FCC Test Report

Test report no.: EMC_544FCC15.247_2003_S24-DS_CoL

FCC Part 15.247 for DSSS systems / CANADA RSS-210

EUT: Tablet PC	**Model: iX104**
with WLAN	**Model: S24-DS**
collocated with GSM Module	**Model: 1902G**
FCC ID: Q2GIX104-116	

Deutscher Akkreditierungs Rat DAR

TTI-P-G 081/94-A0

Accredited according to **ISO/IEC 17025**

Bluetooth

Bluetooth Qualification Test Facility (BQTF)

CTIA Authorized Testing Laboratory

FCC listed # 101450

IC recognized # 3925

***CETECOM* Inc.**

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Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May

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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 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

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1.3 Details of applicant

Name	**:**	**Xplore Technologies**
Street	**:**	**14000 Summit Road, Suite 900**
City / Zip Code	**:**	**Austin, TX 78728**
Country	**:**	**USA**
Contact	**:**	**Douglas L. Fowler**
Telephone	**:**	**+1 512 336 7797**
Tele-fax	**:**	**+1 512 336 7791**
e-mail	**:**	**dfowler@xploretech.com**

1.4 Application details

Date of receipt test item	:	2003-09-02
Date of test	:	2002-09-04/05

1.5 Test item

EUT Manufacturer	:	Applicant
WLAN Manufacturer	:	Symbol Technologies, Inc.
Street	:	6480 Via Del Oro,
City / Zip Code	:	San Jose, CA 95119
Country	:	USA
GSM Module Mfg'er	:	Research In Motion Ltd.
Street	:	295 Phillip Street
City / Zip Code	:	Waterloo, Ontario
Country	:	Canada
Model No. (EUT)	:	iX104
Model No. (WLAN)	:	S24-DS
Model No. (GSM module)	:	1902G
Description	:	802.11b wireless LAN PCMCIA card Collocated with GSM module in Tablet PC
FCC ID	:	Q2GIX104-116

Additional information

Frequency	:	2412MHz – 2462MHz for WLAN 824.2MHz – 848.8MHz for GSM 850, 1850.2MHz – 1909.8MHz for PCS 1900
Type of modulation	:	DSSS for WLAN GMSK for GSM
Number of channels	:	11 for WLAN 124 for GSM-850, 299 for PCS-1900
Antenna	:	Embedded
Output power	:	0.135W conducted peak power
Extreme temp. Tolerance	:	-20°C to +60°C

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

NOTE: This test report covers only radiated testing done on Tablet PC model# iX104 with WLAN model# S24-DS collocated with GSM module model# 1902G. For all RF Conducted measurements on WLAN please refer to test report# J20008658d

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
2003-10-03	EMC & Radio	Siegfried Lehmann (Manager)	

Responsible for test report and project leader:

Date	Section	Name	Signature
2003-10-03	EMC & Radio	Harpreet Sidhu (EMC Engineer)	

2.2 Test report

TEST REPORT

Test report no.: EMC_544FCC15.247_2003_S24-DS_CoL

EUT: Tablet PC **Model: iX104**
with WLAN **Model: S24-DS**
collocated with GSM Module **Model: 1902G**
FCC ID: Q2GIX104-116

TEST REPORT REFERENCE

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

EIRP:

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
Frequency (MHz)		2412	2437	2462
T_{nom}(23)°C	V_{nom}	*18.12	*18.42	*18.11
Measurement uncertainty		±0.5dBm		

***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 0.8dB was added to low, mid& high channel measurements respectively)

