CETECOM Inc.

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

Test report no.: EMC_325_FCC15.247_2002
FCC Part 15.247 for FHSS Systems / CANADA RSS-210
(HDW-2)

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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: Harpreet Sidhu

1.2 Testing laboratory

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E-mail: lothar.schmidt@cetecomusa.com
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1.3 Details of applicant

Name	**:**	**Plantronics**
Street	**:**	**345 Encinal St.**
City / Zip Code	**:**	**Santa Cruz, 95060**
Country	**:**	**USA**
Contact	**:**	**Sidora Sin**
Telephone	**:**	**+1 831 458 4476**
Tele-fax	**:**	**+1 831 429 5731**
e-mail	**:**	**sid.sin@plantronics.com**

1.4 Application details

Date of receipt of application	:	2002-08-01
Date of receipt test item	:	2002-08-06
Date of test	:	2002-08-06/07/08

1.5 Test item

Manufacturer	:	Applicant
Marketing Name	:	HDW-2
Model No.	:	HDW-2
Description	:	Bluetooth Headset
FCC-ID	:	AL8-HDW-2

Additional information

Frequency	:	2402MHz – 2480MHz
Type of modulation	:	GFSK
Number of channels	:	79
Antenna	:	Integral
Power supply	:	2.5VDC, Battery and AC adapter
Output power	:	-4.4dBm(0.363mW)
Extreme vol. Limits	:	2.0VDC – 3.0VDC
Extreme temp. Tolerance	:	0 C – 50 C

1.6 Test standards: FCC Part 15 §15.247 (DA00-705) / 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
2002-09-20	EMC & Radio	Lothar Schmidt (Manager)	

Responsible for test report and project leader:

Date	Section	Name	Signature
2002-09-20	EMC & Radio	Harpreet Sidhu (EMC Engineer)	

2.2 Test report

TEST REPORT

Test report no. : EMC_325_FCC15.247_2002
(HDW-2)

TEST REPORT REFERENCE

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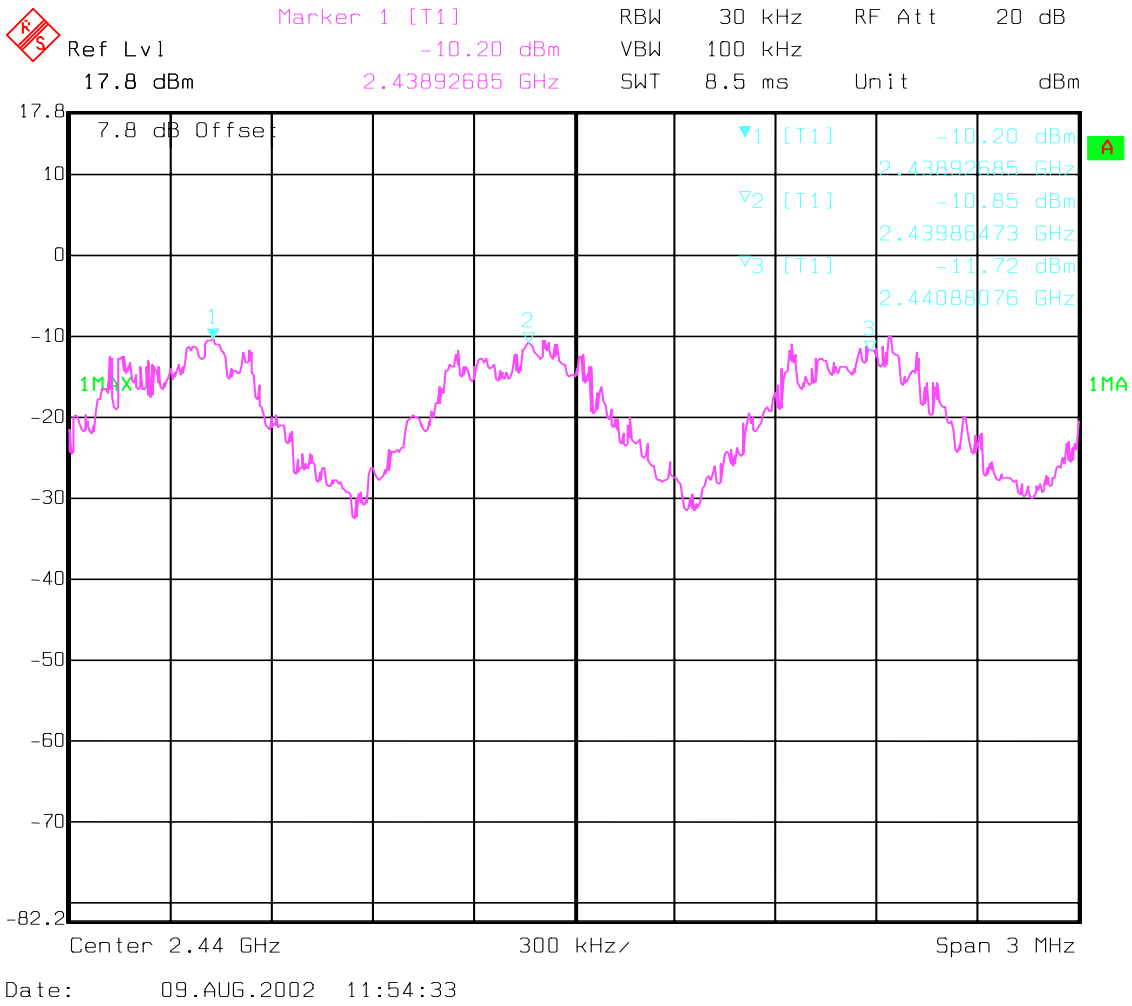
ANTENNA GAIN **§ 15.204**

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
Conducted Power	-11.25dBm	-9.19dBm	-6.03dBm
Raidated Power (EIRP)	-6.82dBm	-6.75dBm	-4.40dBm
Antenna Gain	+4.43dBi	+2.44dBi	+1.63dBi

The calculated antenna gain is between +4.43dBi and +1.63dBi.

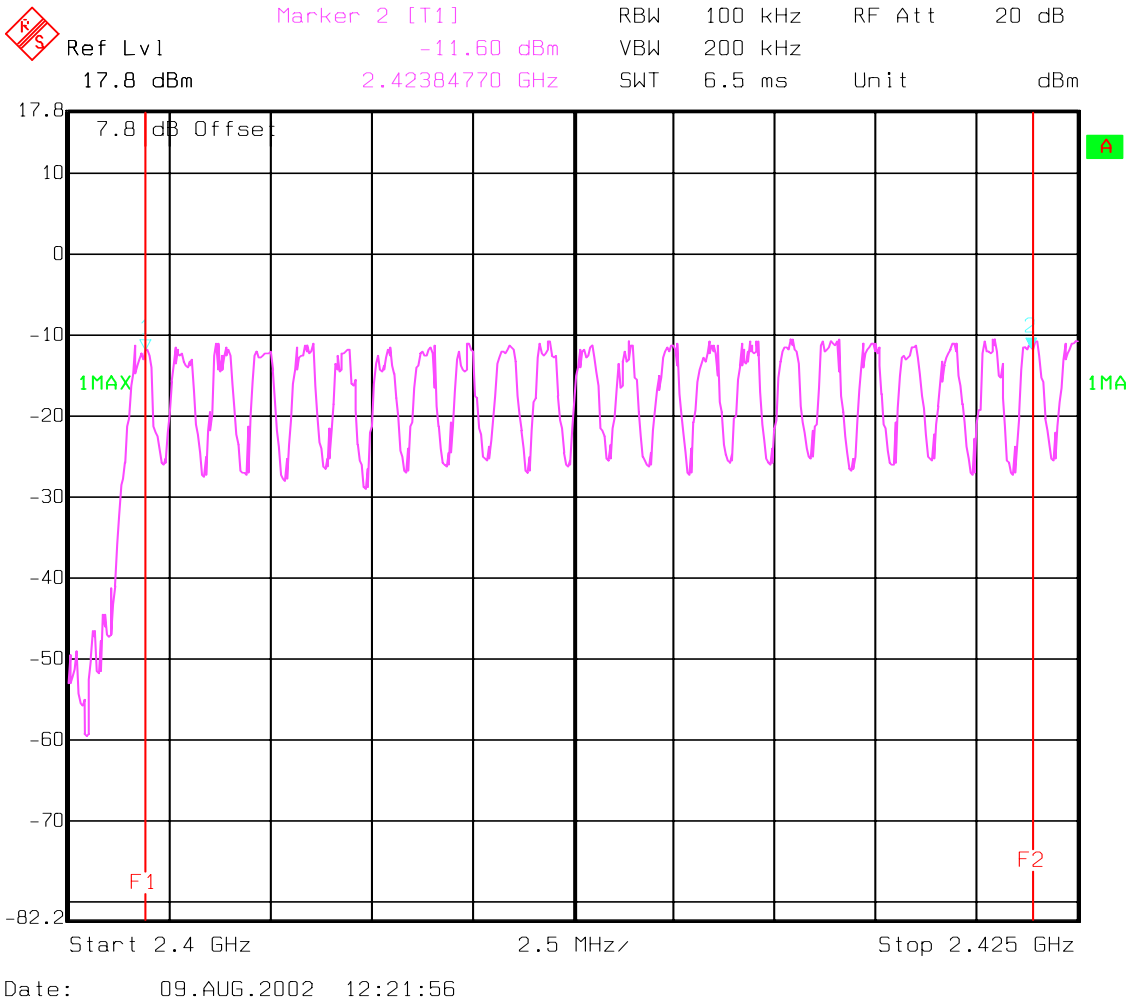
CARRIER FREQUENCY SEPERATION §15.247(a)



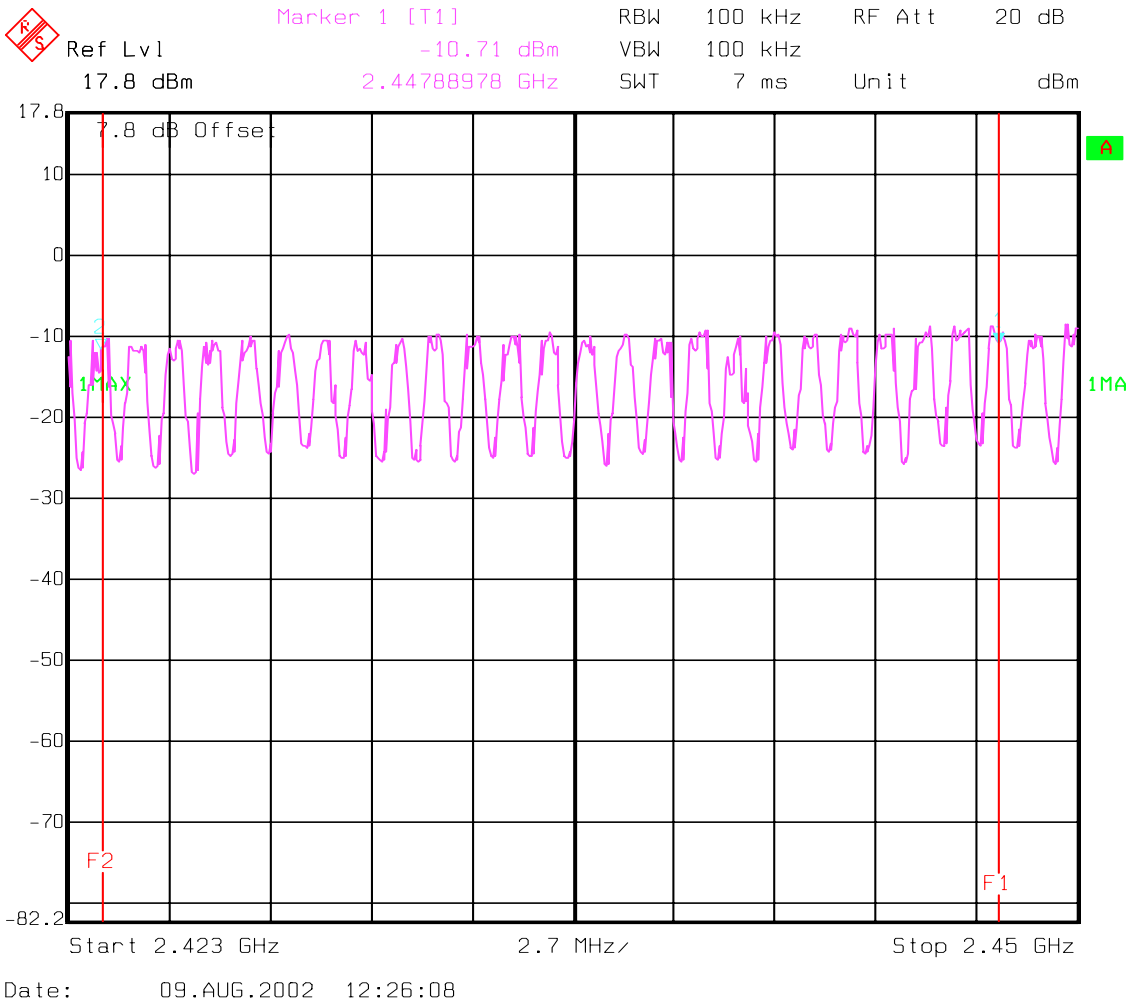
NUMBER OF HOPPING CHANNELS §15.247(a)

The number of hopping channels is 79 (see next 4 plots)
The right red line corresponds to the left red line from the next plot.

