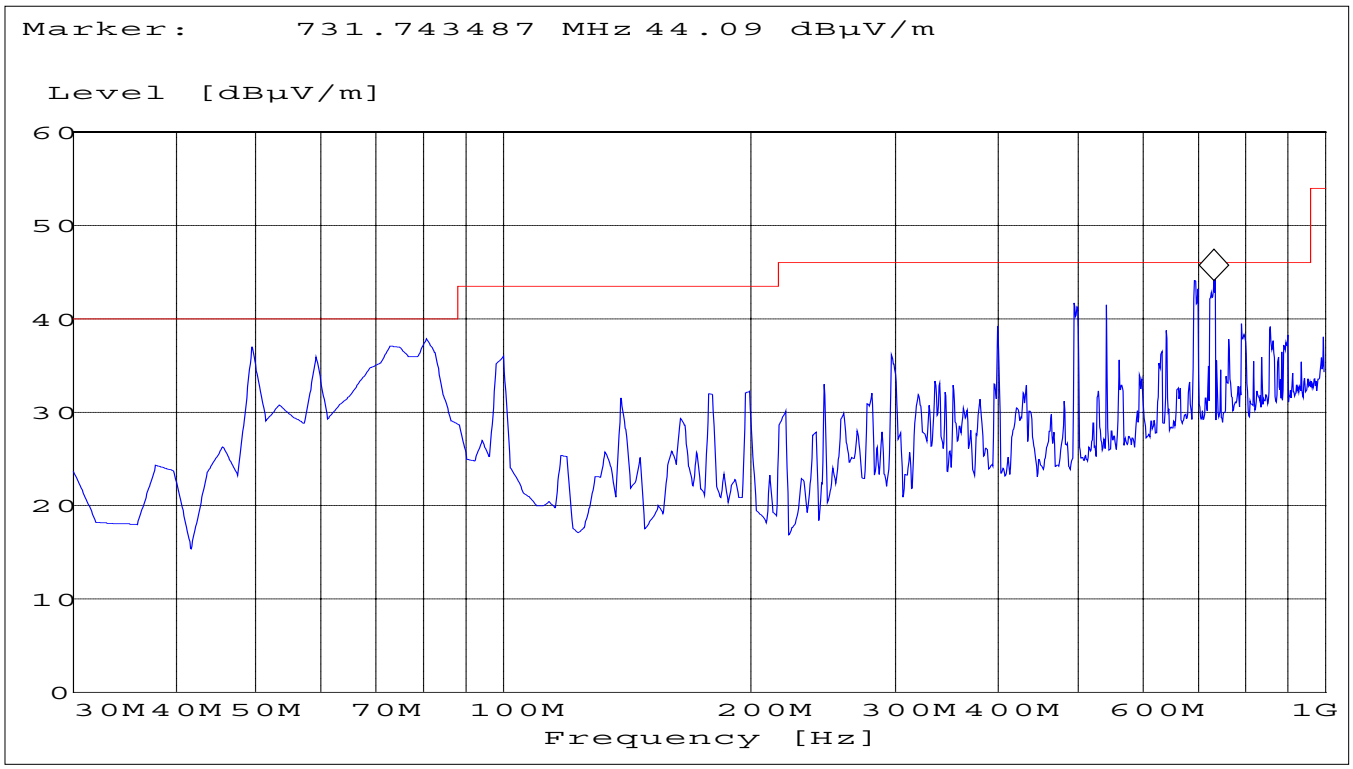


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)