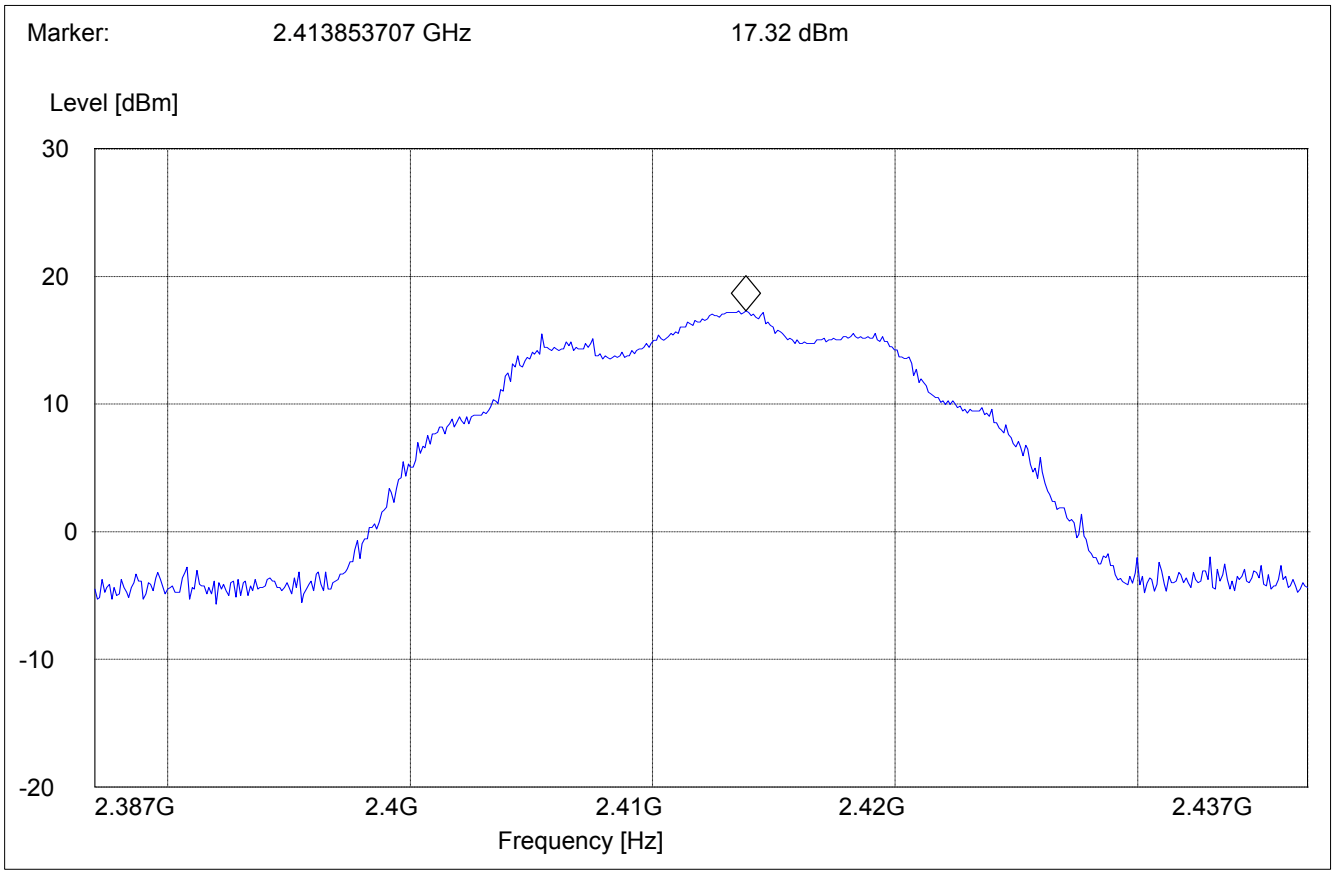
LIMIT **SUBCLAUSE § 15.247 (b) (1)**

Frequency range	RF power output
2400-2483.5 MHz	≤30dBm Conducted ≤36dBm Radiated (EIRP)