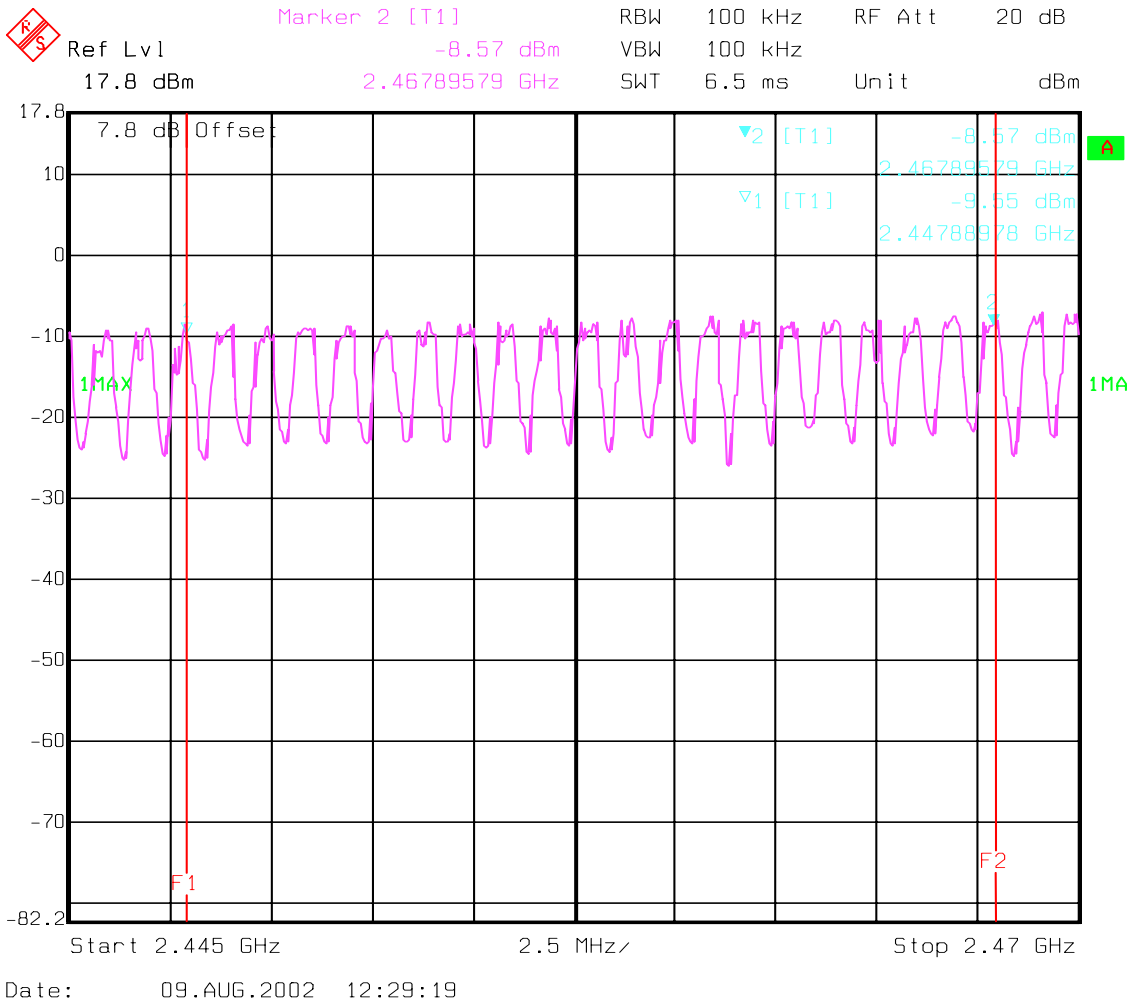
Plot 1: Total 23



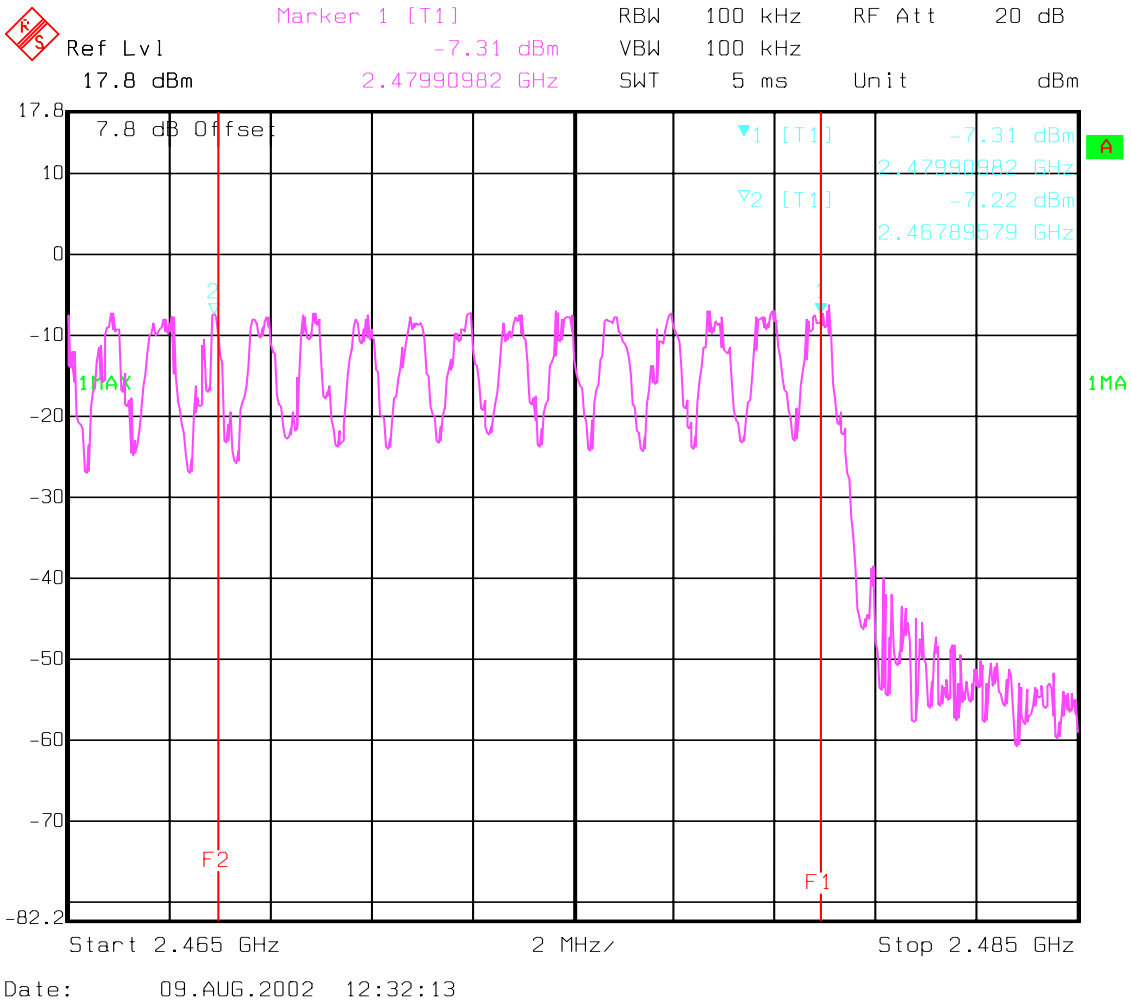
Plot 2: Total 24



Plot 3: Total 20



Plot 4: Total 12

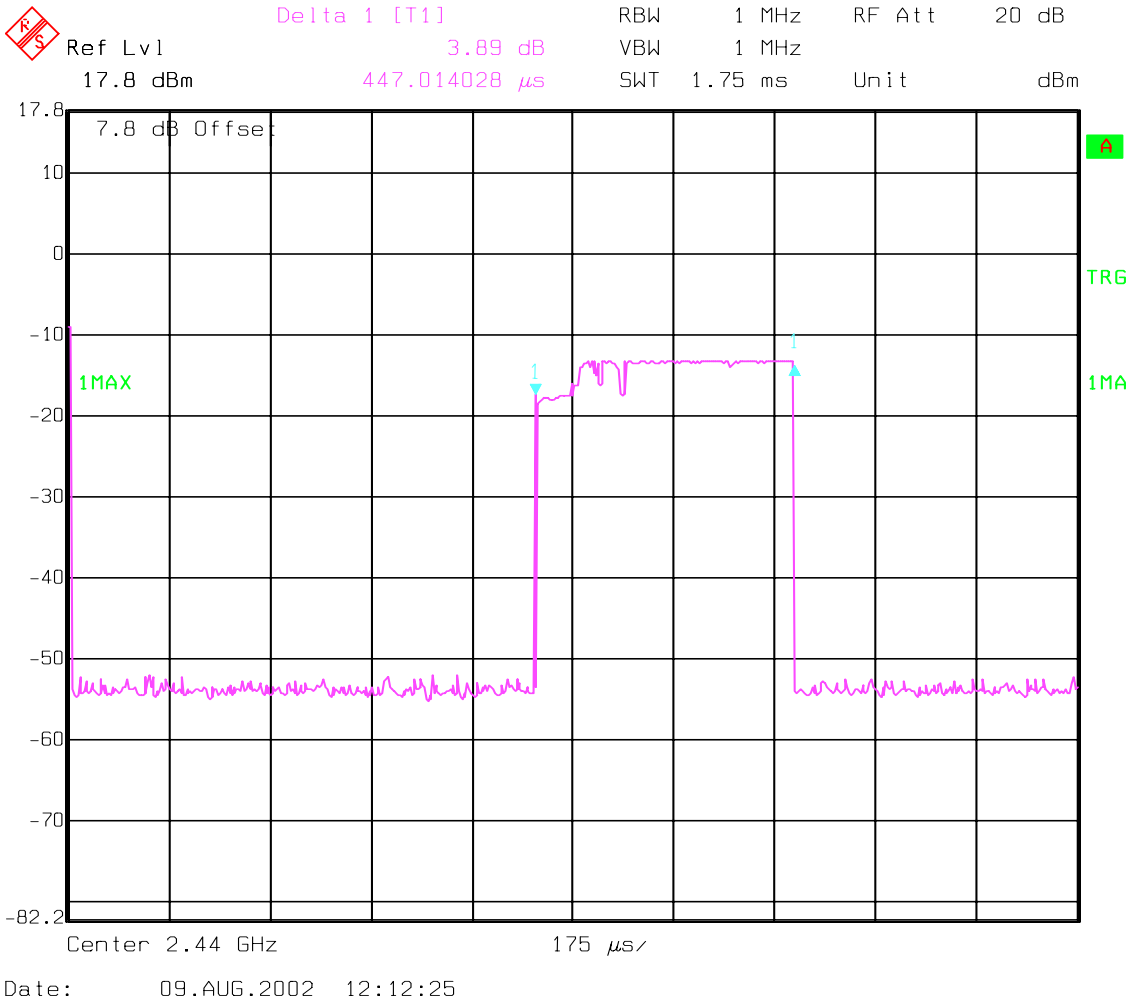


TIME OF OCCUPANCY (DWELL TIME) §15.247(a)

DH1 – Packet

The system makes worst case 1600 hops per second or 1 time slot has a length of 625µs with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 79 channels. So you have each channel 10.13 times per second and so for 30 seconds you have 303.9 times of appearence .
Each Tx-time per appearence is 447µs.
So we have 303.9 * 447µs = 135.84ms per 30 seconds.

Note: The EUT supports DH1 type packets only.



SPECTRUM BANDWIDTH OF FHSS SYSTEM §15.247(a)
20 dB bandwidth

TEST CONDITIONS		20 dB BANDWIDTH (kHz)		
Frequency (MHz)		2402	2440	2480
T_{nom}(23)°C	V_{nom}(2.5)VDC	825.65	825.65	829.66

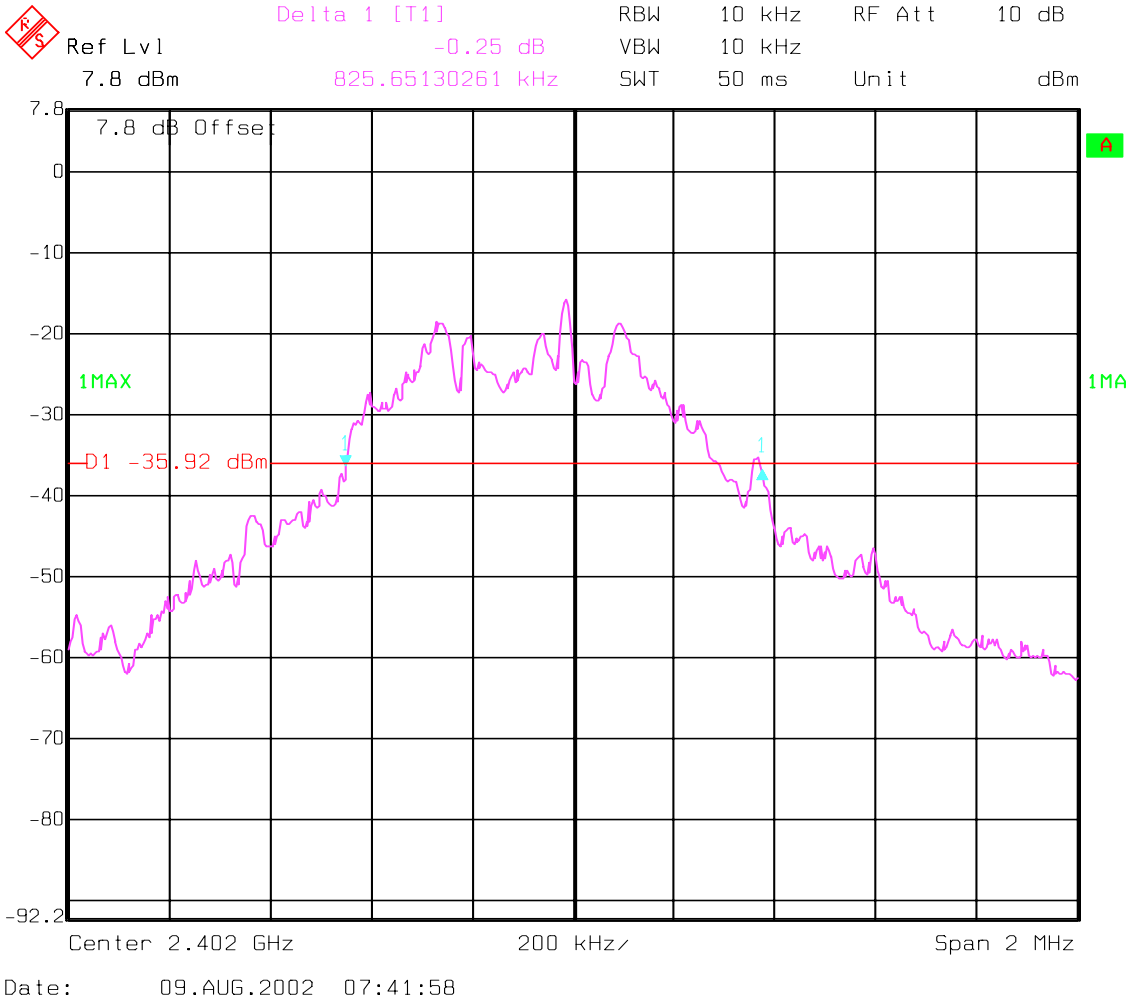
RBW / VBW as provided in the "Measurement Guidelines'' (DA 00-705, March 30, 2000)

LIMIT **SUBCLAUSE §15.247(a) (1)**

The maximum 20dB bandwith shall be at maximum 1000 KHz

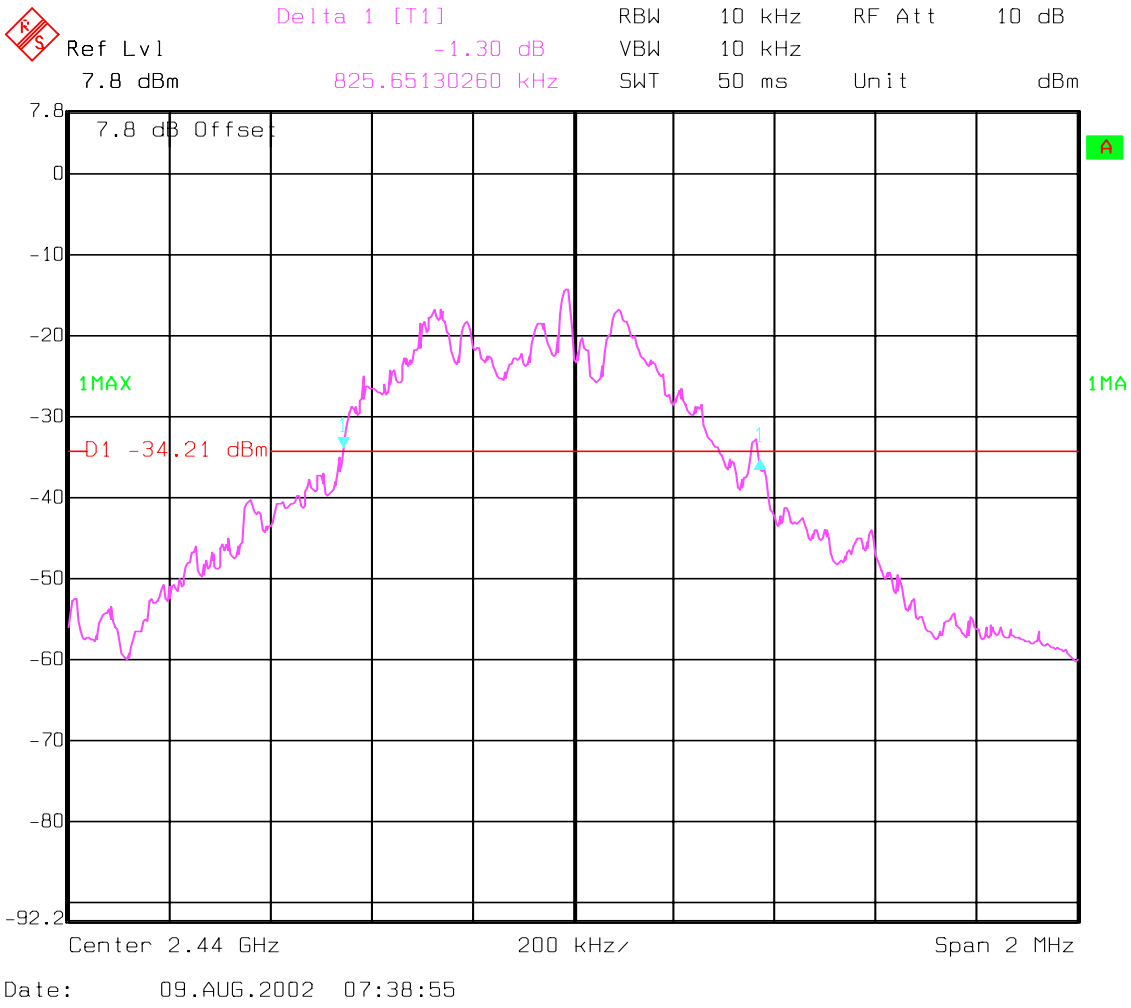
SPECTRUM BANDWIDTH OF FHSS SYSTEM **§15.247(a)**
20 dB bandwidth

Lowest Channel: 2402MHz



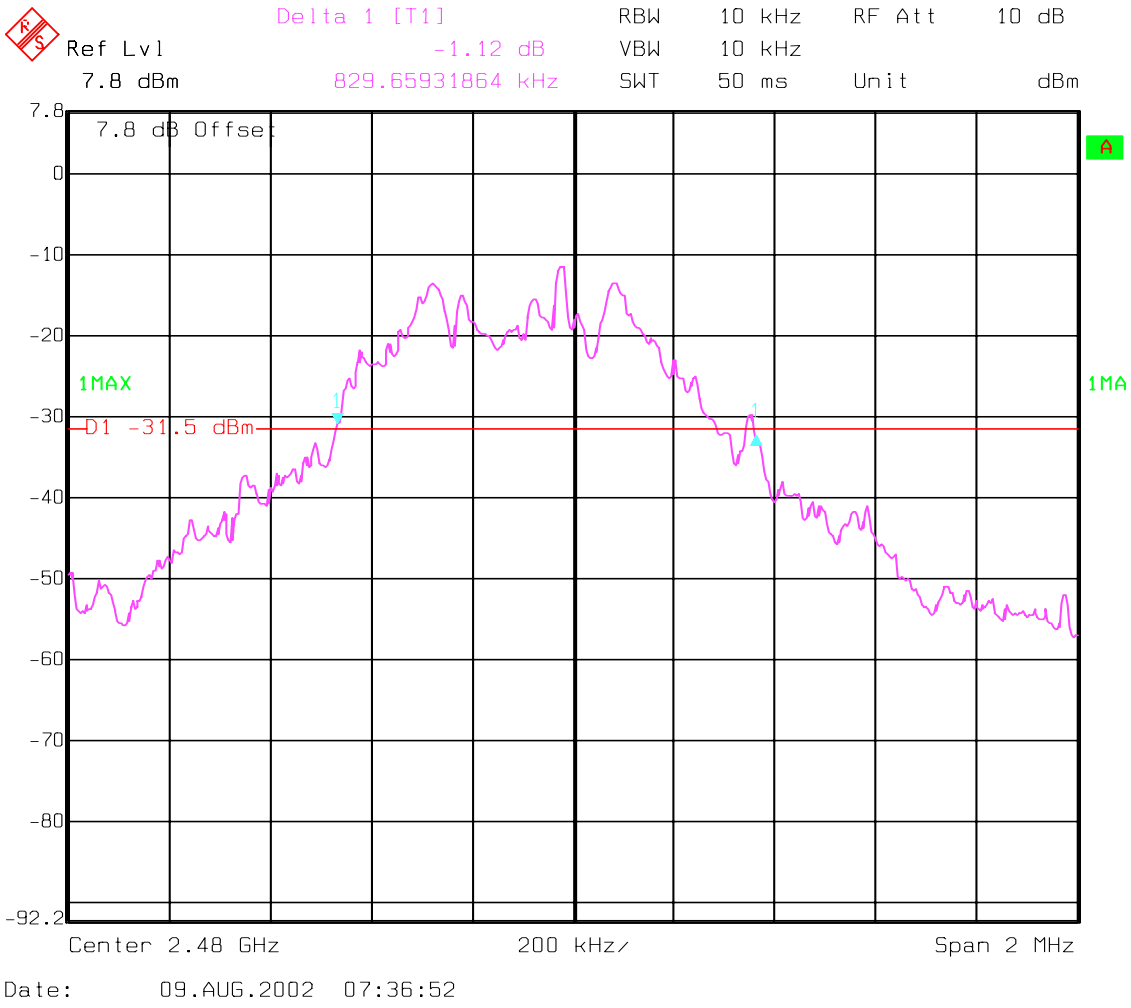
SPECTRUM BANDWIDTH OF FHSS SYSTEM §15.247(a)
20 dB bandwidth

Mid Channel: 2440MHz



SPECTRUM BANDWIDTH OF FHSS SYSTEM §15.247(a)
20 dB bandwidth

Highest Channel: 2480MHz



POWER SPECTRAL DENSITY §15.247 (d)

TEST CONDITIONS		POWER SPECTRAL DENSITY (dBm)		
Frequency (MHz)		2402	2440	2480
T_{nom}(23)°C	V_{nom}(2.5)VDC	-26.32	-24.15	-21.07