Highest Channel(2472MHz): 30MHz – 1GHz

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

NOTE: This plot shows peak measurements

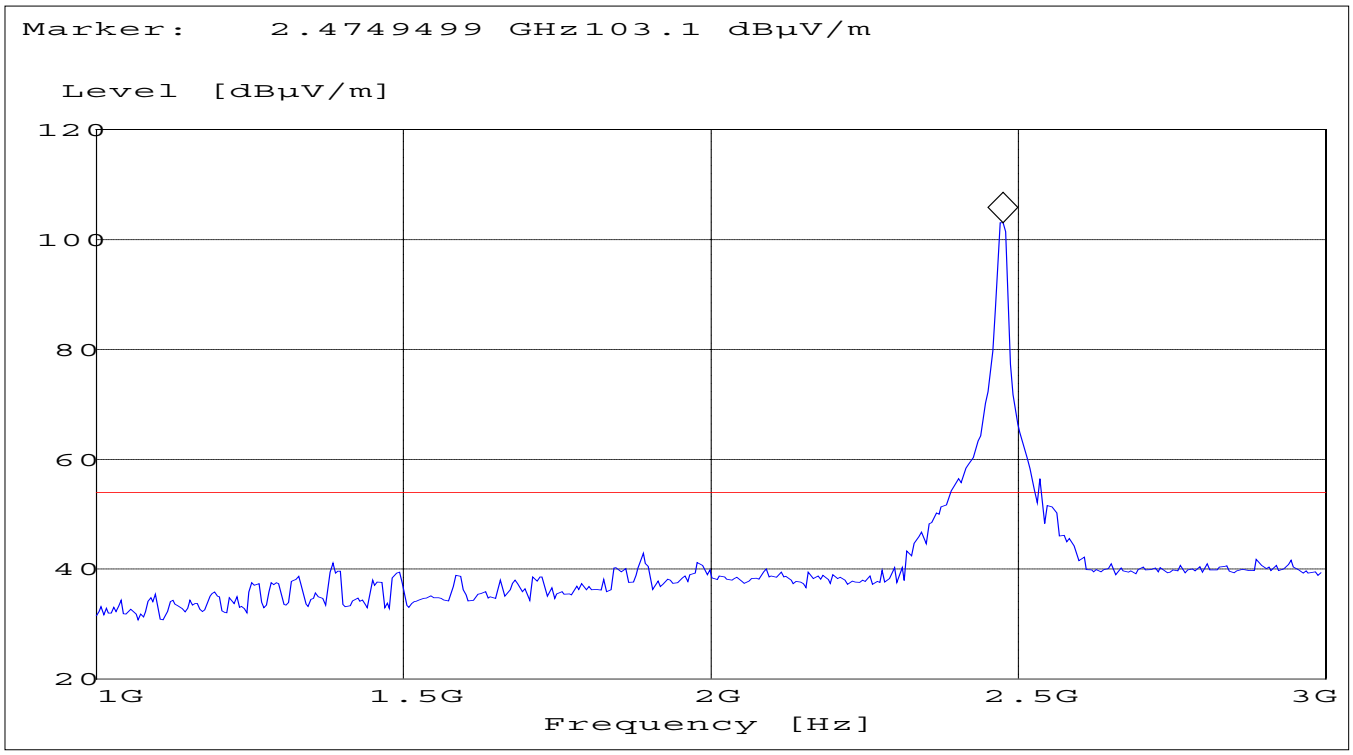


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel(2472MHz): 1GHz – 3GHz

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

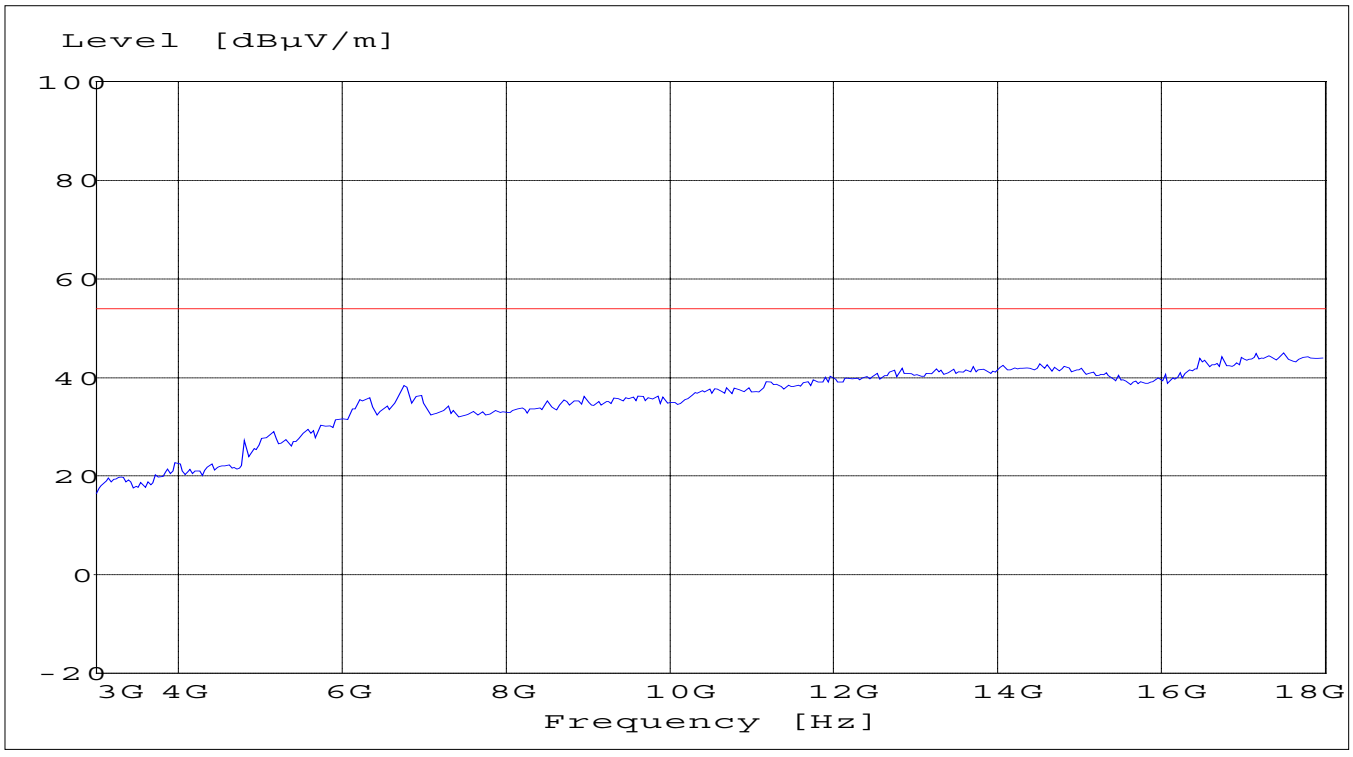
SWEEP TABLE: "BT Spuri hi 1-3G"
Short Description: Bluetooth Spurious 1-3GHz