ANALYZER SETTINGS: RBW=VBW=10MHz

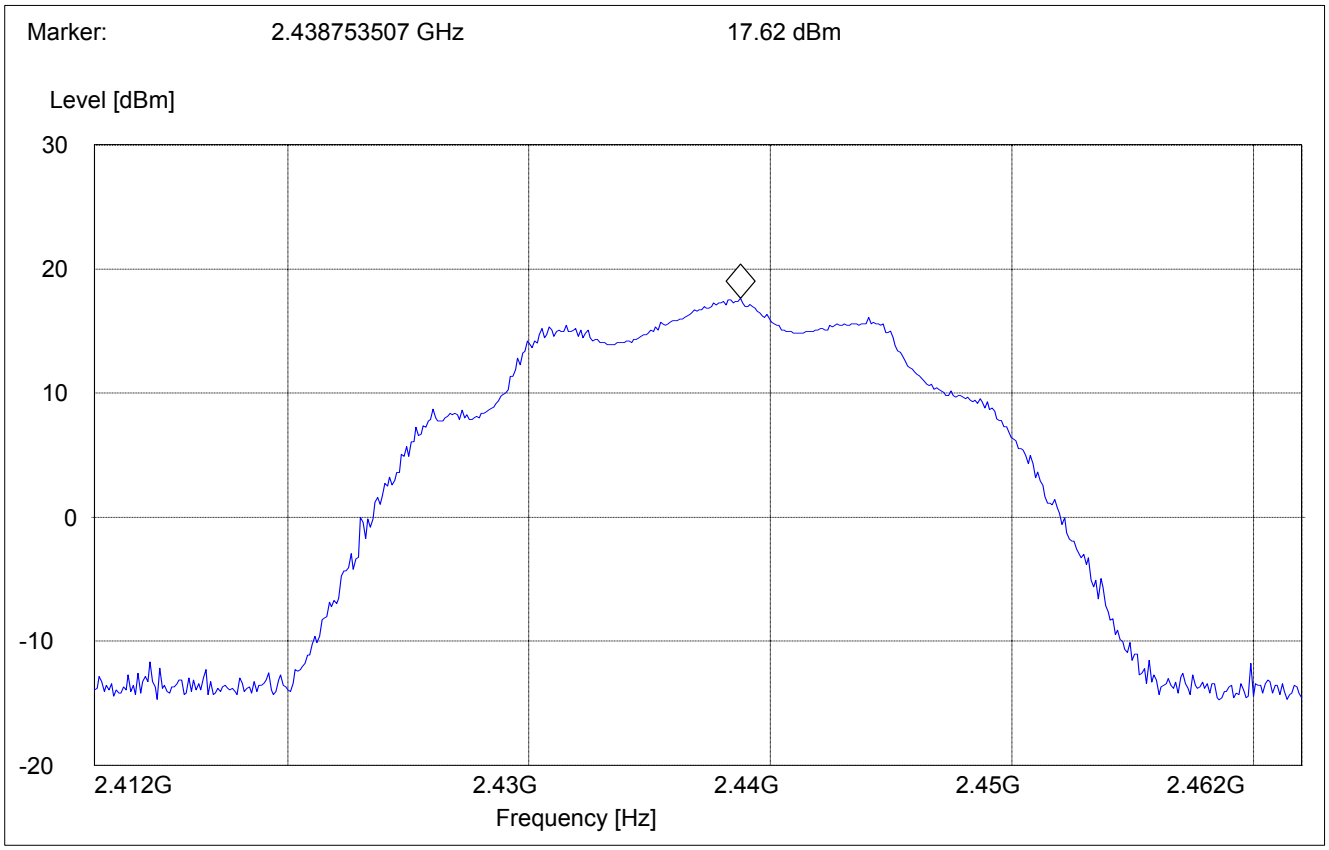
MAXIMUM PEAK OUTPUT POWER (RADIATED) **§ 15.247 (b) (1)**

Low Channel (2412MHz)