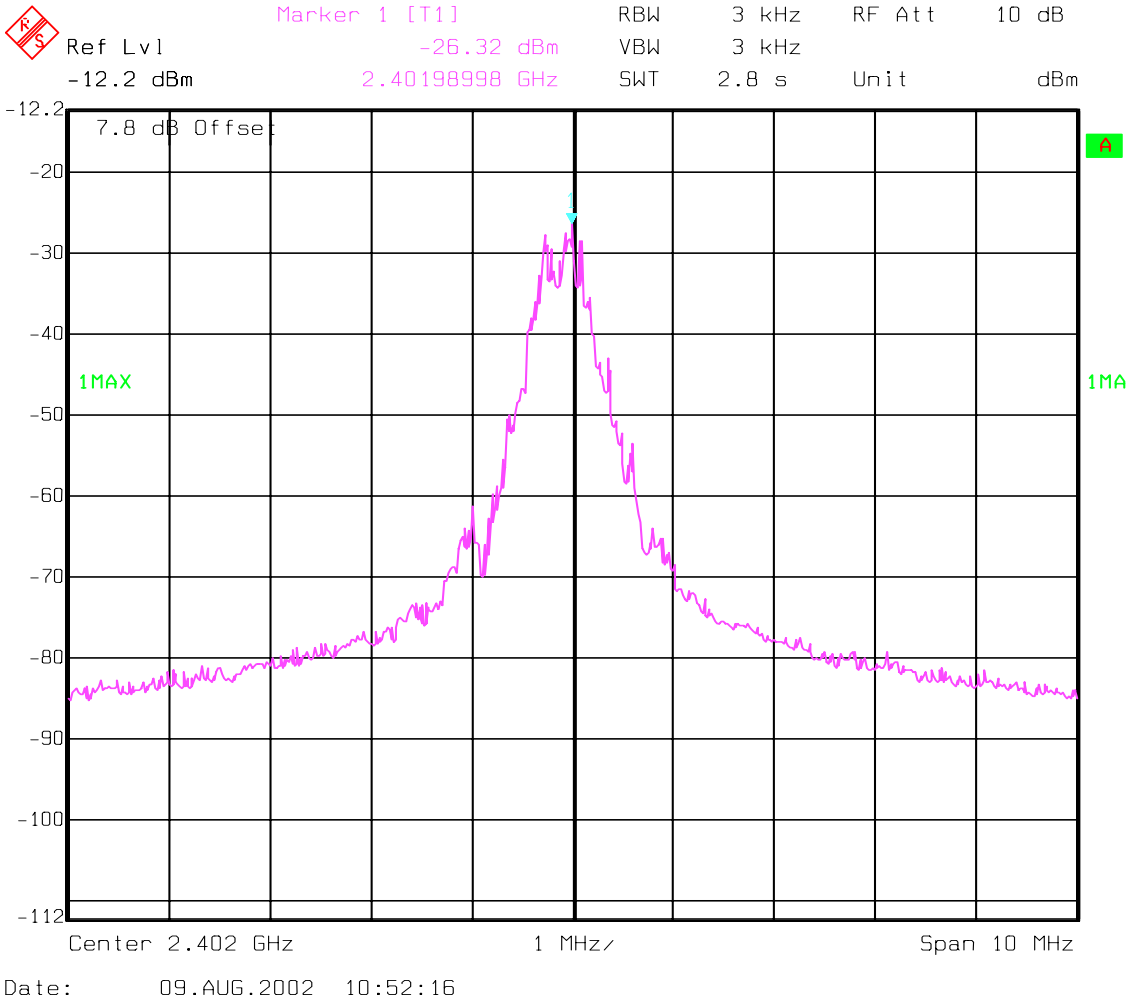
LIMIT **SUBCLAUSE §15.247(d)**

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

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

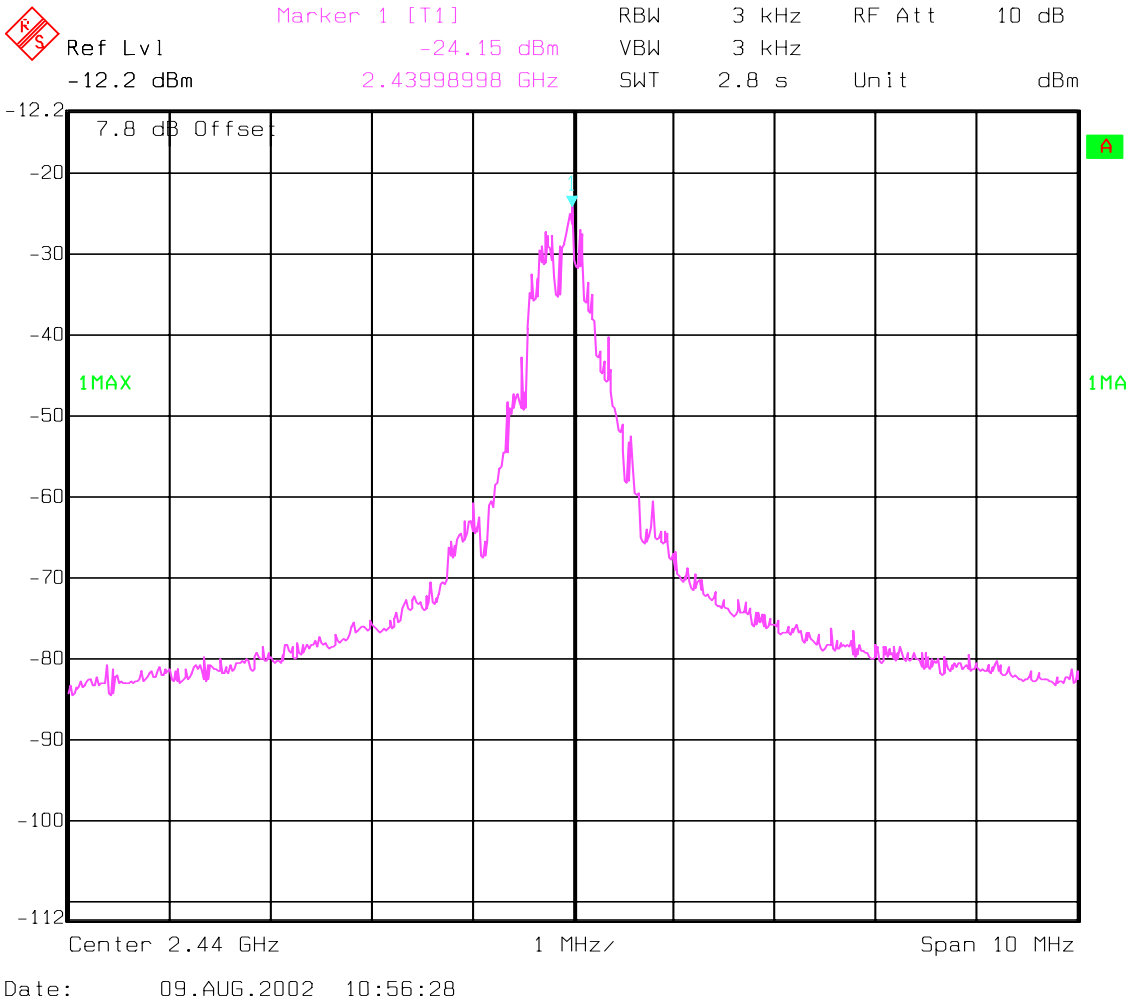
POWER SPECTRAL DENSITY §15.247(d)

Lowest Channel: 2402MHz



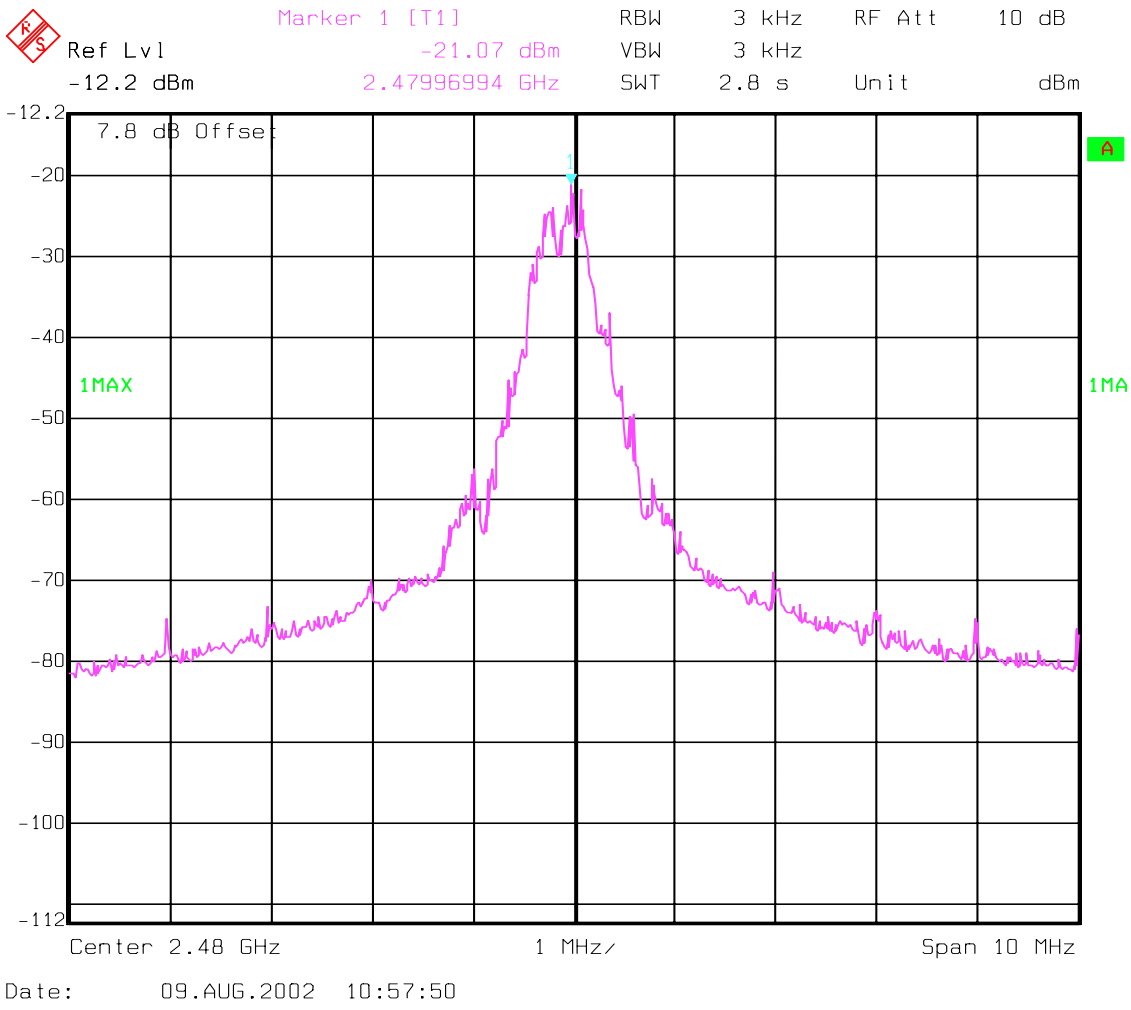
POWER SPECTRAL DENSITY §15.247(d)

Middle Channel: 2440MHz



POWER SPECTRAL DENSITY §15.247(d)

Highest Channel: 2480MHz



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

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2402	2440	2480
T_{nom}(23)°C	V_{nom}(2.5)VDC	-11.25	-9.19	-6.03
Measurement uncertainity		±0.5dBm		

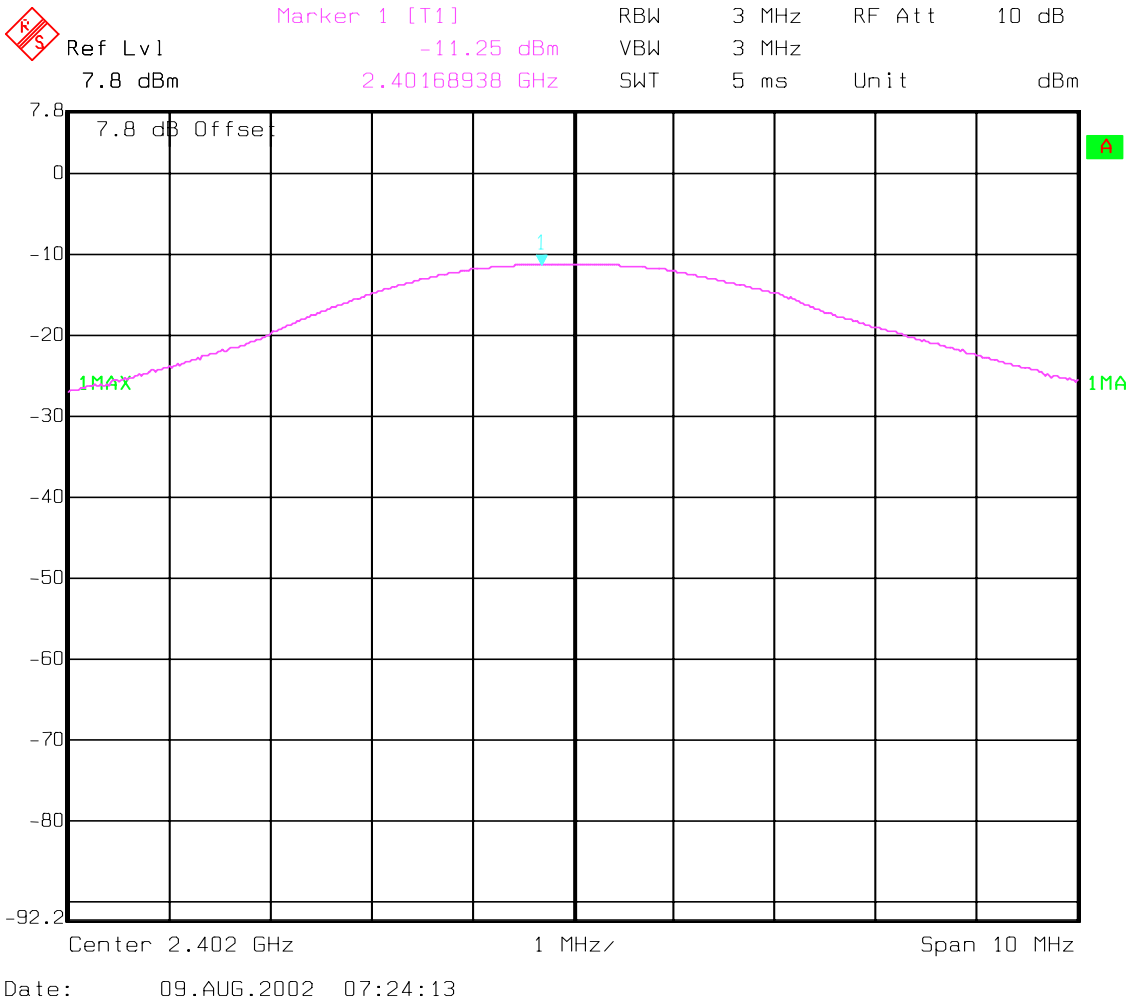
RBW / VBW : 3 MHz

LIMIT SUBCLAUSE § 15.247 (b) (1)

Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt

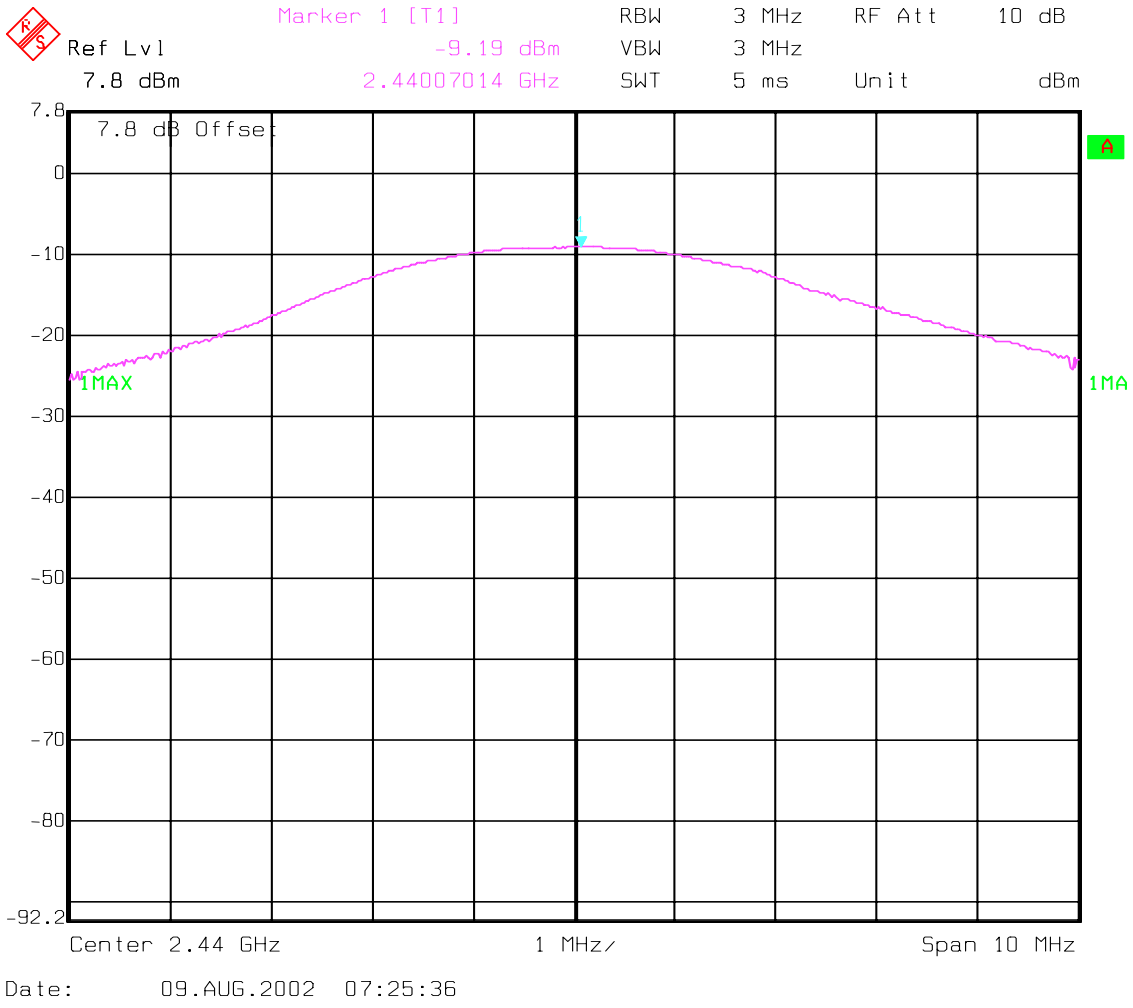
PEAK OUTPUT POWER (CONDUCTED) §15.247 (b)

Lowest Channel: 2402MHz



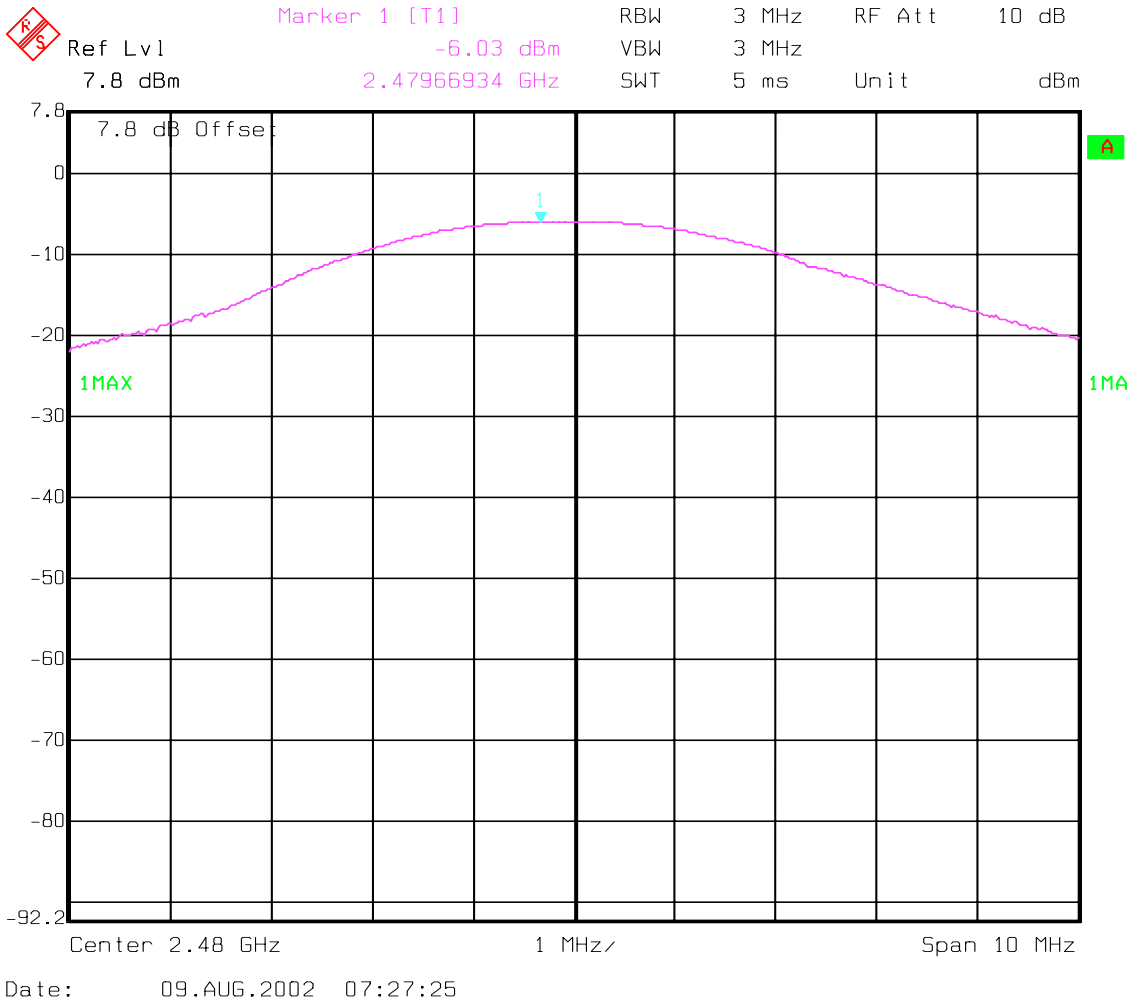
PEAK OUTPUT POWER (CONDUCTED) §15.247 (b)

Mid Channel: 2440MHz



PEAK OUTPUT POWER (CONDUCTED) §15.247 (b)

Highest Channel: 2480MHz



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

EIRP:

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2402	2440	2480
T_{nom}(23)°C	V_{nom}(2.5)VDC	-6.82	-6.75	-4.40
Measurement uncertainty		±0.5dBm		

RBW/VBW : 3 MHz

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

LIMIT **SUBCLAUSE § 15.247 (b) (1)**

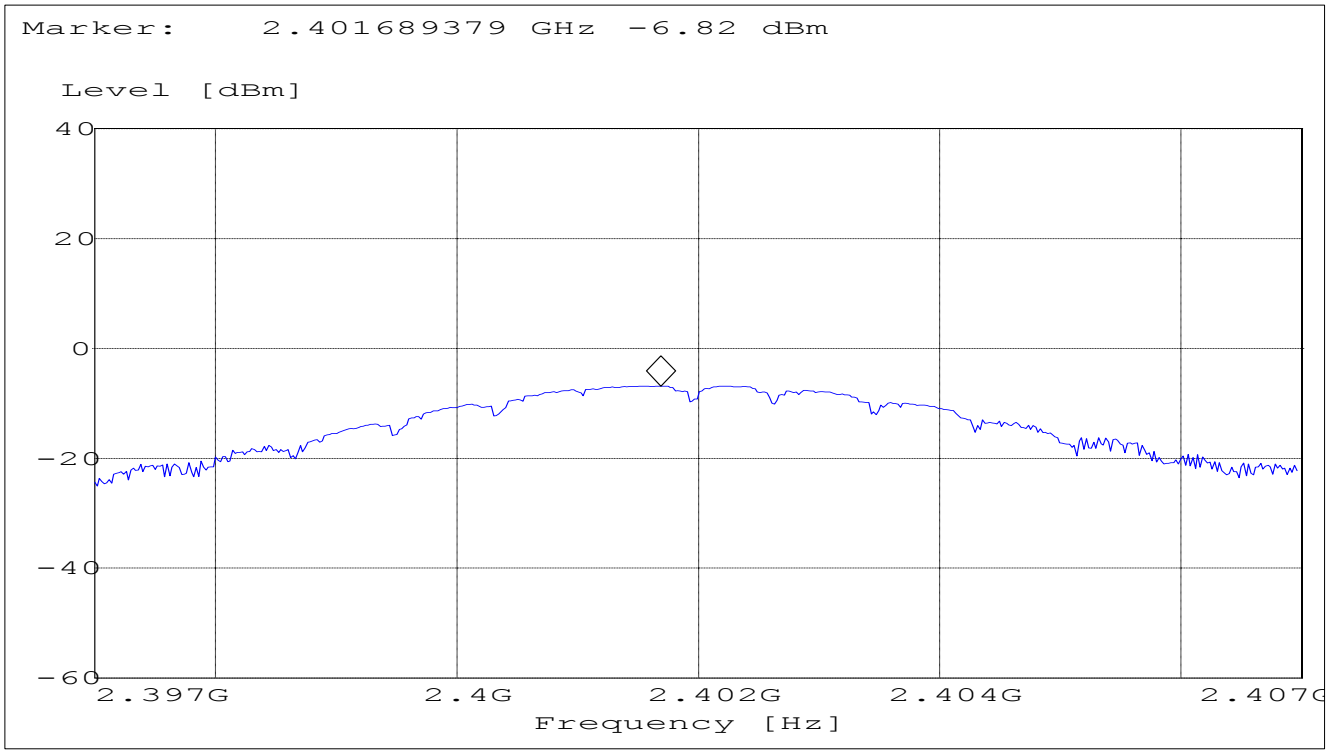
Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt

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

Lowest Channel: 2402MHz

SWEEP TABLE: "EIRP BT low channel"

Short Description:		EIRP Bluetooth channel-2402MHz		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF BW
2.397GHz	2.407GHz	MaxPeak	Coupled	3 MHz

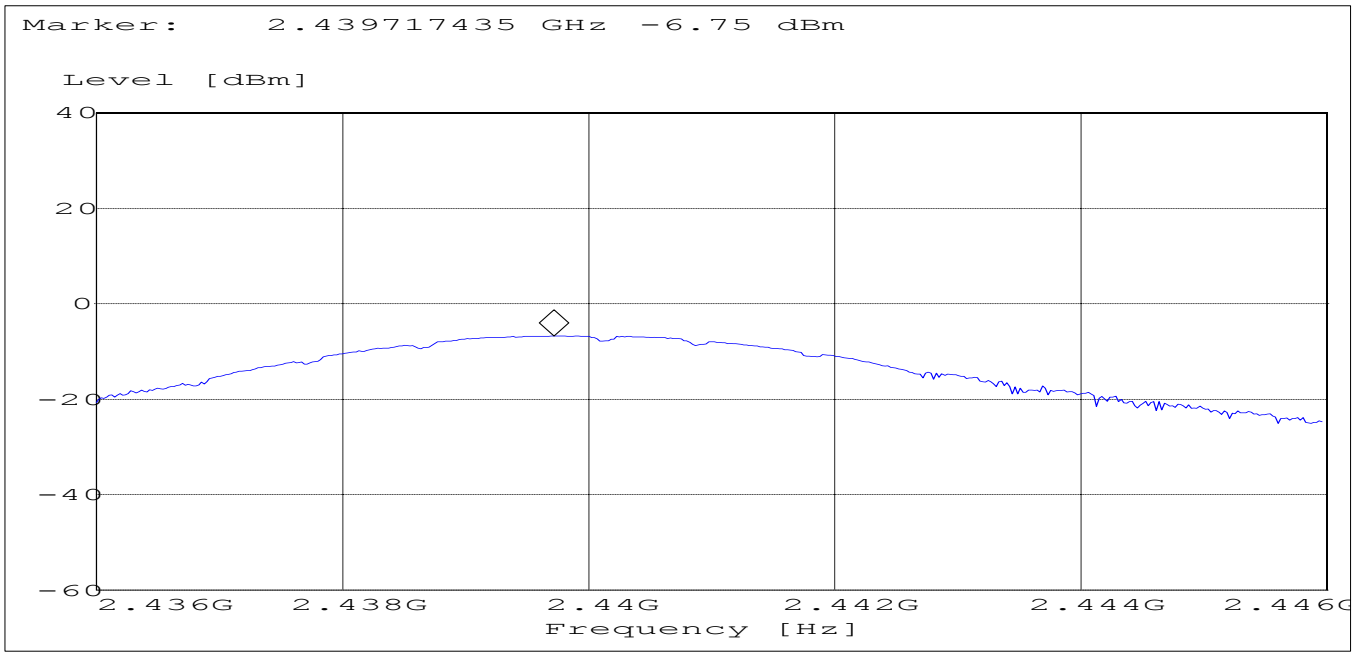


PEAK OUTPUT POWER (RADIATED) §15.247 (b) (1)

Mid Channel: 2440MHz

SWEEP TABLE: "EIRP BT Mid channel"

Short Description:		EIRP Bluetooth channel-2441MHz		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF BW
2.436GHz	2.446GHz	MaxPeak	Coupled	3 MHz

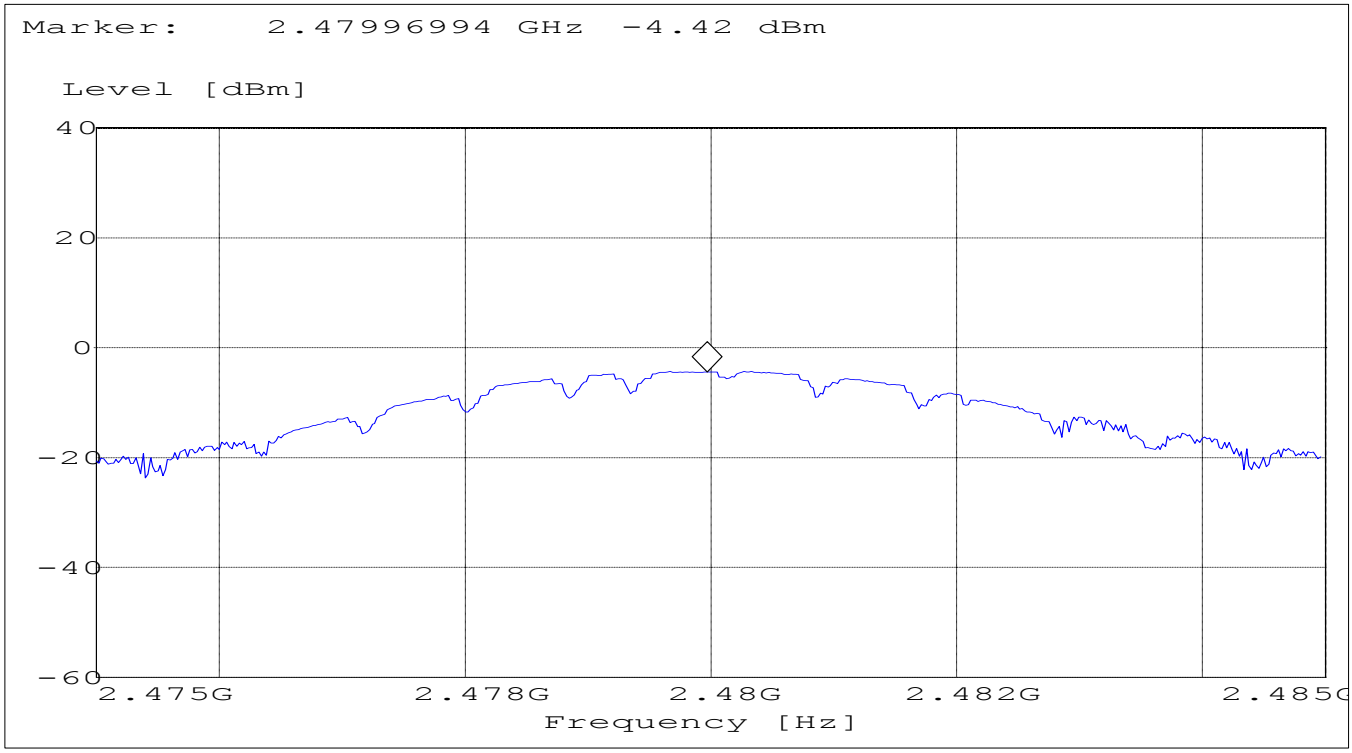


PEAK OUTPUT POWER (RADIATED) §15.247 (b) (1)

Highest Channel: 2480MHz

SWEEP TABLE: "EIRP BT High channel"

Short Description:		EIRP Bluetooth channel-2480MHz		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF BW
2.475GHz	2.485GHz	MaxPeak	Coupled	3 MHz



BAND EDGE COMPLIANCE §15.247 (c)

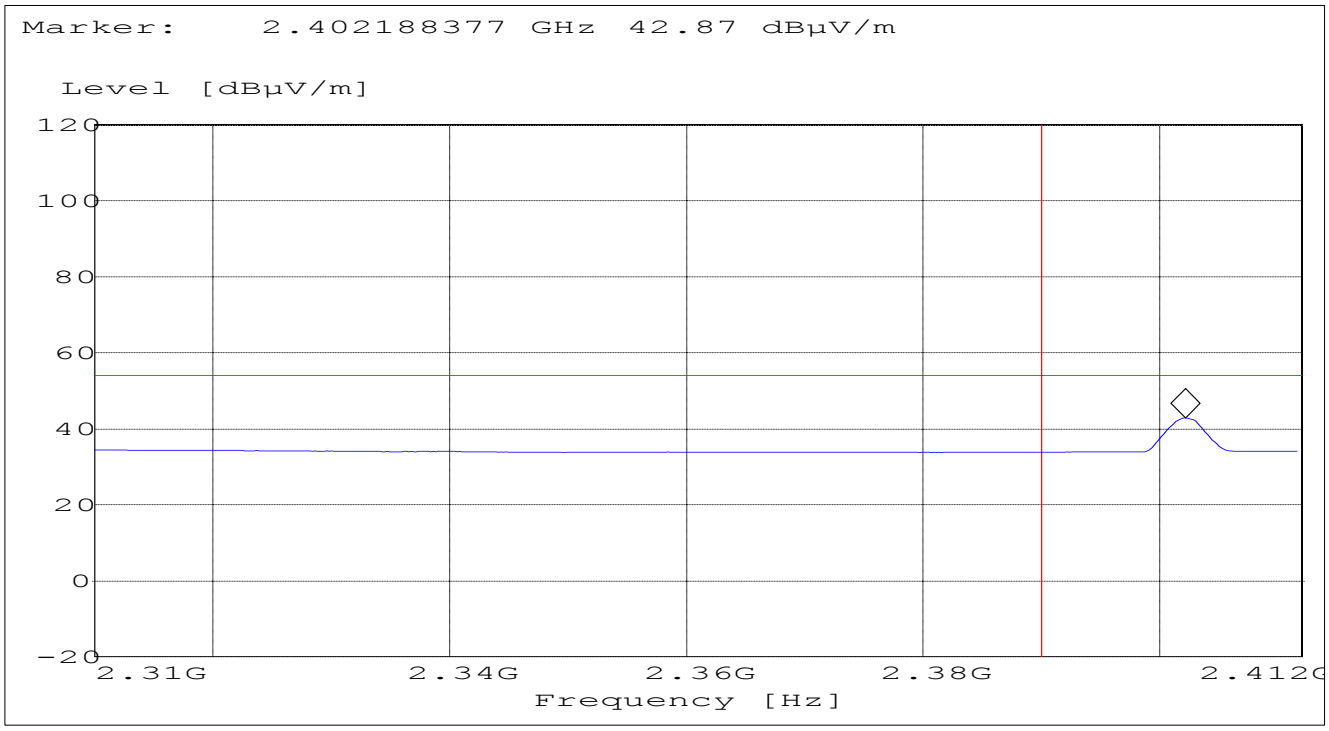
(Plot valid for both Hopping ON & OFF)

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

Average meaurement

Operating condition	:	Tx at 2402MHz
SWEEP TABLE	:	"FCC15.247 LBE_AVG"
Short Description	:	FCC15.247 BT Low-band-edge
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)

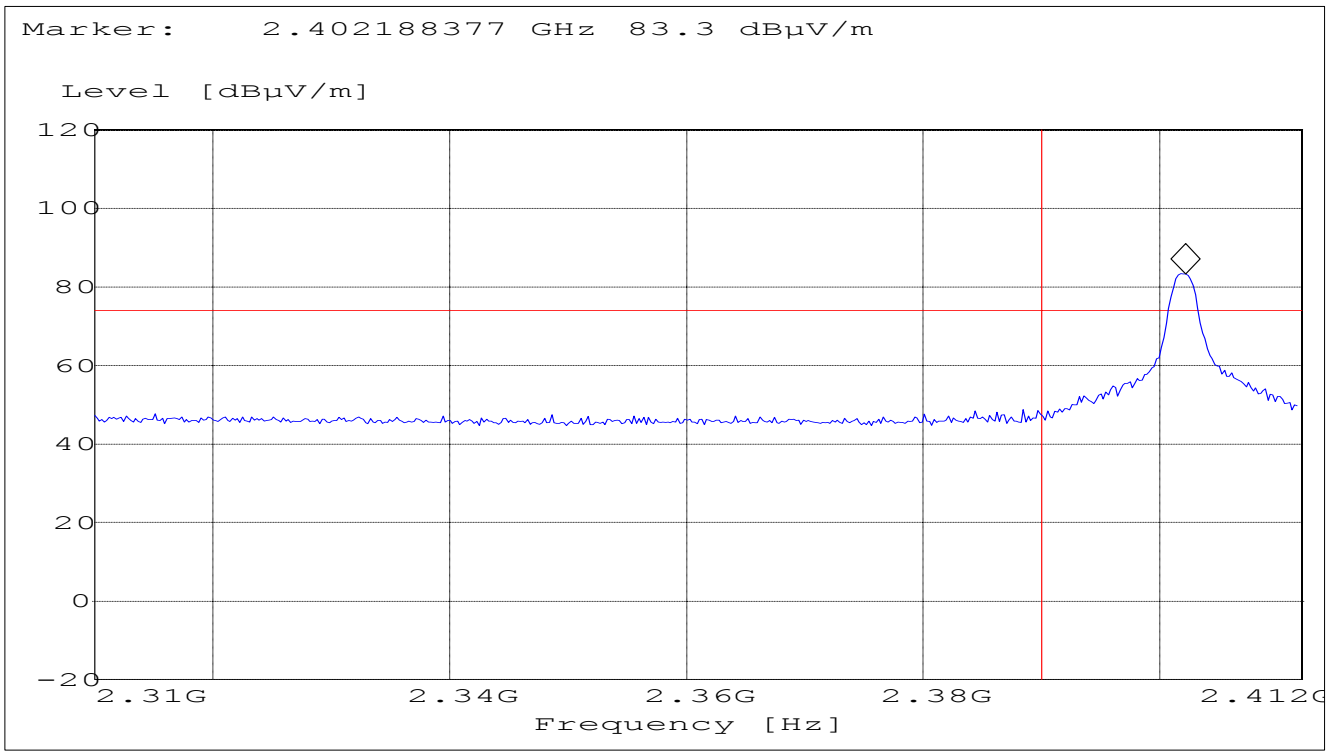
(Plot valid for both Hopping ON & OFF)

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

Peak meaurement

Operating condition	:	Tx at 2402MHz
SWEEP TABLE	:	"FCC15.247 LBE_Pk"
Short Description	:	FCC15.247 BT Low-band-edge
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)

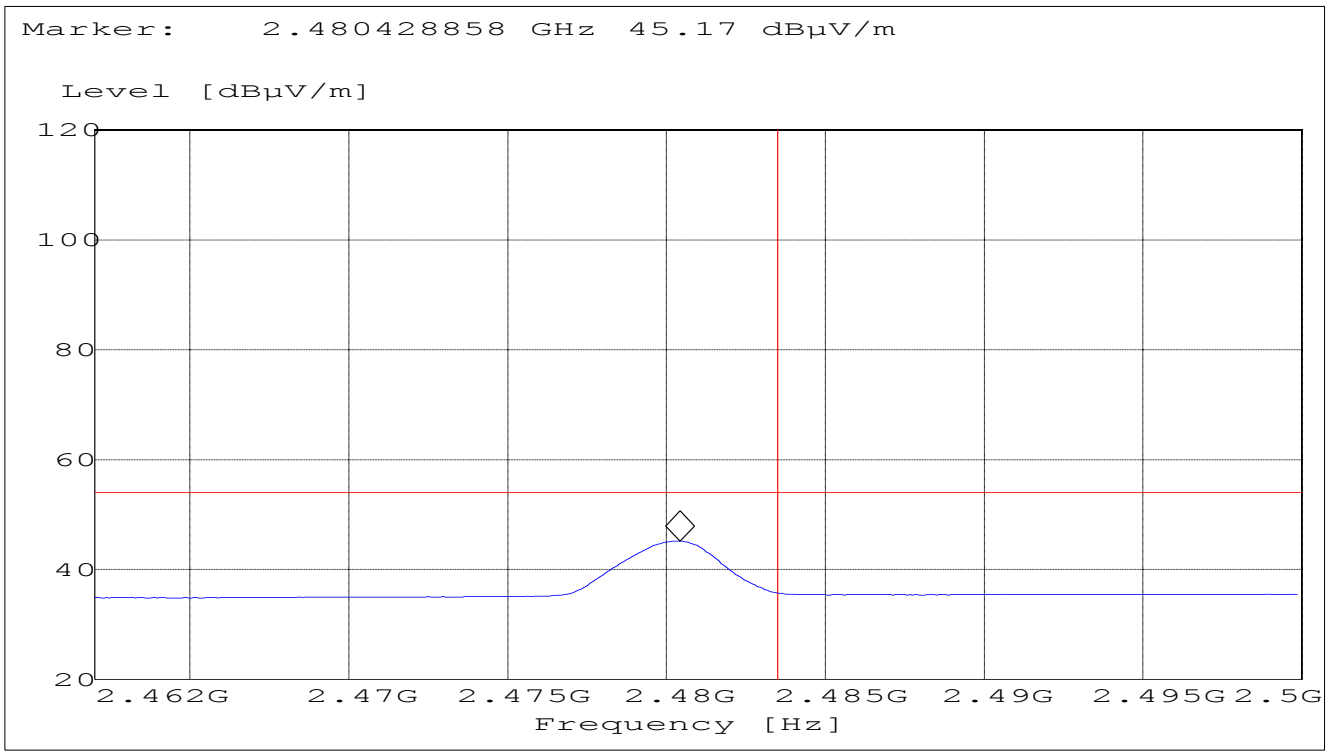
(Plot valid for both Hopping ON & OFF)