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



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
3GHz – 18GHz
(This plot is valid for all three channels)

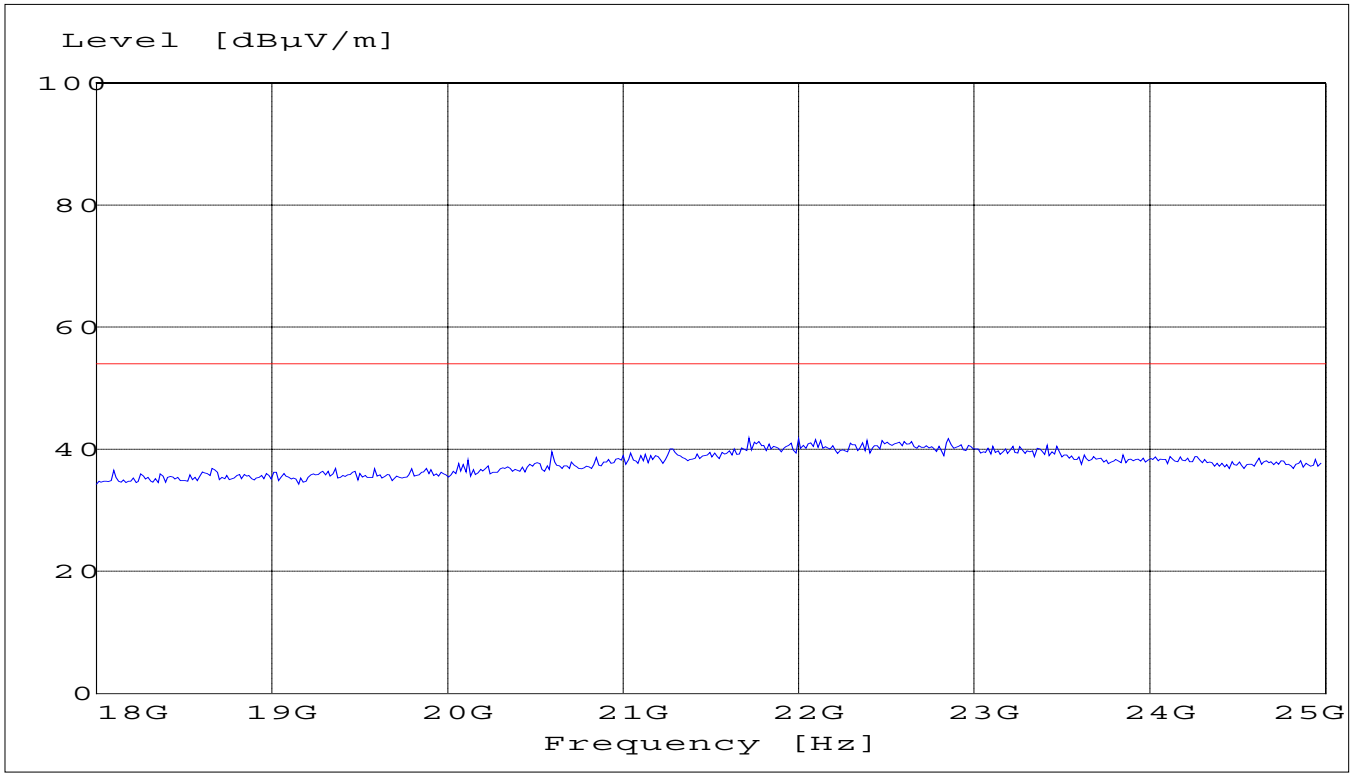
SWEEP TABLE:		"BT Spuri hi 3-18G"			
Short Description:		Bluetooth Spurious 3-18GHz			
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
3.0 GHz	18 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
18GHz – 25GHz
(This plot is valid for all three channels)