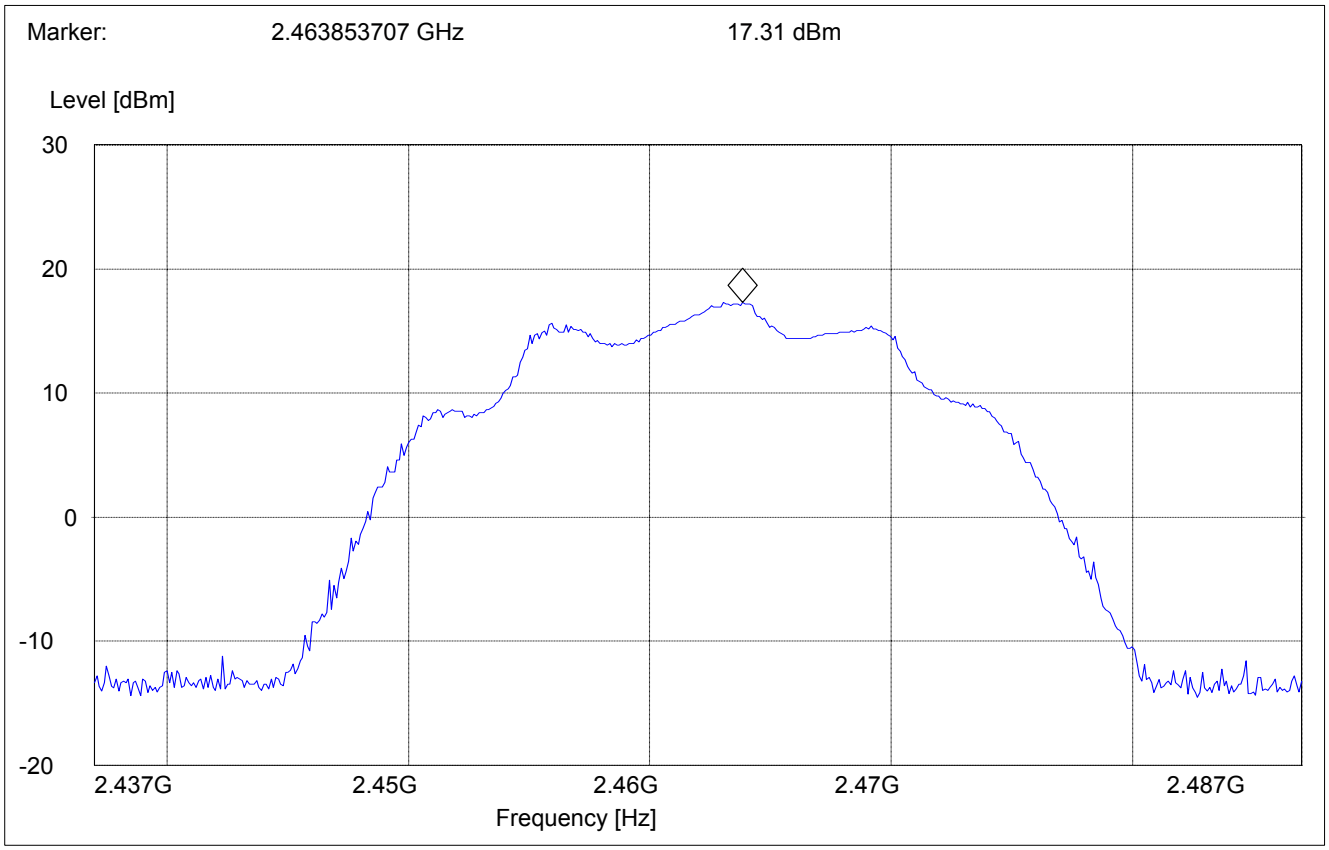
MAXIMUM PEAK OUTPUT POWER (RADIATED) **§ 15.247 (b) (1)**

Mid Channel (2437MHz)



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

High Channel (2462MHz)