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

Average meaurement

Operating condition	:	Tx at 2480MHz
SWEEP TABLE	:	"FCC15.247 HBE_AVG"
Short Description	:	FCC15.247 BT High-band-edge
Limit Line	:	54dBµV

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



BAND EDGE COMPLIANCE §15.247 (c)

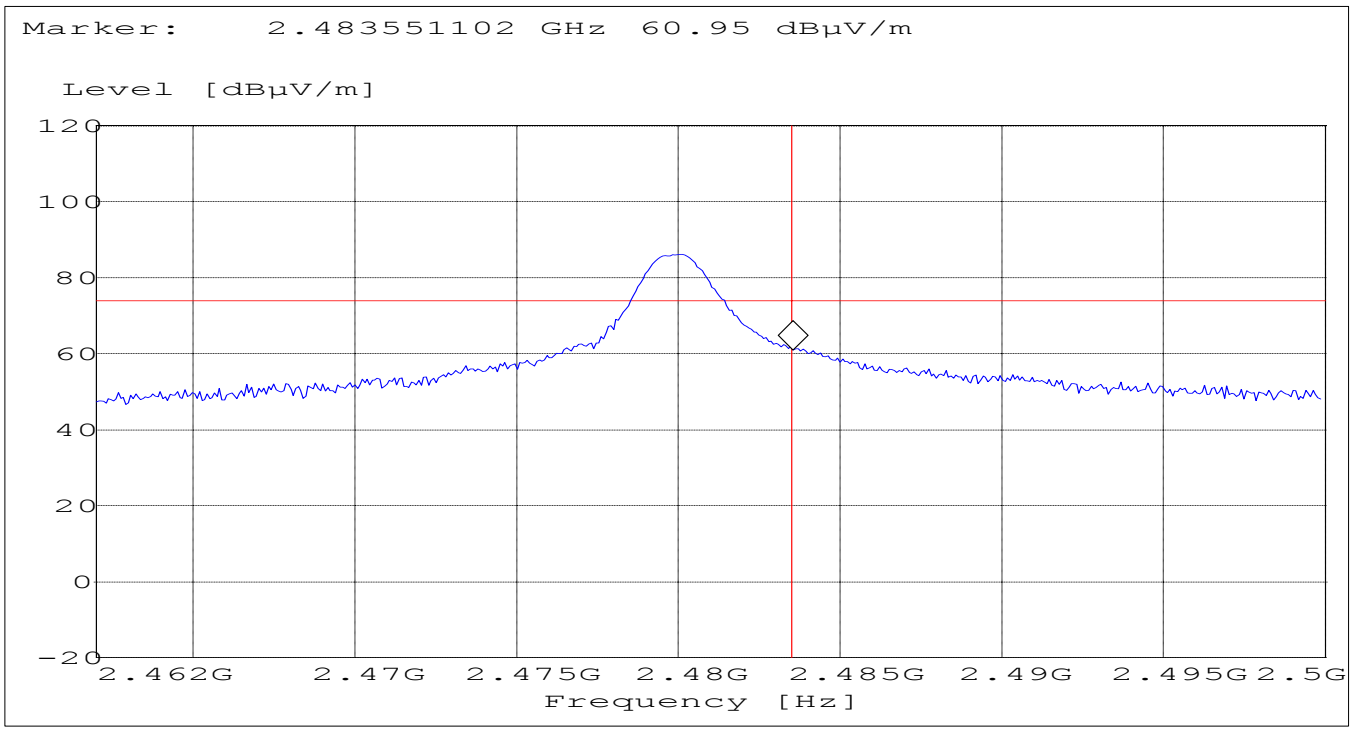
(Plot valid for both Hopping ON & OFF)

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

Peak meaurement

Operating condition	:	Tx at 2480MHz
SWEEP TABLE	:	"FCC15.247 HBE_PK"
Short Description	:	FCC15.247 BT High-band-edge
Limit Line	:	74dBµV

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



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

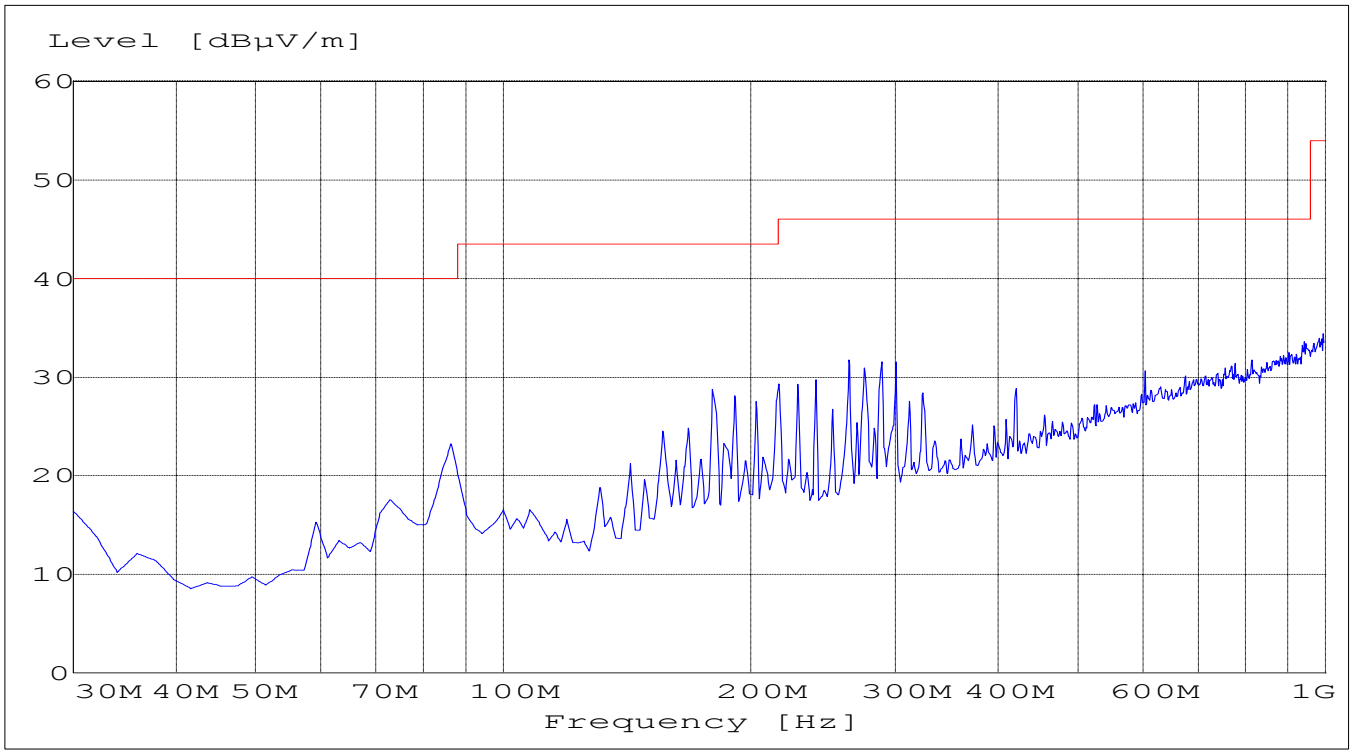
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)

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

Tx ch-Low 2402 MHz		Tx ch-Mid 2440 MHz		Tx ch-High 2480 MHz	
Freq.(MHz)	Level (dBµV/m)	Freq.(MHz)	Level (dBµV/m)	Freq.(MHz)	Level (dBµV/m)
1204.4	51.16	1224.48	50.68	1240.48	50.03

EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel(2402MHz): 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

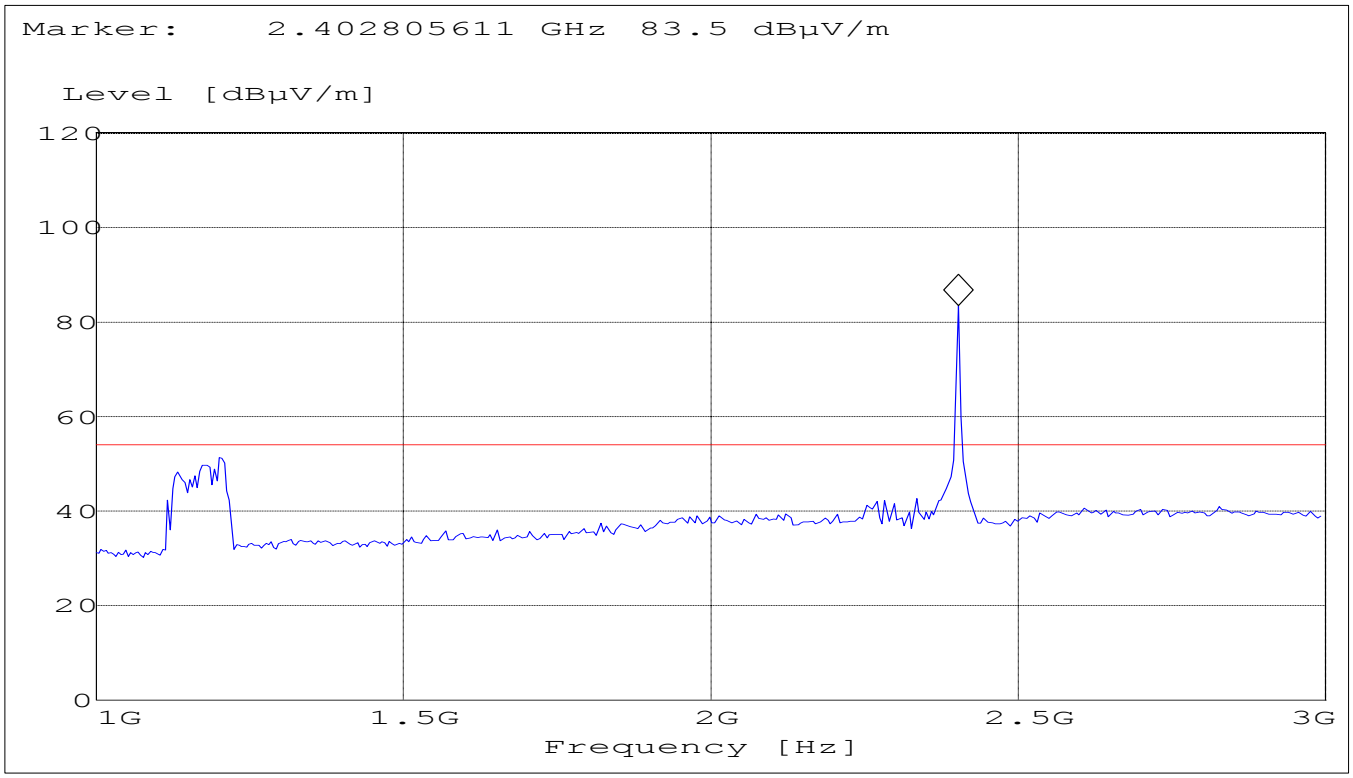


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel(2402MHz): 1GHz – 3GHz

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

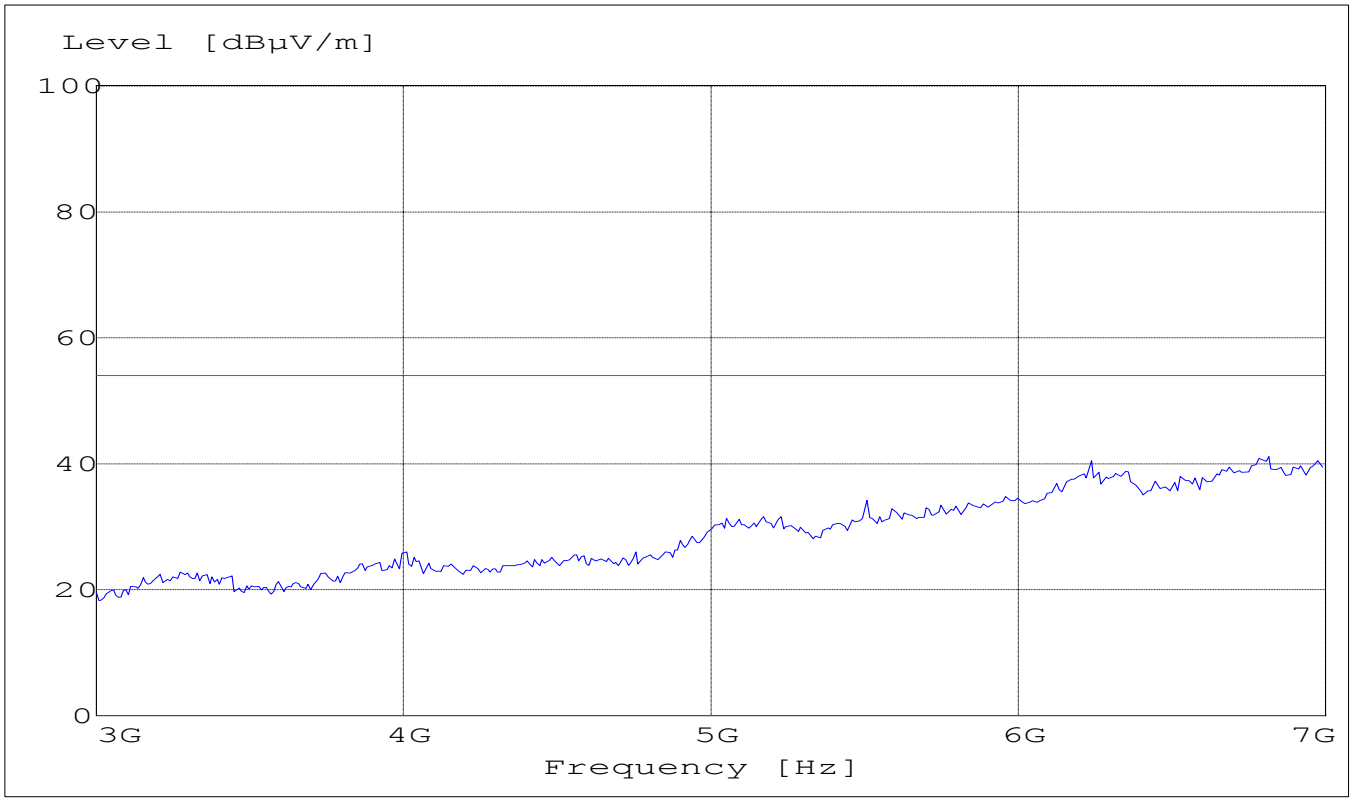
SWEEP TABLE: "BT Spuri hi 1-3G"
Short Description: Bluetooth Spurious 1-3GHz

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



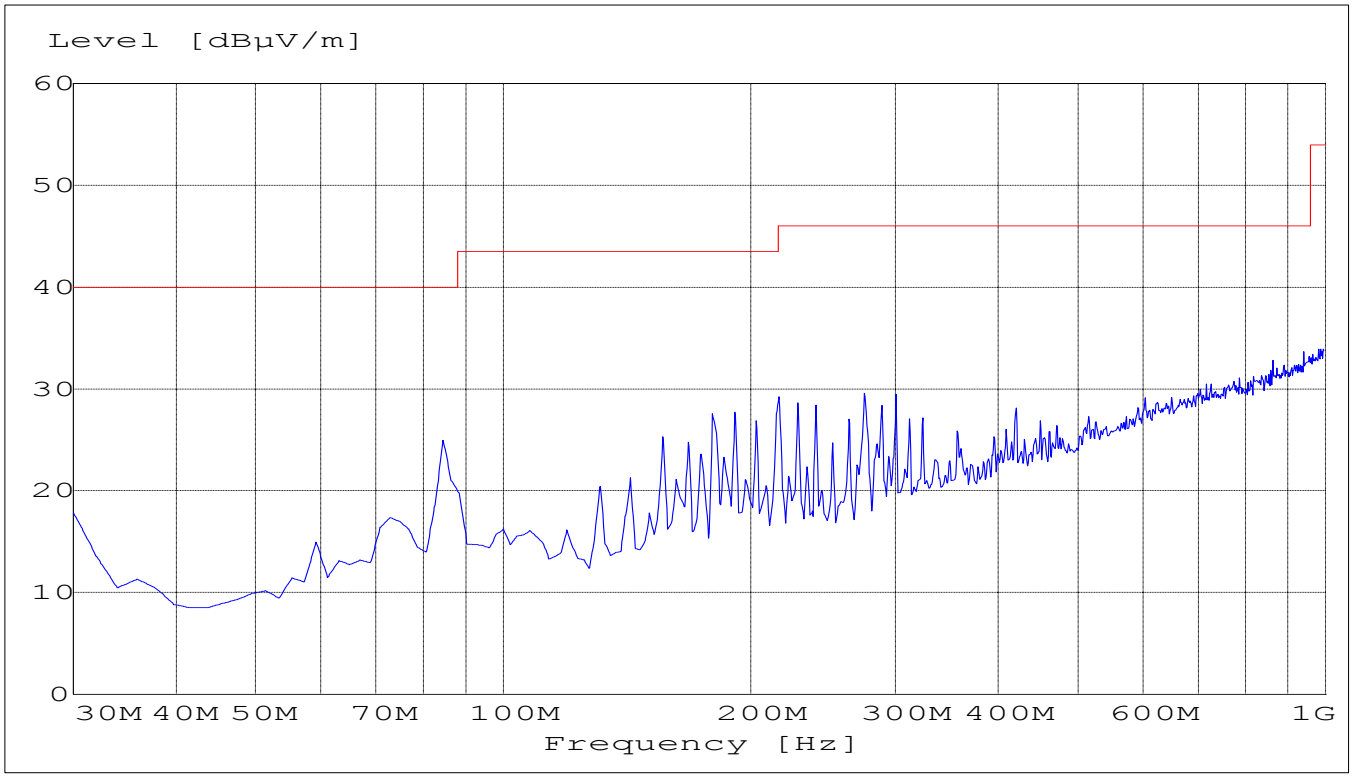
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel(2402MHz): 3GHz – 7GHz

SWEEP TABLE:		"BT Spuri hi 3-7G"			
Short Description:		Bluetooth Spurious 3-7GHz			
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
3.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Middle Channel(2440MHz): 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