SWEEP TABLE: "BT Spuri hi 18-25G"
Short Description: Bluetooth Spurious 18-25GHz

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



CONDUCTED EMISSIONS § 15.107/207

Measured with AC/DC power adapter (3COM P/N: 61-0116-000)

SWEEP TABLE: "55022 cond"

Short Description: EN 55022 for 150KHz-30MHz

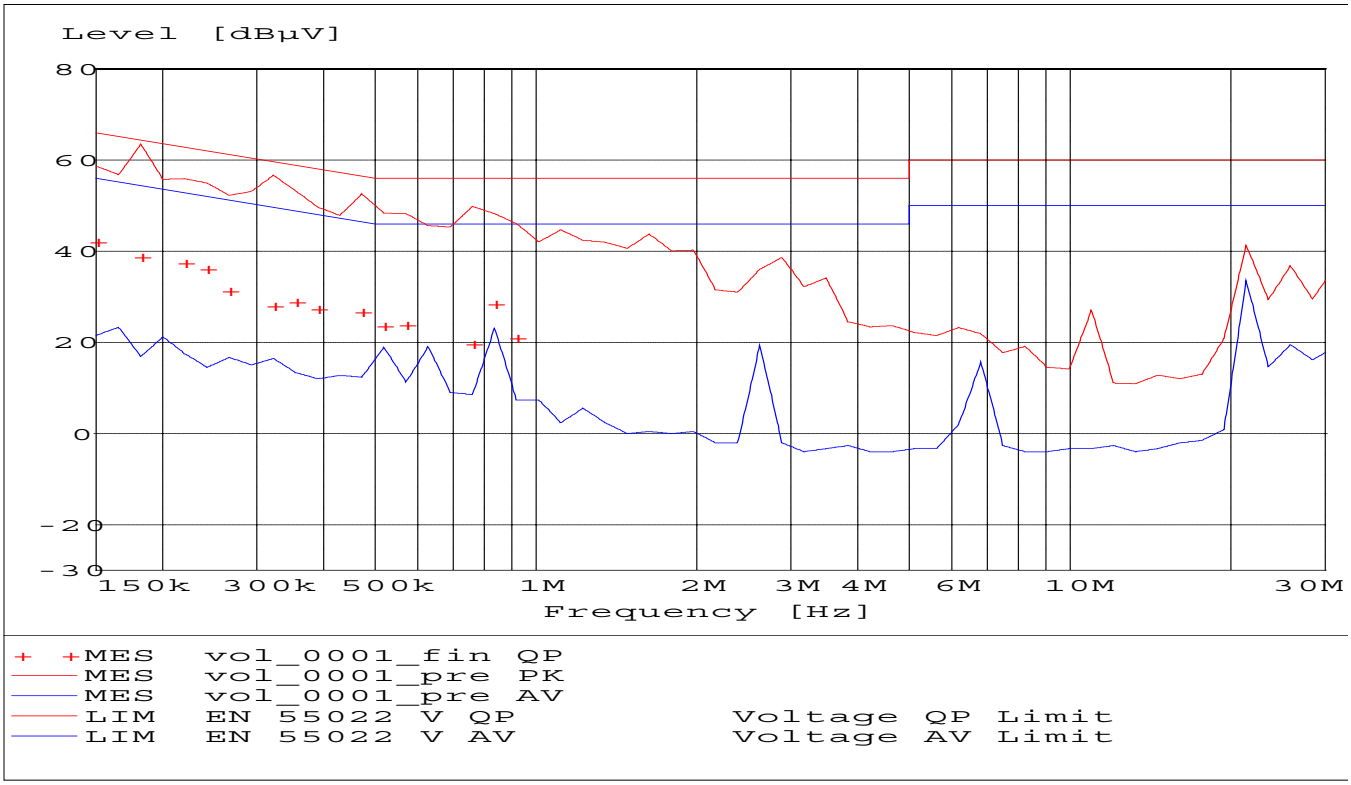
Start Frequency	Stop Frequency	Detector	Meas Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	MaxPeak	Coupled	10 kHz	None