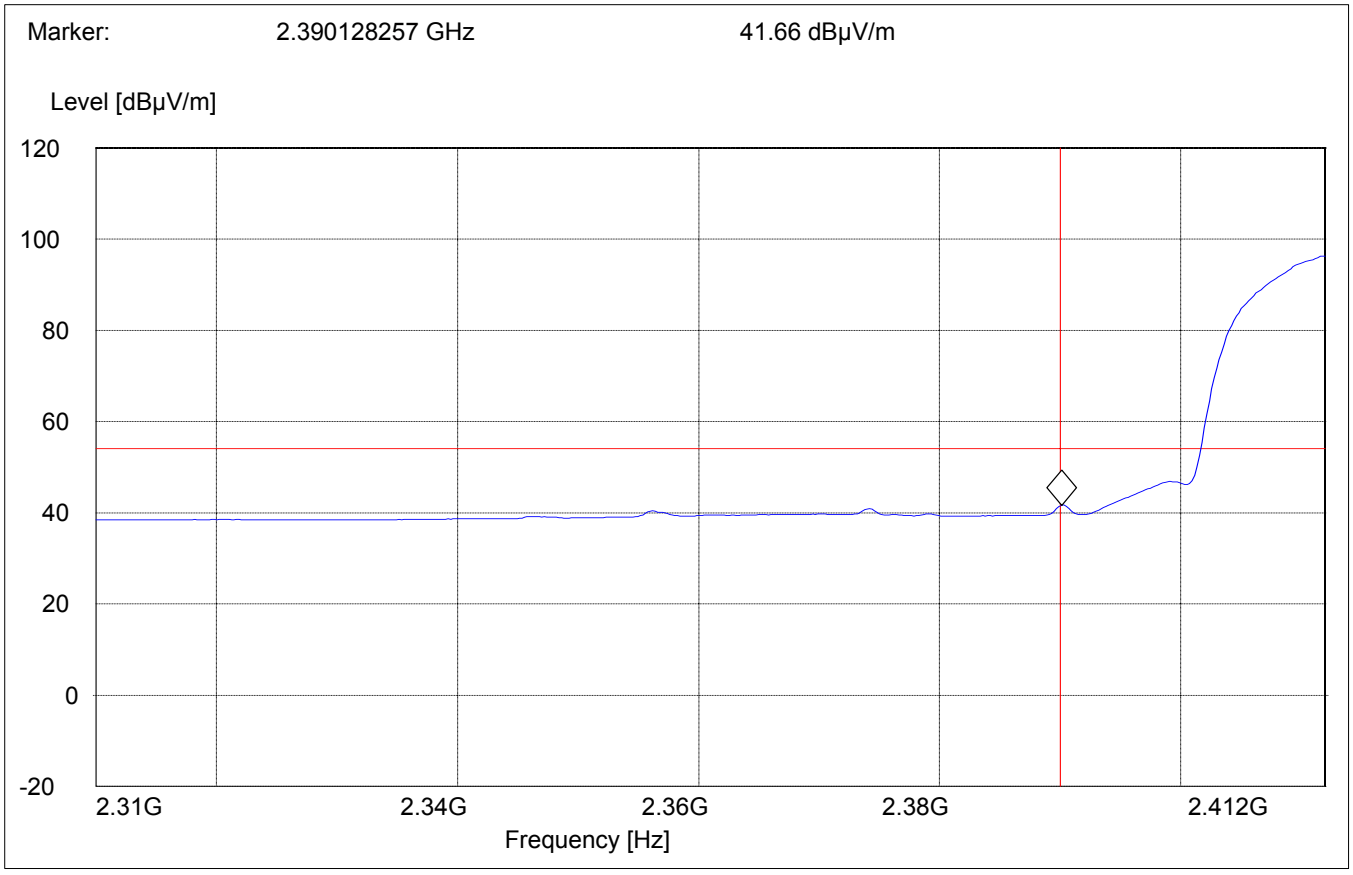


BAND EDGE COMPLIANCE (WLAN Alone) §15.247 (c)