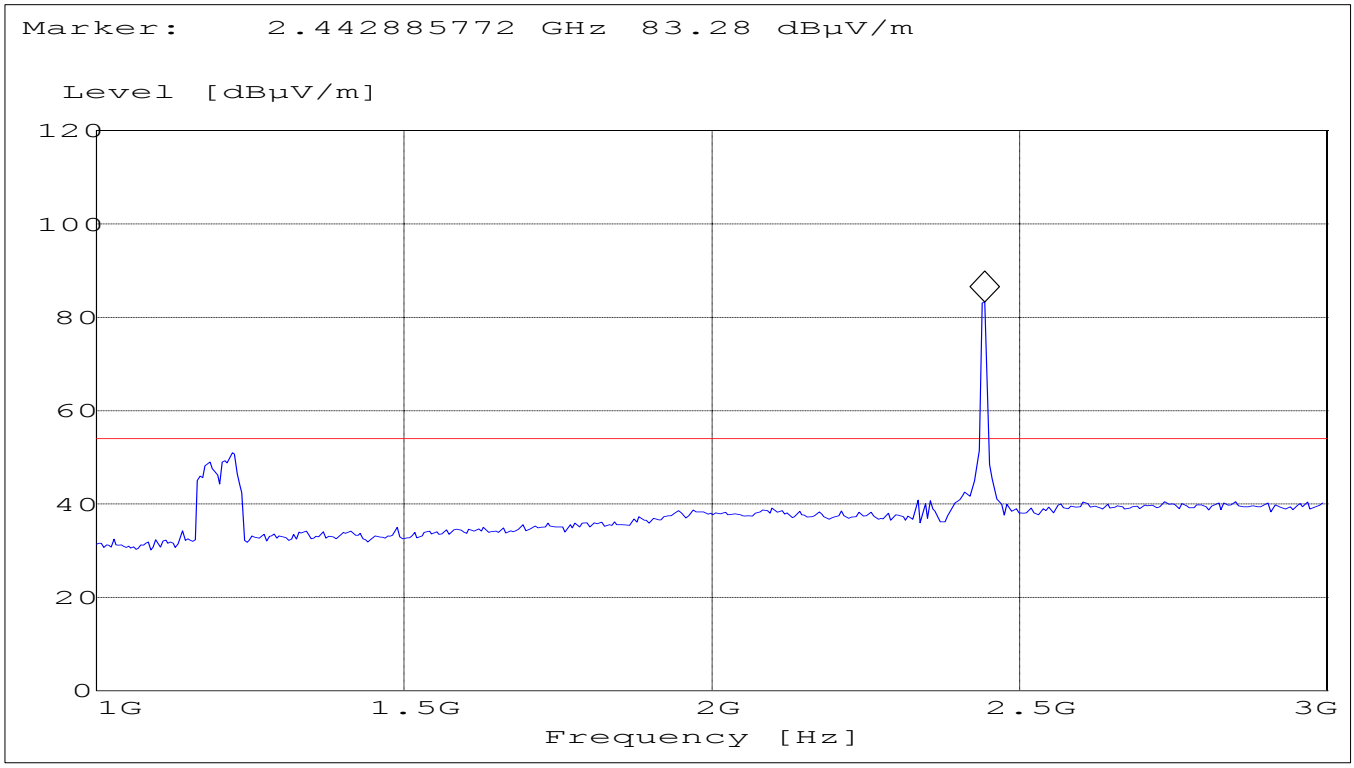


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Middle Channel(2440MHz): 1GHz – 3GHz

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

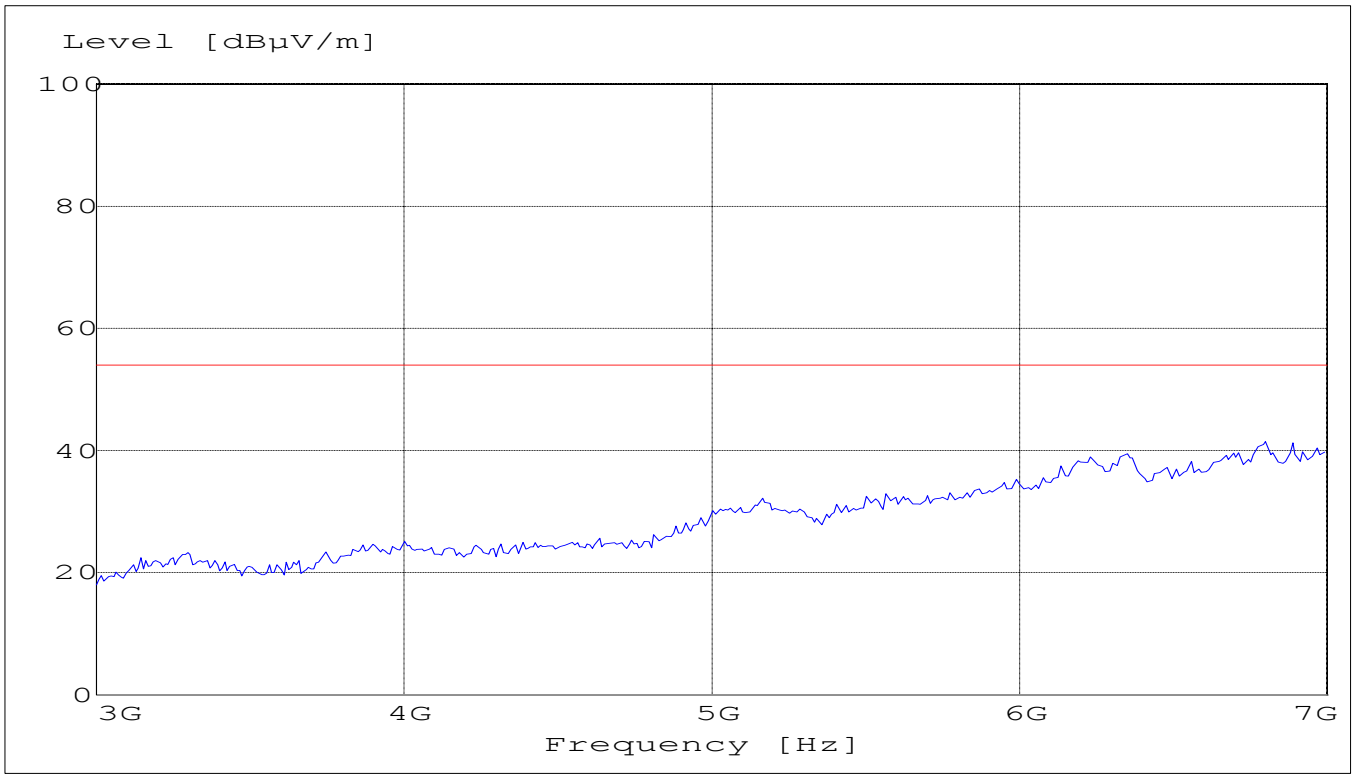
SWEEP TABLE: "BT Spuri hi 1-3G"
Short Description: Bluetooth Spurious 1-3GHz

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



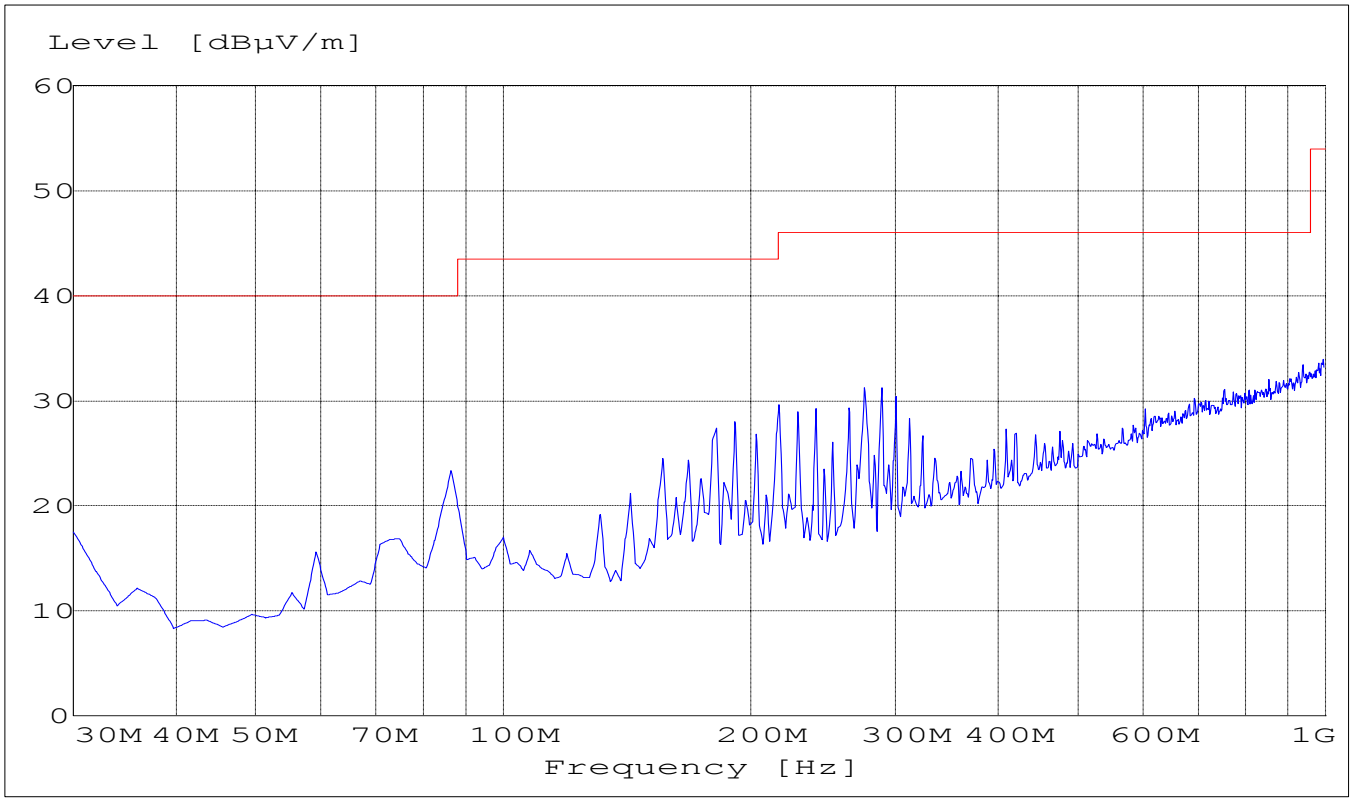
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Middle Channel(2440MHz): 3GHz – 7GHz

SWEEP TABLE:		"BT Spuri hi 3-7G"			
Short Description:		Bluetooth Spurious 3-7GHz			
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
3.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel(2480MHz): 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

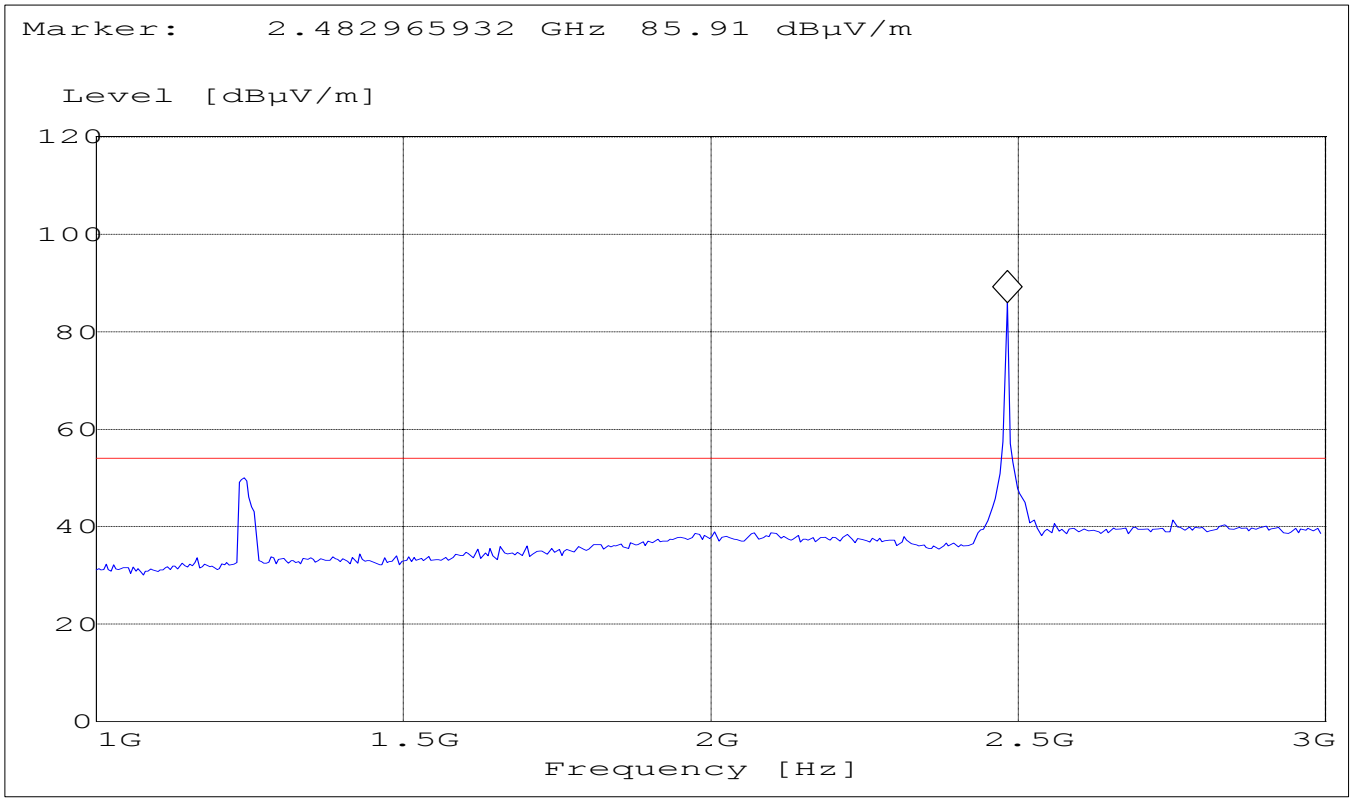


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel(2480MHz): 1GHz – 3GHz

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

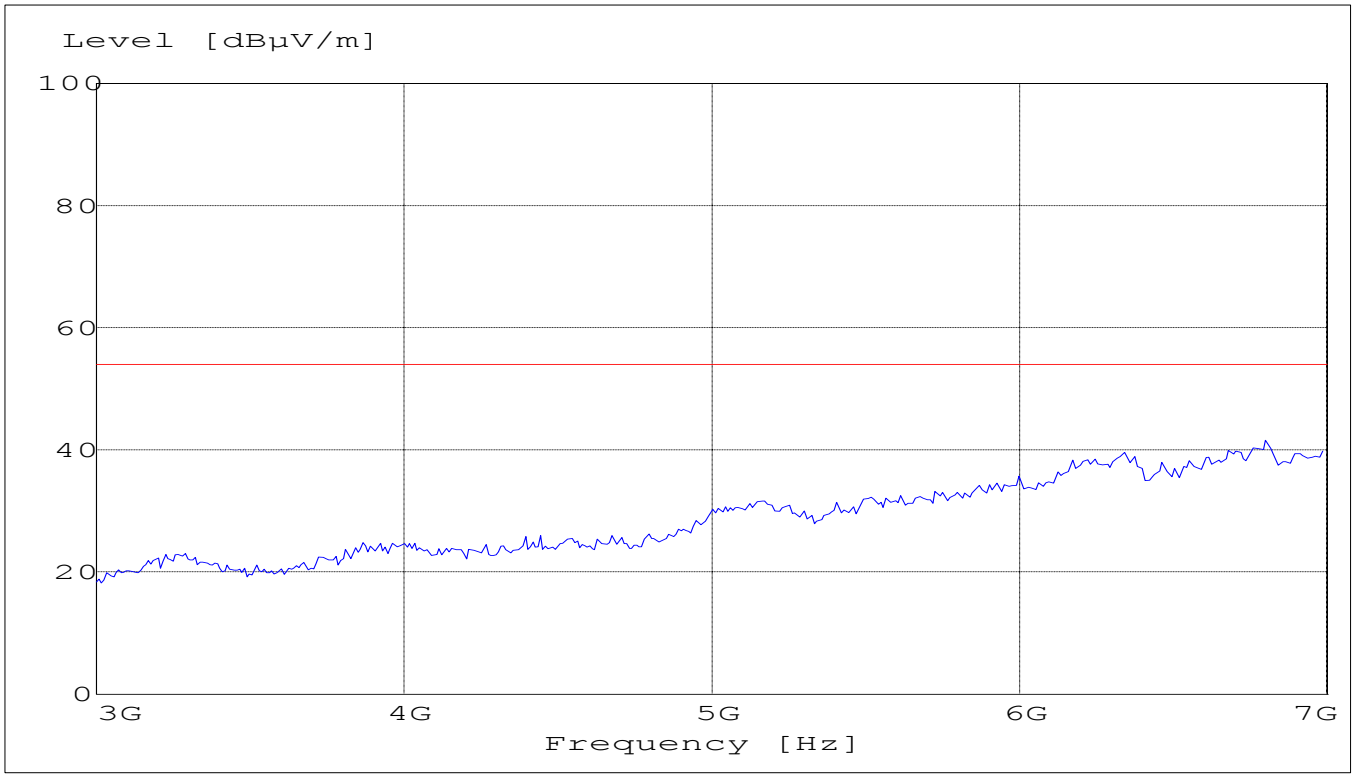
SWEEP TABLE: "BT Spuri hi 1-3G"
Short Description: Bluetooth Spurious 1-3GHz

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



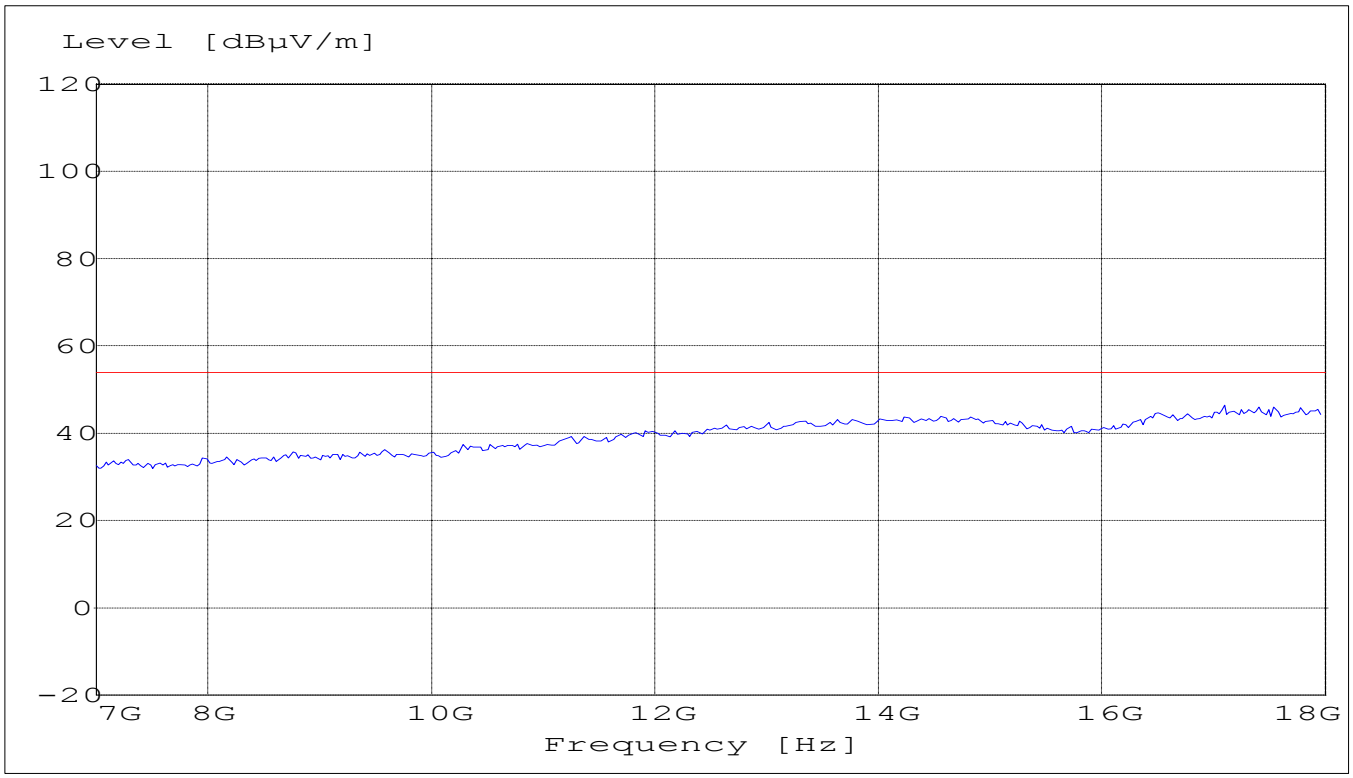
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel(2480MHz): 3GHz – 7GHz