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"

9/28/02 1:47PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	42.20	0.0	66	23.8	1	---
0.181500	39.00	0.0	64	25.4	1	---
0.219615	37.50	0.0	63	25.4	1	---
0.241577	36.40	0.0	62	25.7	1	---
0.265734	31.40	0.0	61	29.8	1	---
0.321538	28.10	0.0	60	31.5	1	---
0.353692	29.10	0.0	59	29.8	1	---
0.389061	27.60	0.0	58	30.5	2	---
0.470764	26.90	0.0	57	29.6	1	---
0.517841	23.80	0.0	56	32.2	1	---
0.569625	24.00	0.0	56	32.0	1	---
0.758171	19.90	0.0	56	36.1	1	---
0.833988	28.60	0.0	56	27.4	2	---
0.917386	21.20	0.0	56	34.8	1	---

RECEIVER SPURIOUS RADIATION § 15.209

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 forthe 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.

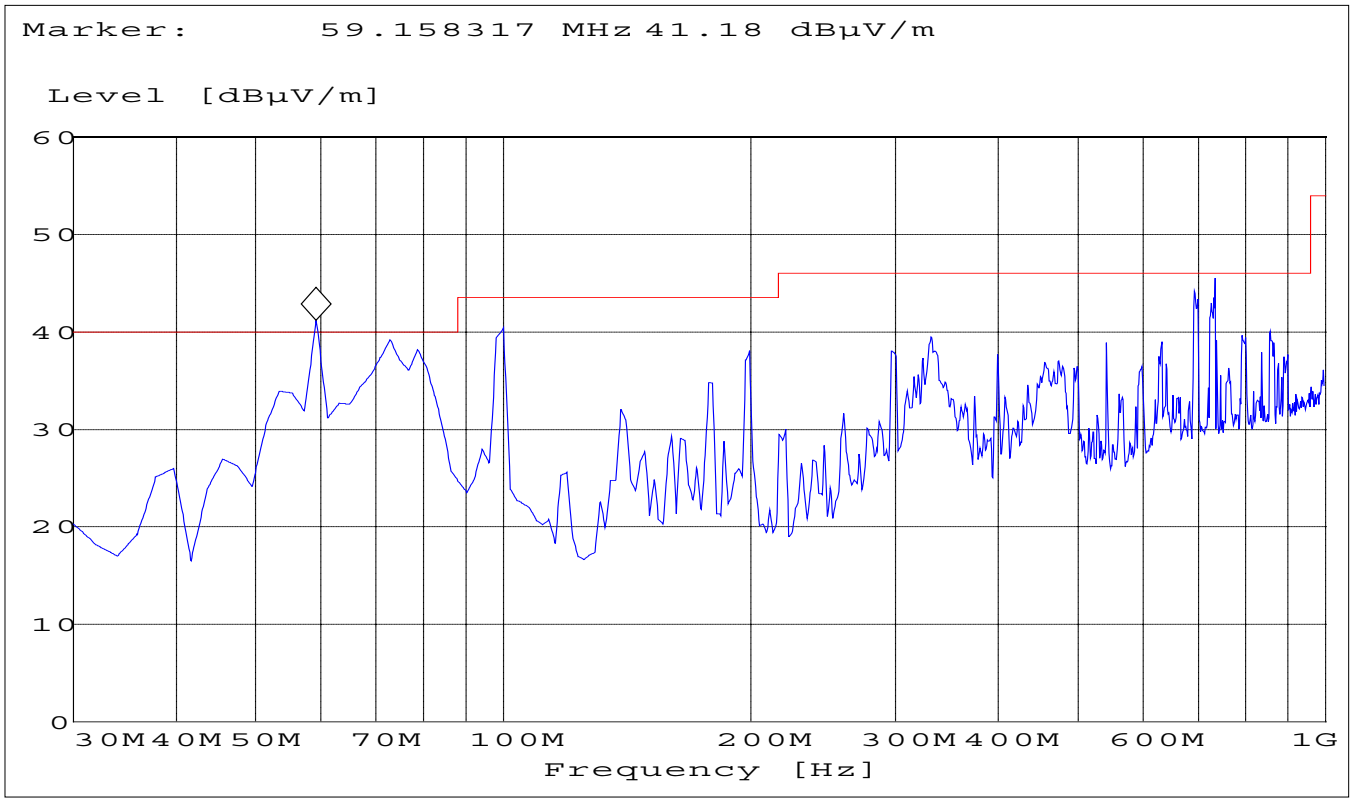
RECEIVER SPURIOUS RADIATION § 15.209

30MHz – 1GHz

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

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

Freq. (MHz)	Level (dBµV/m) Peak	Level (dBµV/m) Quasi Peak
59.15	41.18	36.28
99.98	40.41	--
692.86	44.13	--
731.74	43.49	--