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

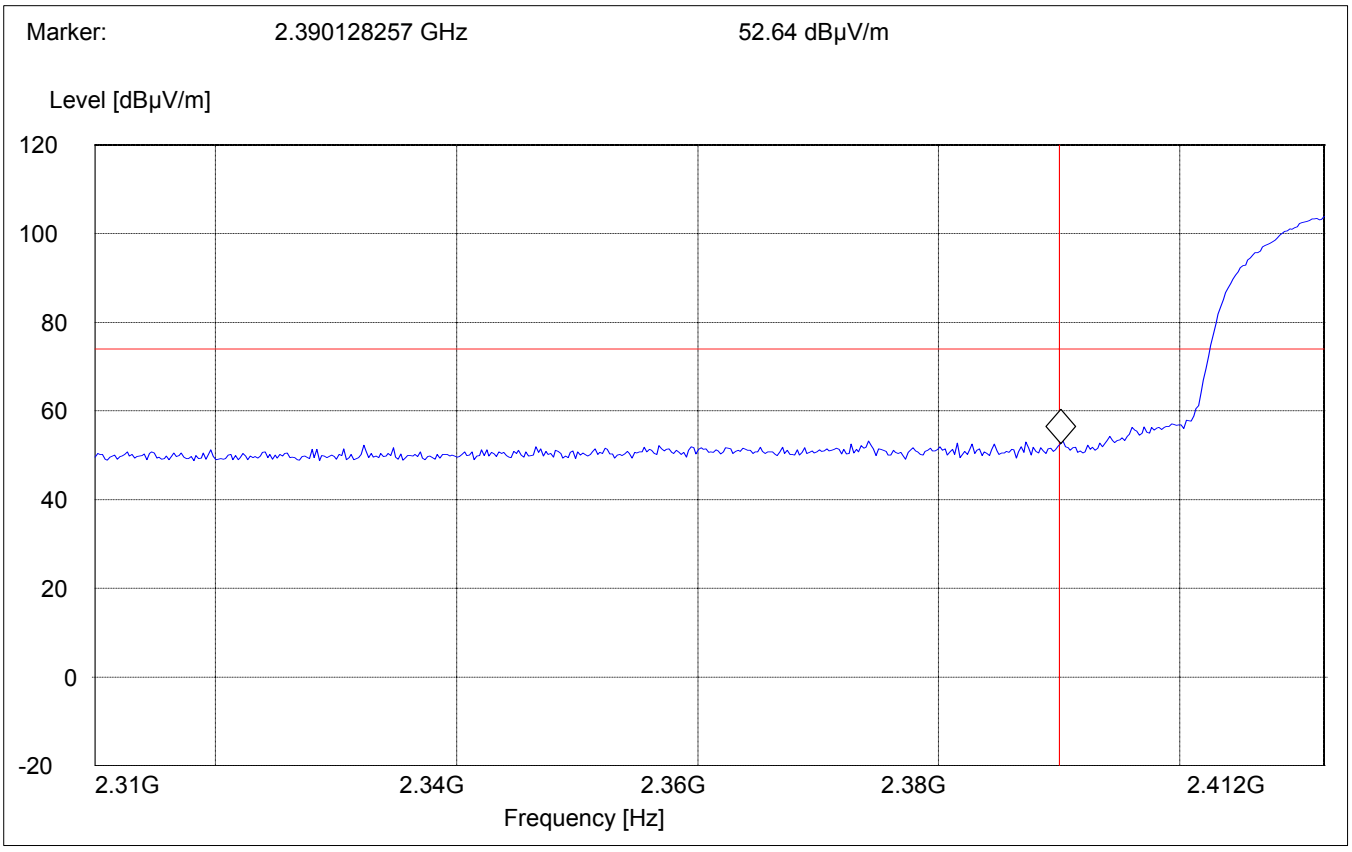


BAND EDGE COMPLIANCE §15.247 (c)