SWEEP TABLE:		"BT Spuri hi 3-7G"			
Short Description:		Bluetooth Spurious 3-7GHz			
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
3.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



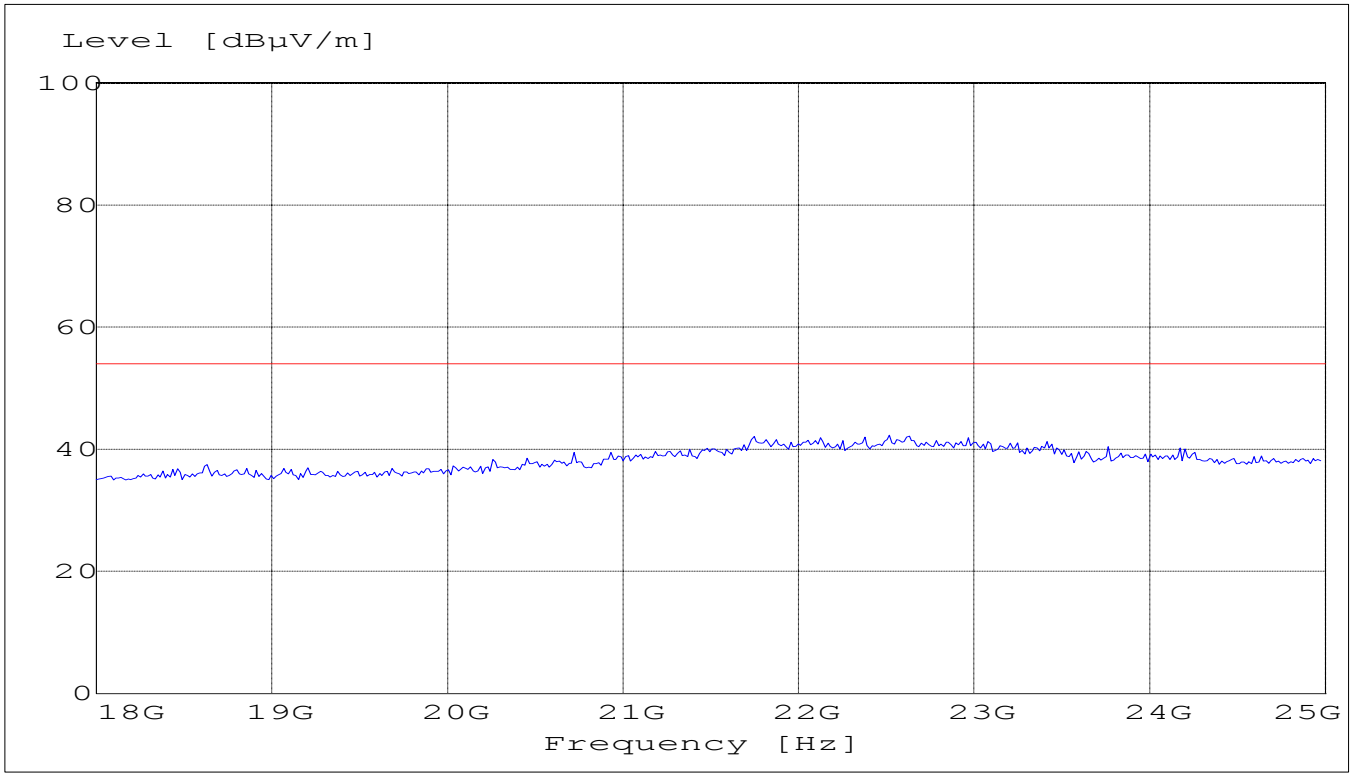
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
7GHz – 18GHz
(This plot is valid for all three channels)

SWEEP TABLE:		"BT Spuri hi 7-18G"			
Short Description:		Bluetooth Spurious 7-18GHz			
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
7.0 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

Model: ACP-8U(100-240V)

(Limit: CISPR 22 class-B)

Note: This measurement is carried out according to guidelines of FCC 02-157

Technical specification : 15.107 / 15.207 (Revised as of October 1, 1991)

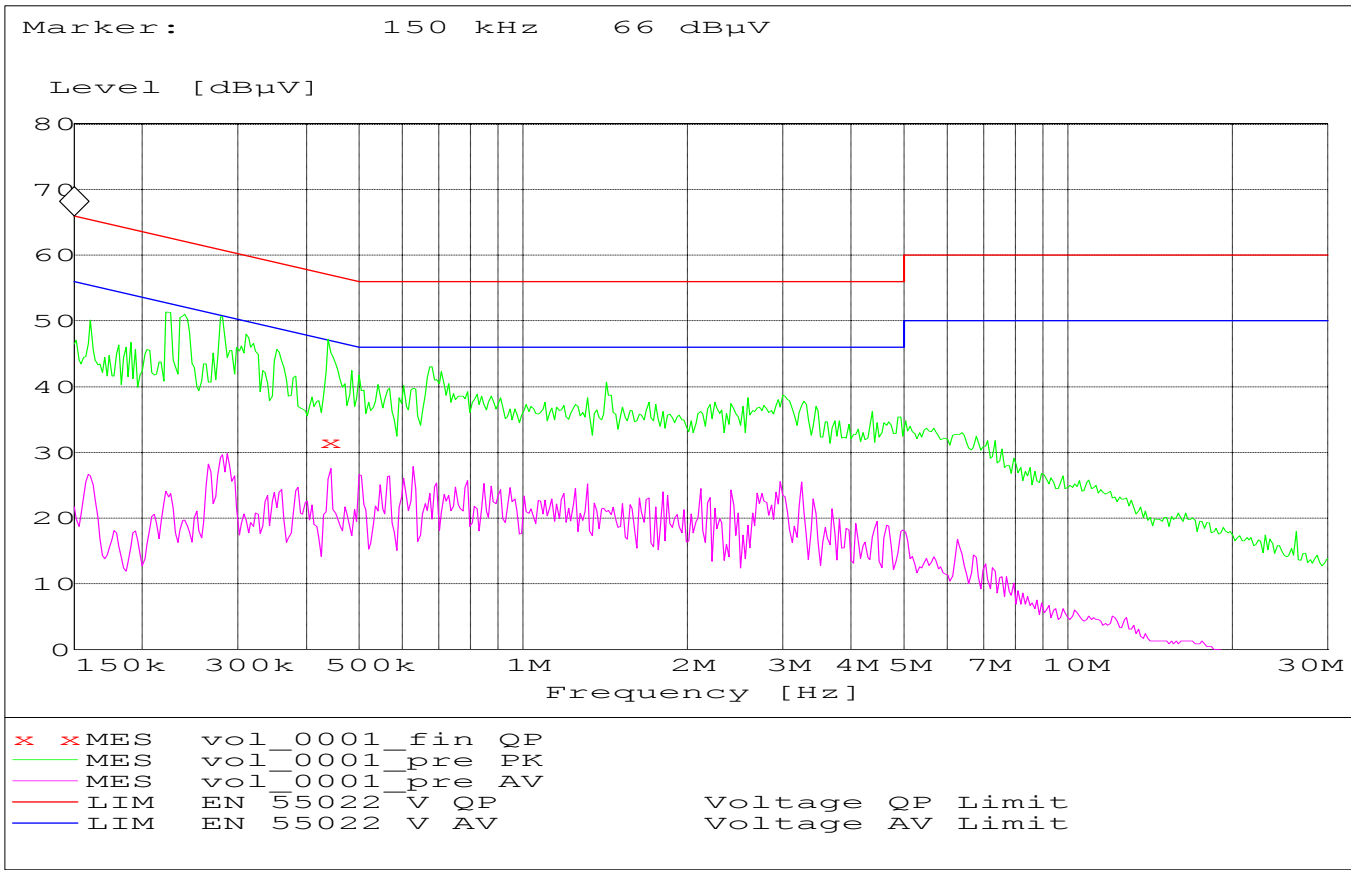
Limit

0.45 to 30 MHz	250 µV / 47.96 dBµV

ANALYZER SETTINGS: RBW = 10KHz **VBW = 10KHz**

MEASUREMENT RESULT: "vol_0001_fin QP"
8/8/02 10:18AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.439339	31.60	0.0	57	25.4	1	---

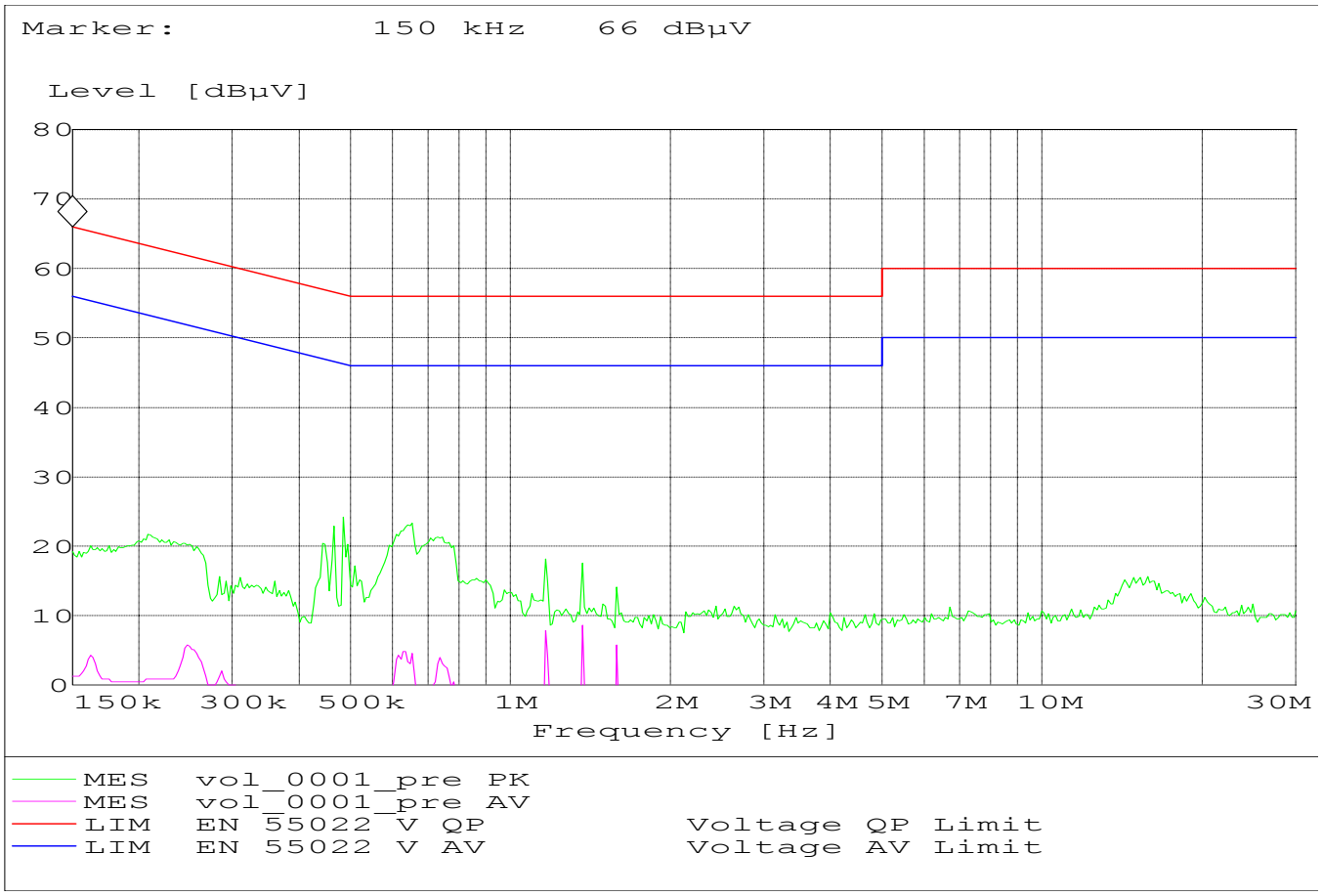


Measured with AC/DC power adapter
Model: ACP-7U(120V)
(Limit: CISPR 22 class-B)
Note: This measurement is carried out according to guidelines of FCC 02-157

Technical specification : 15.107 / 15.207 (Revised as of October 1, 1991)
Limit

0.45 to 30 MHz	250 µV / 47.96 dBµV

ANALYZER SETTINGS: RBW = 10KHz VBW = 10KHz



Measured with AC/DC power adapter
Model: ACP-9U(100-240V)
(Limit: CISPR 22 class-B)
Note: This measurement is carried out according to guidelines of FCC 02-157

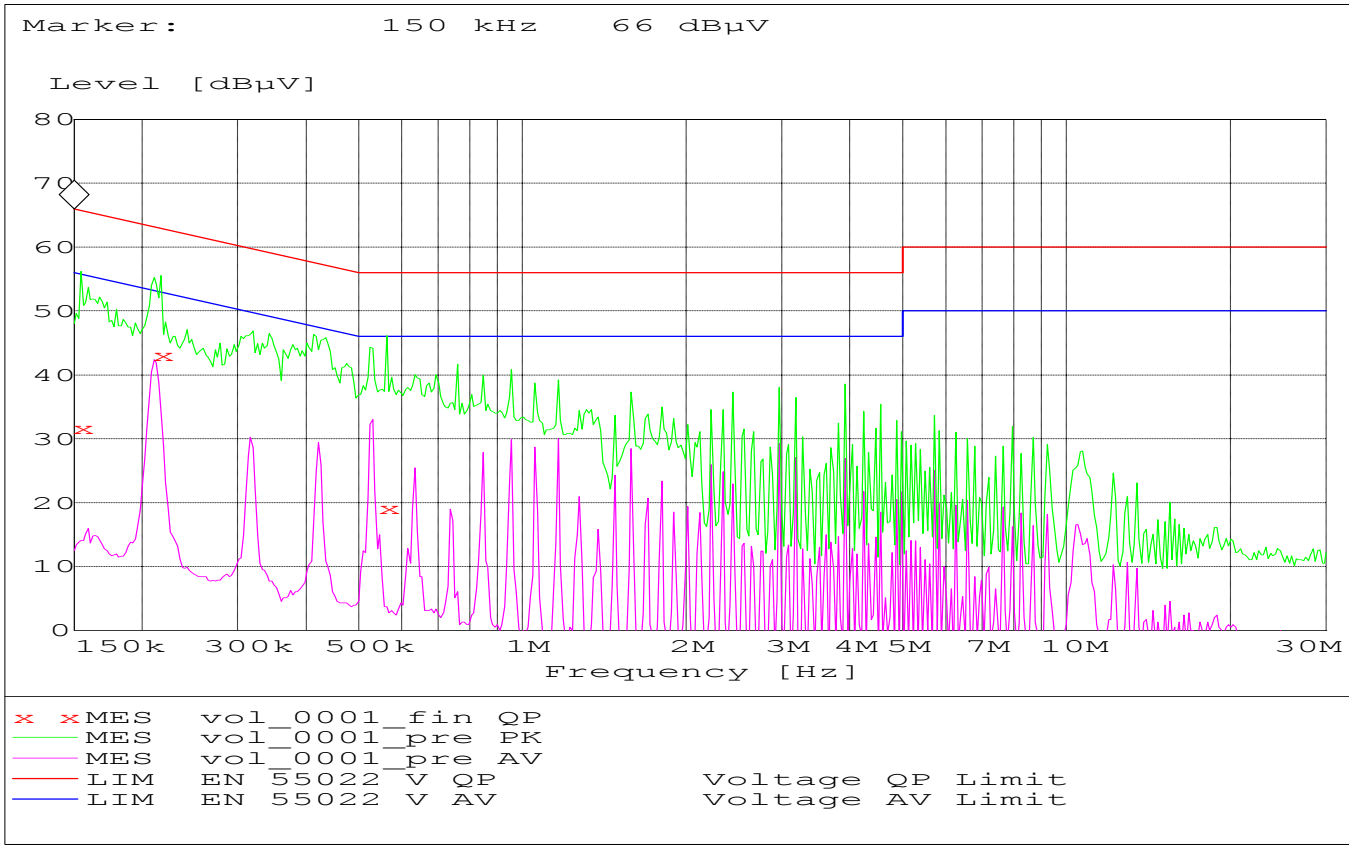
Technical specification : 15.107 / 15.207 (Revised as of October 1, 1991)
Limit

0.45 to 30 MHz	250 µV / 47.96 dBµV

ANALYZER SETTINGS: RBW = 10KHz VBW = 10KHz

MEASUREMENT RESULT: "vol_0001_fin QP"
8/8/02 11:52AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.154545	31.70	0.0	66	34.0	1	---
0.216761	43.10	0.0	63	19.8	2	---
0.563422	19.20	0.0	56	36.8	1	---

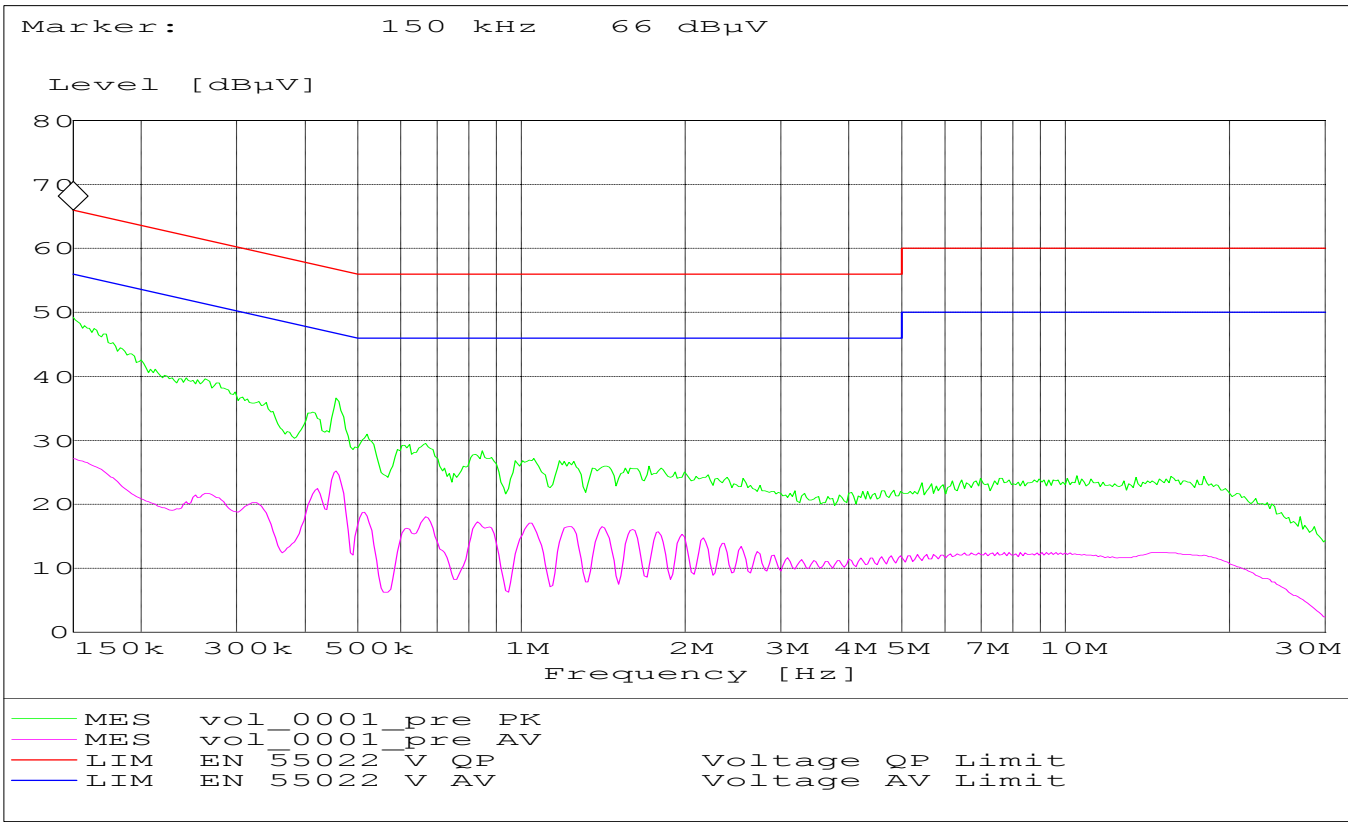


Measured with AC/DC power adapter
Model: ACP-12U(100-240V)
(Limit: CISPR 22 class-B)
Note: This measurement is carried out according to guidelines of FCC 02-157