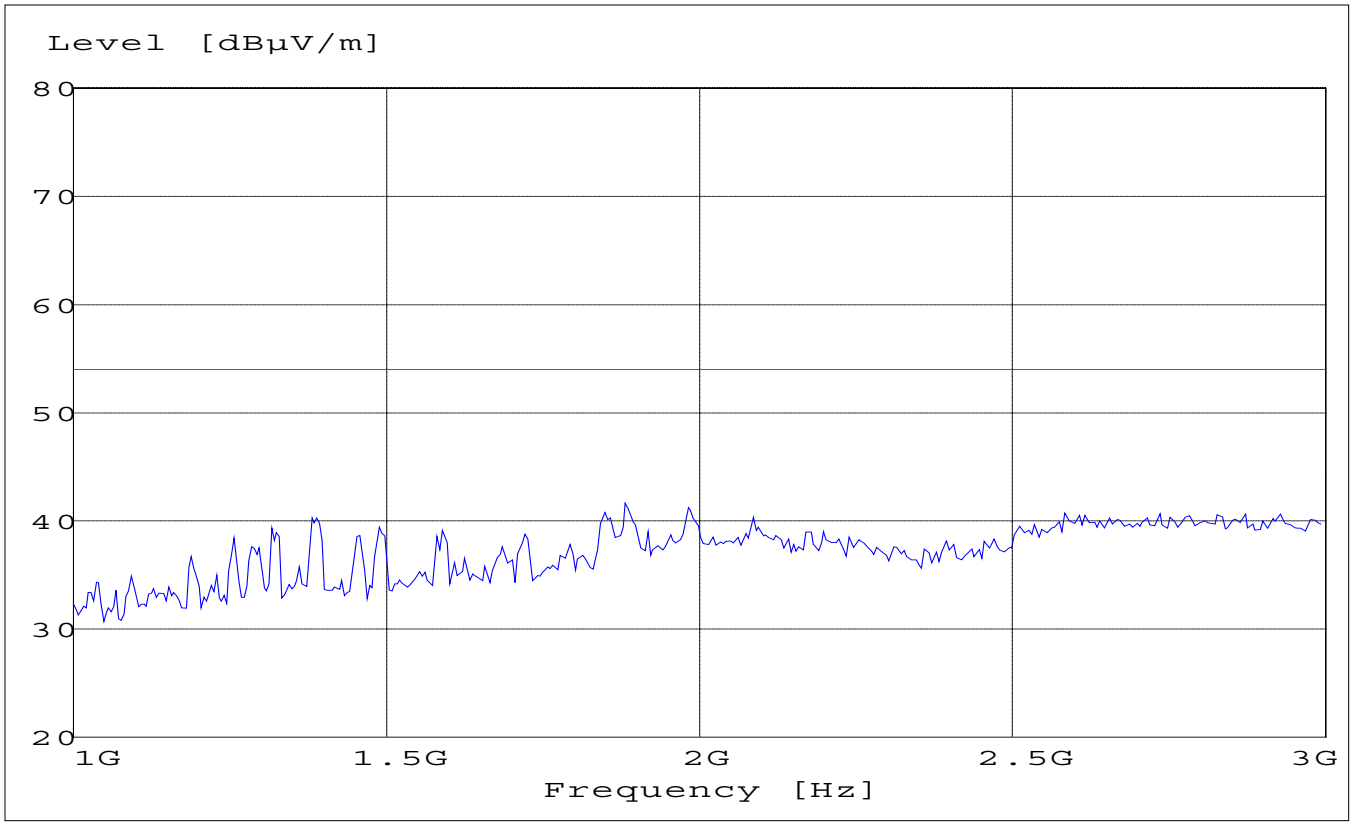


RECEIVER SPURIOUS RADIATION § 15.209

1GHz – 3GHz

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

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

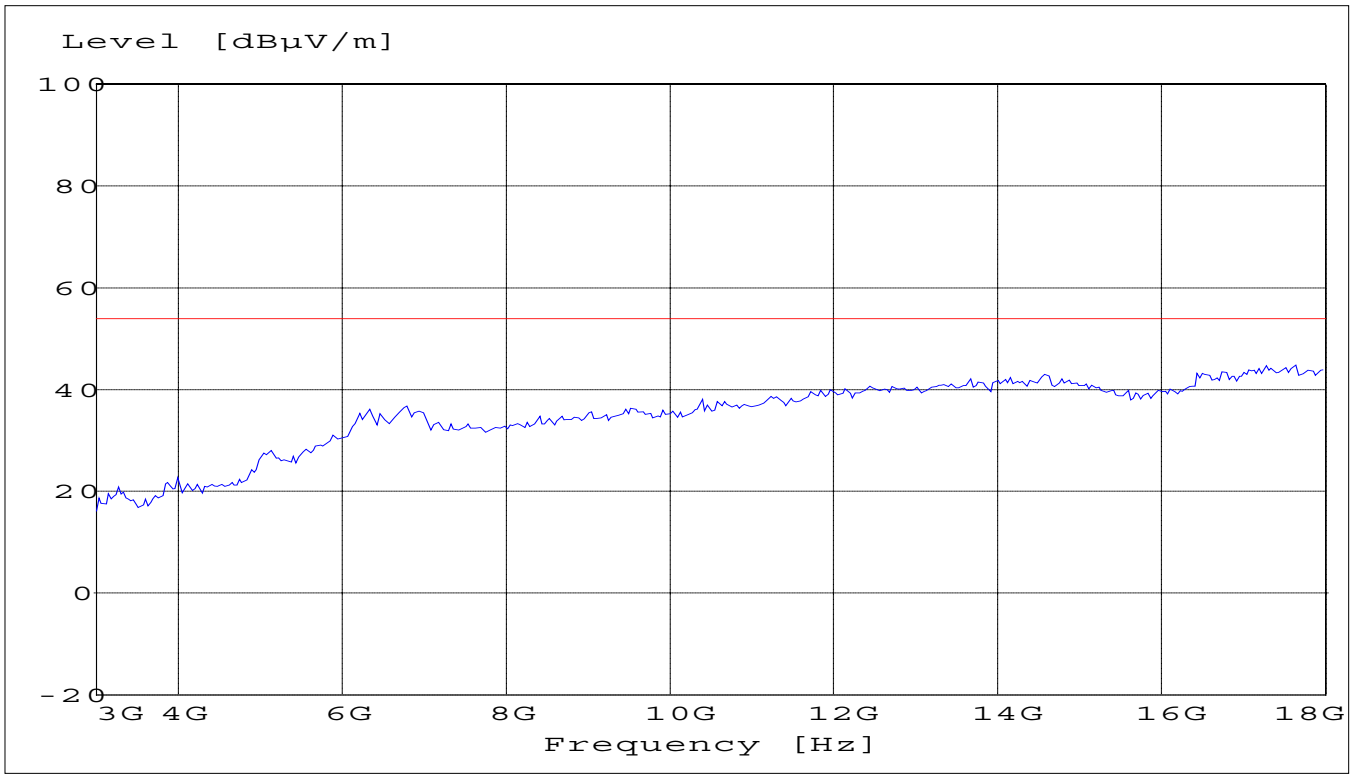


RECEIVER SPURIOUS RADIATION § 15.209

3GHz – 18GHz

SWEEP TABLE: "BT Spuri hi 3-18G"
Short Description: Bluetooth Spurious 3-18GHz