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

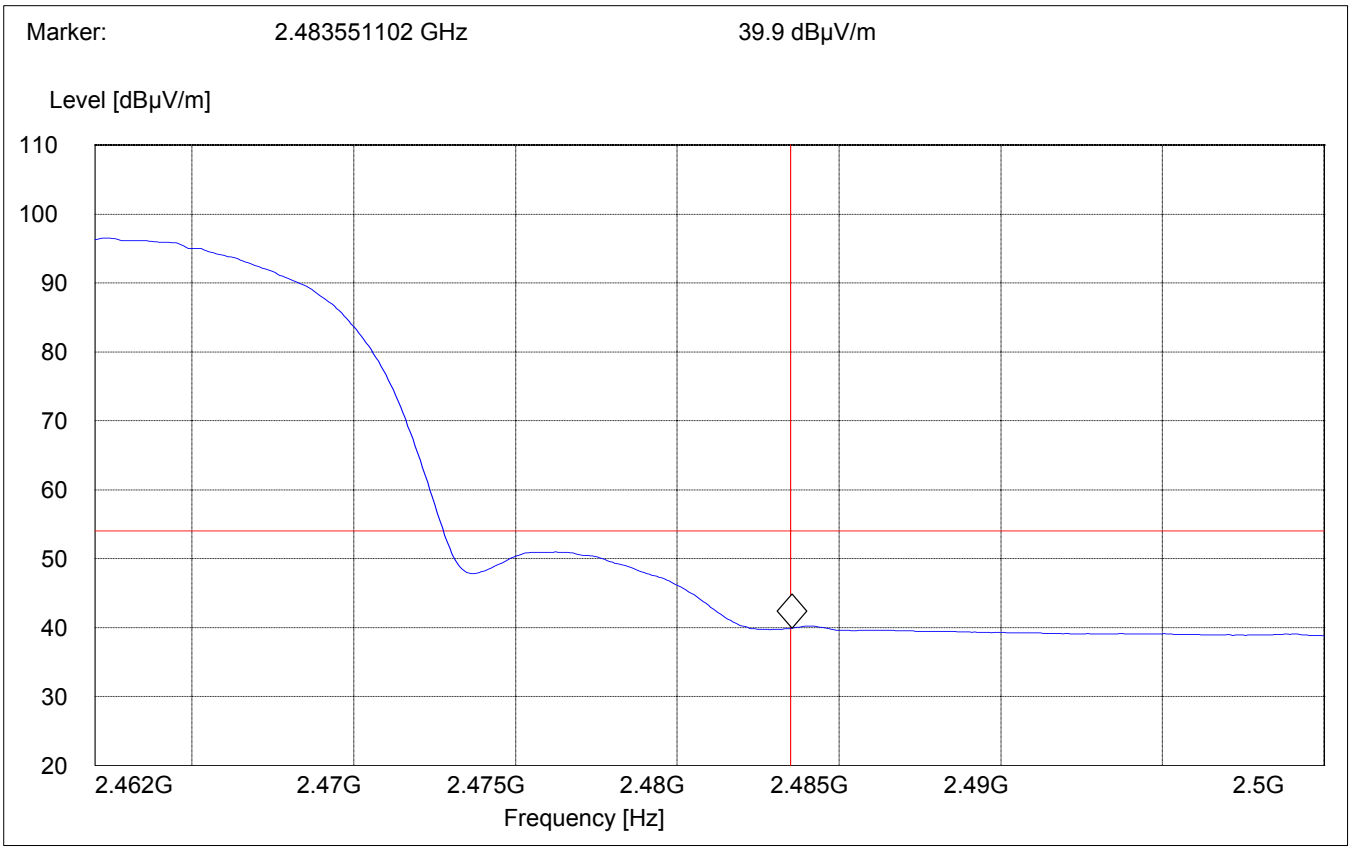


BAND EDGE COMPLIANCE §15.247 (c)

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

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)

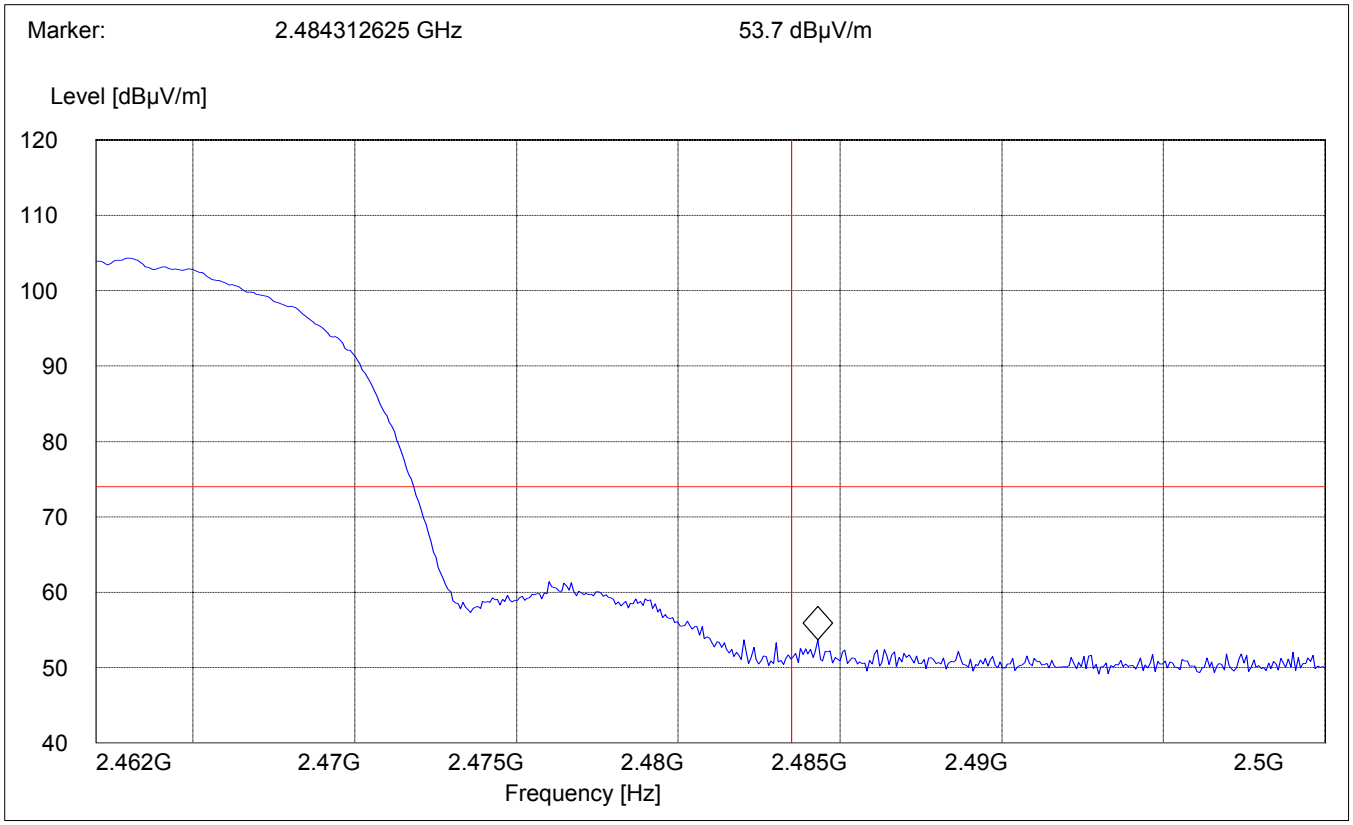


BAND EDGE COMPLIANCE §15.247 (c)