Technical specification : 15.107 / 15.207 (Revised as of October 1, 1991)
Limit

0.45 to 30 MHz	250 µV / 47.96 dBµV

ANALYZER SETTINGS: RBW = 10KHz VBW = 10KHz



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

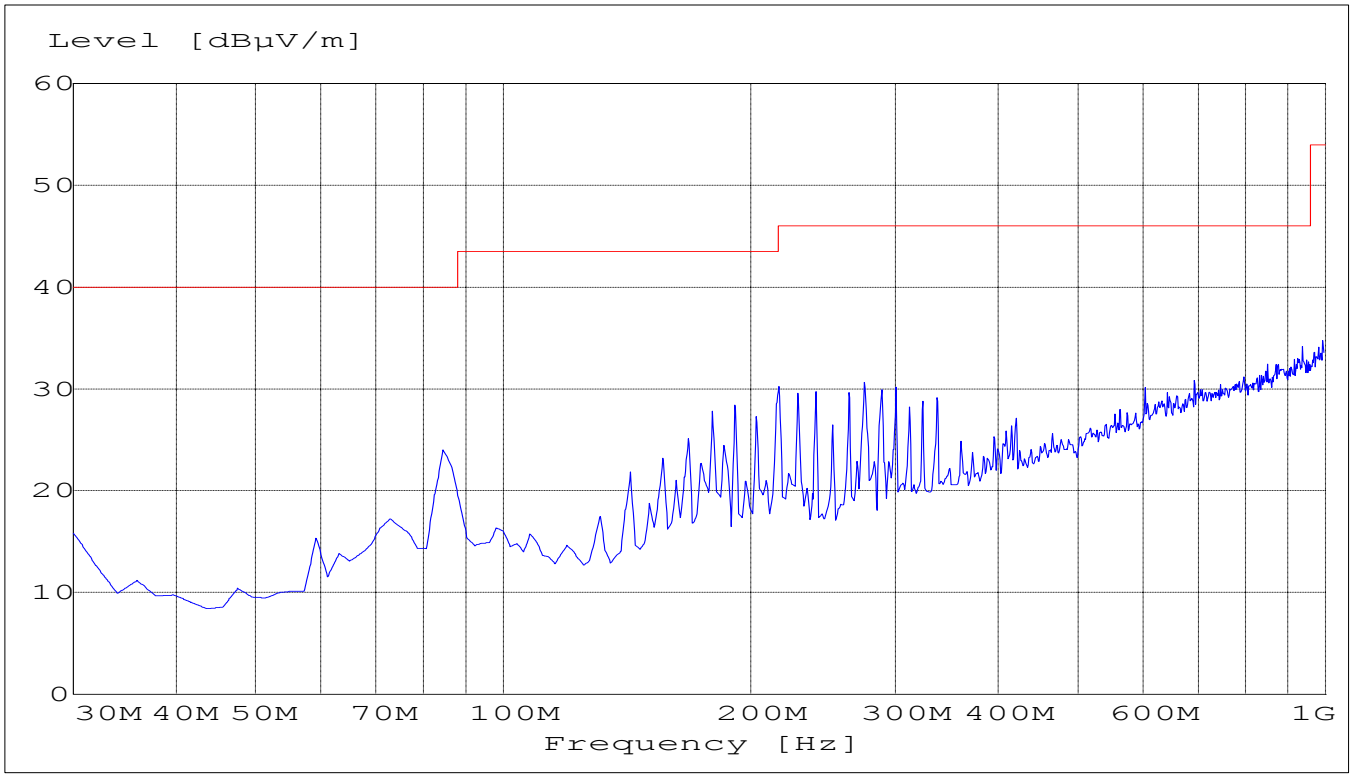
NOTE:
The radiated emissions were done with different settings, using the relevant pre-amplifiers forthe relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 18 and 25 GHz very short cable connections to the antenna was used to minimize the noise 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

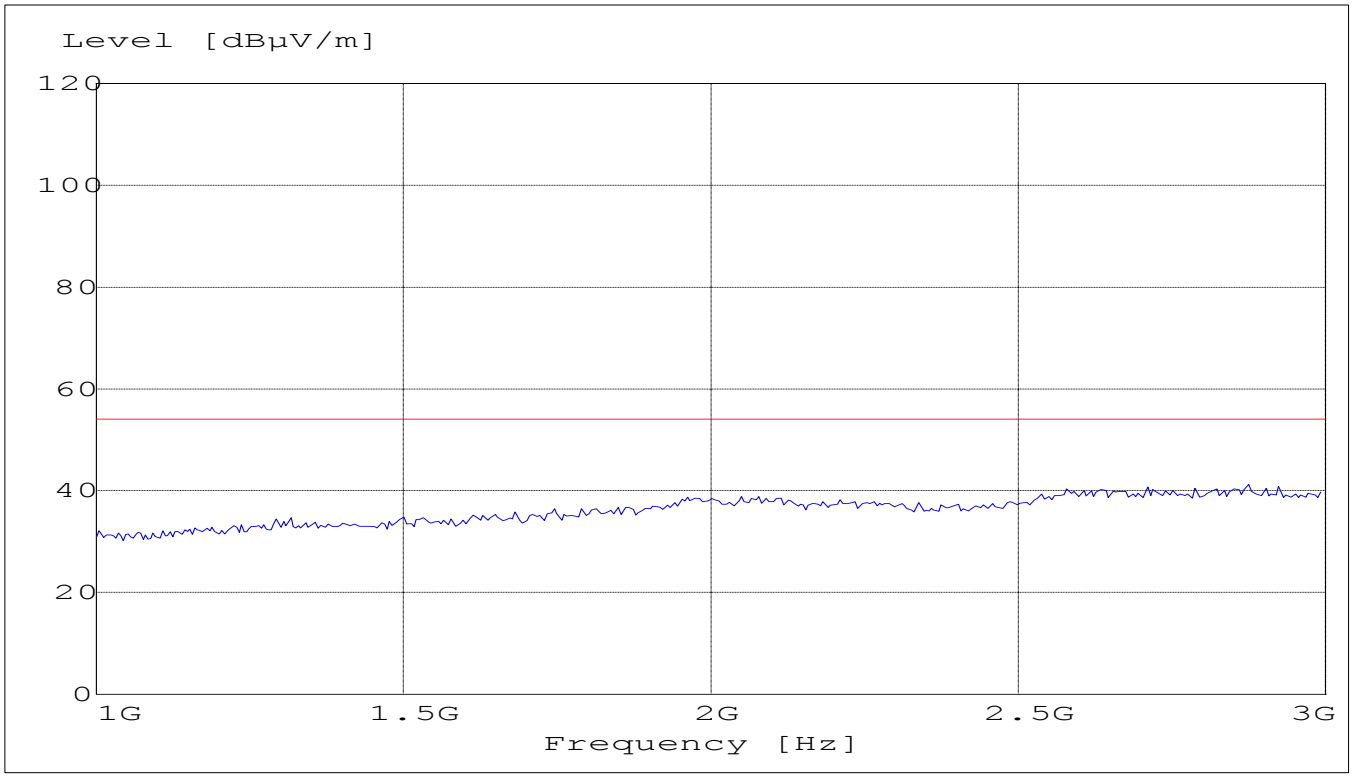


RECEIVER SPURIOUS RADIATION § 15.209

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)

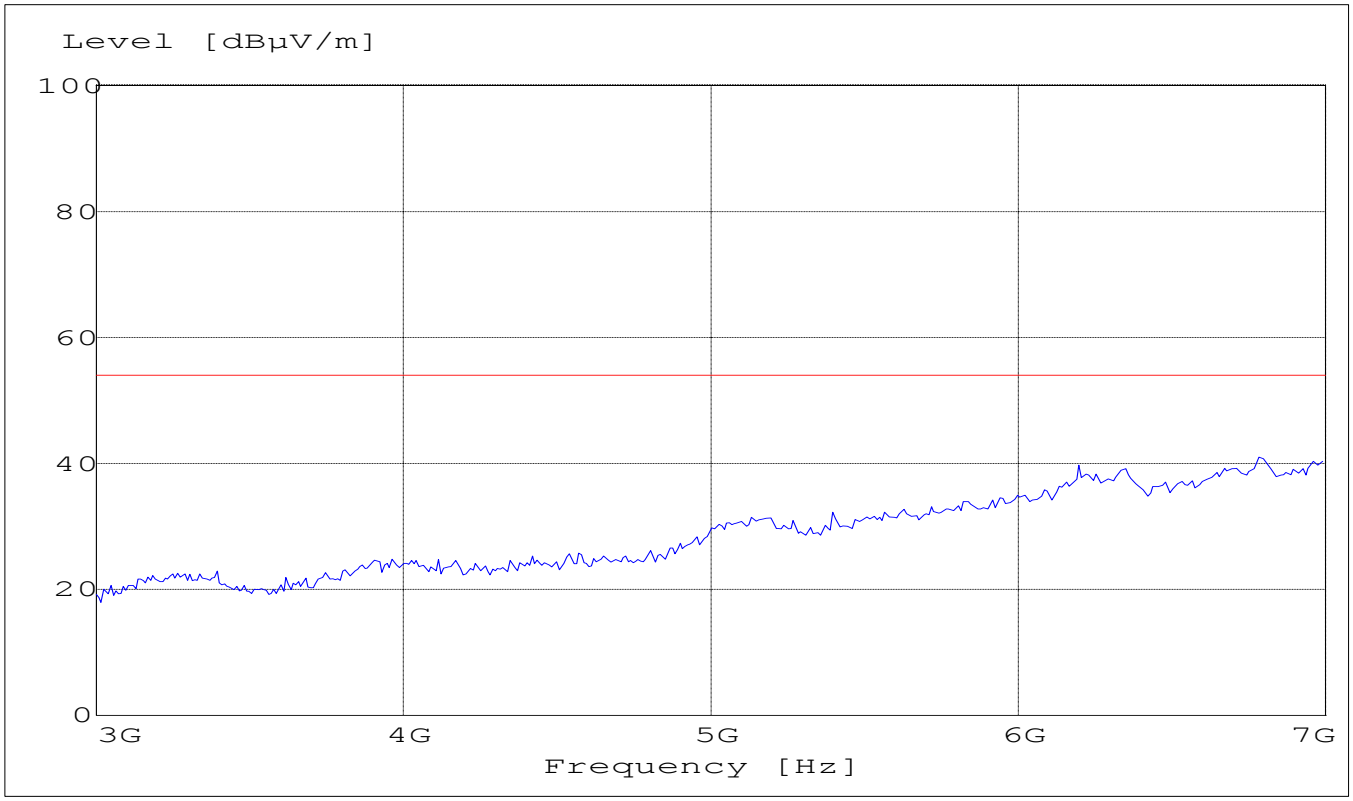


RECEIVER SPURIOUS RADIATION § 15.209

3GHz – 7GHz

SWEEP TABLE: "BT Spuri hi 3-7G"
Short Description: Bluetooth Spurious 1-3GHz

Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
3.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)

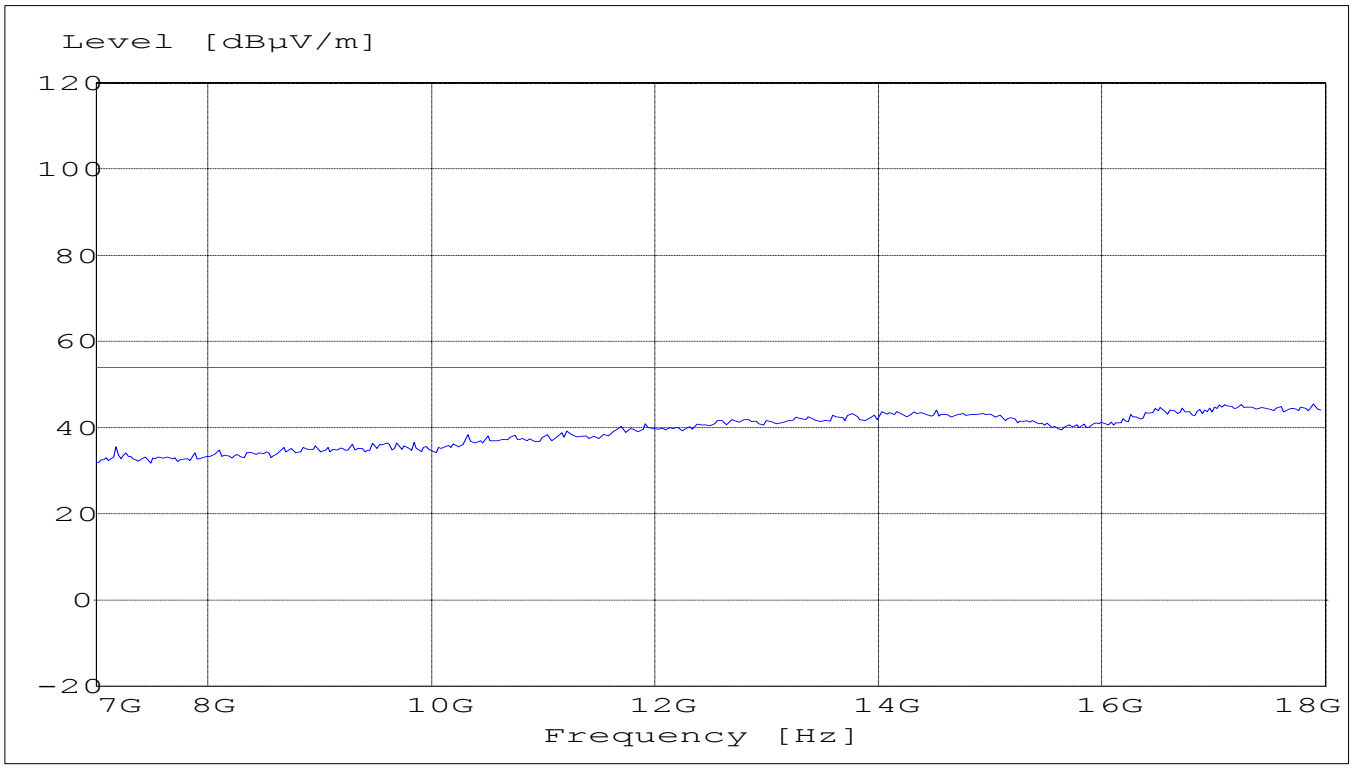


RECEIVER SPURIOUS RADIATION § 15.209

7GHz – 18GHz

SWEEP TABLE: "BT Spuri hi 7-18G"
Short Description: Bluetooth Spurious 7-18GHz

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

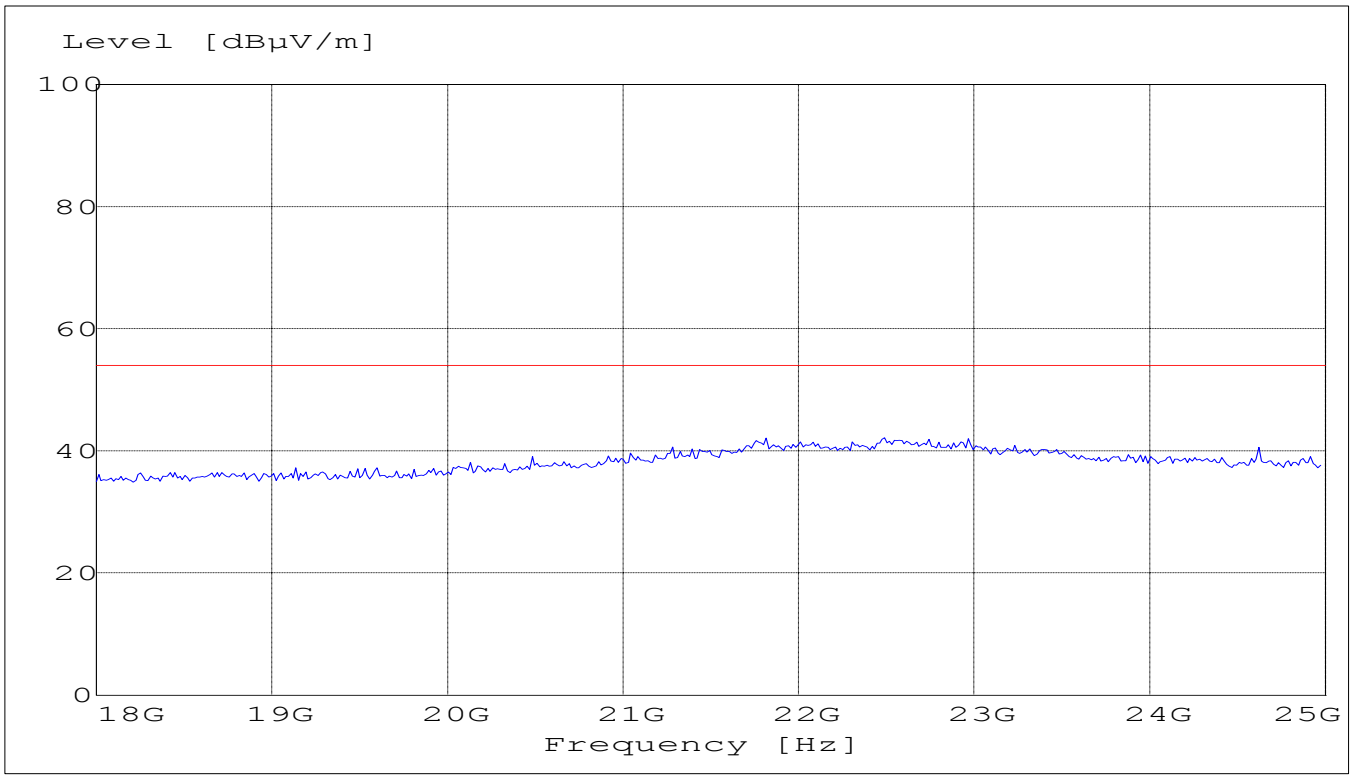


RECEIVER SPURIOUS RADIATION § 15.209

18GHz – 25GHz

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

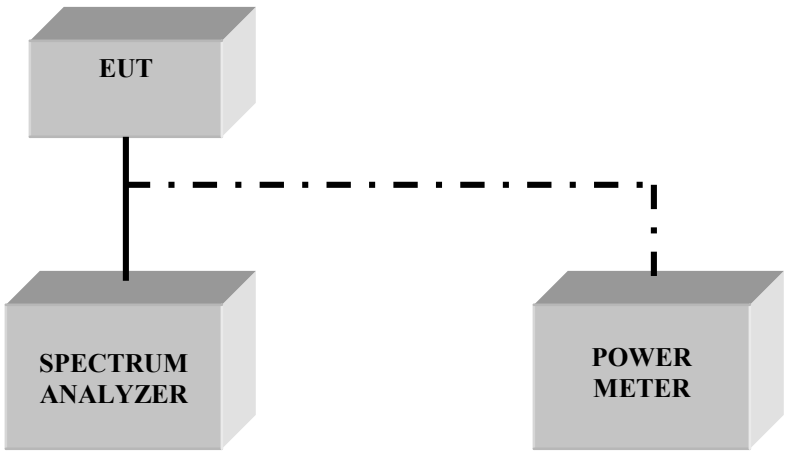
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
18 GHz	25 GHz	MaxPeak	Coupled	1 MHz	#141 horn (dBi)



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