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

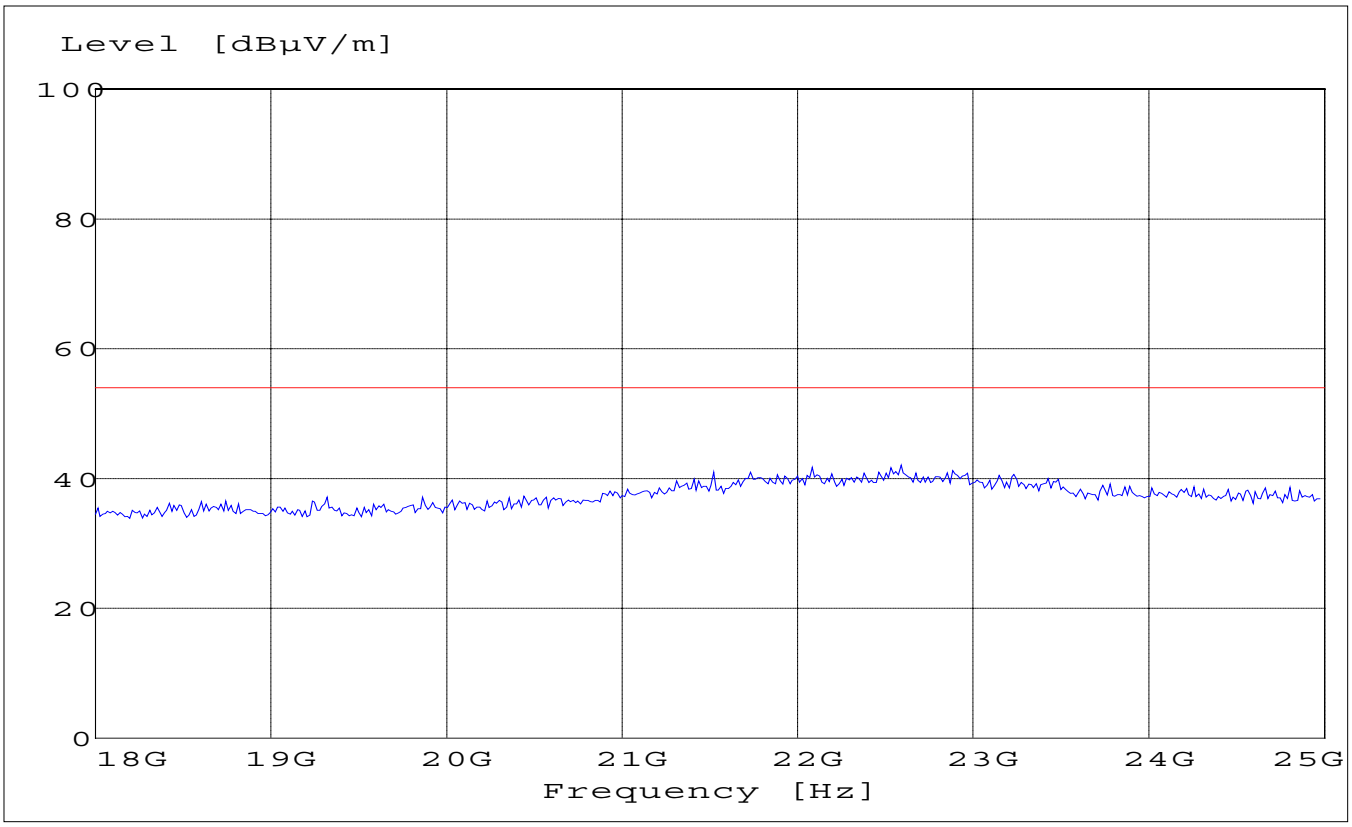


RECEIVER SPURIOUS RADIATION § 15.209

18GHz – 25GHz

SWEEP TABLE: "BT Spuri hi 18-25G"
Short Description: Bluetooth Spurious 18-25GHz

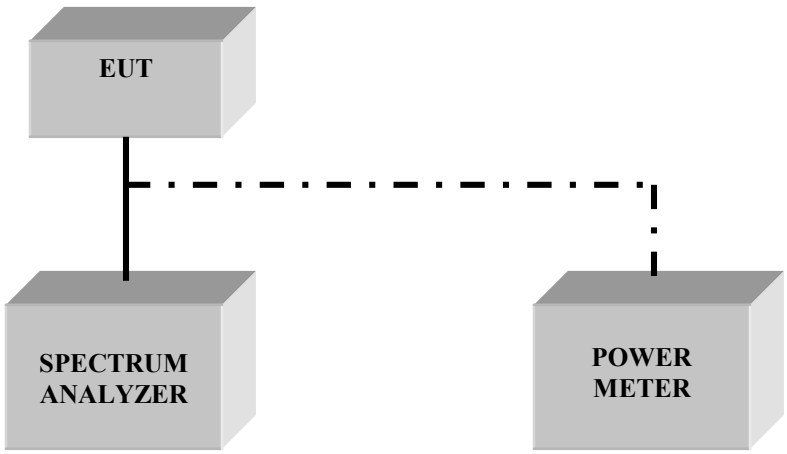
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
18 GHz	25 GHz	MaxPeak	Coupled	1 MHz	#141 horn (dBi)



TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Type	Manufacturer	Serial No.
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 Amlifier	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	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807
12	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008

BLOCK DIAGRAMS
Conducted Testing



Radiated Testing