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

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)



BAND EDGE COMPLIANCE (GSM850 Collocated) §15.247 (c)

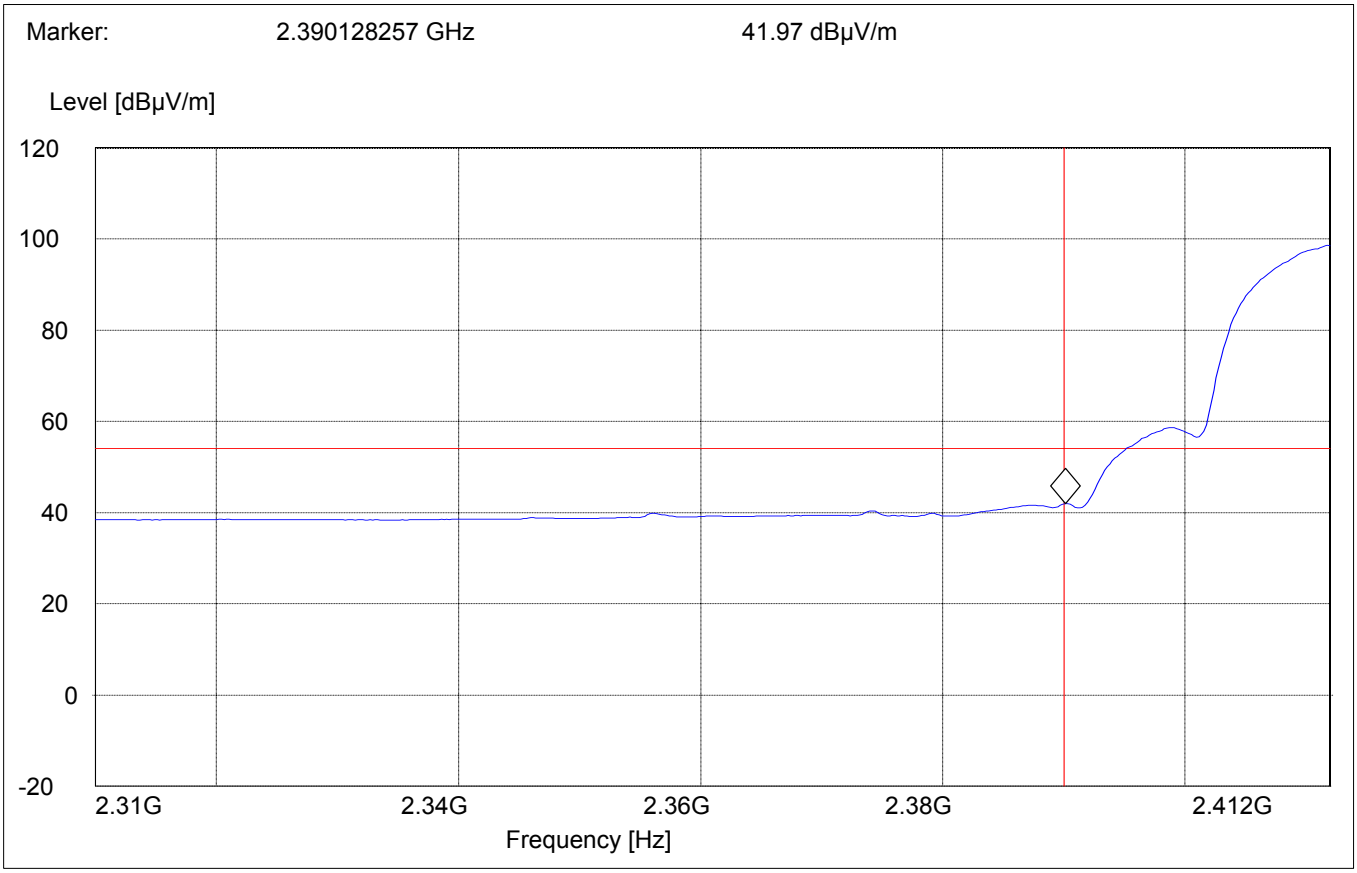
WLAN Collocated with GSM Module 850MHz band

GSM 850 Tx @ ch-128

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

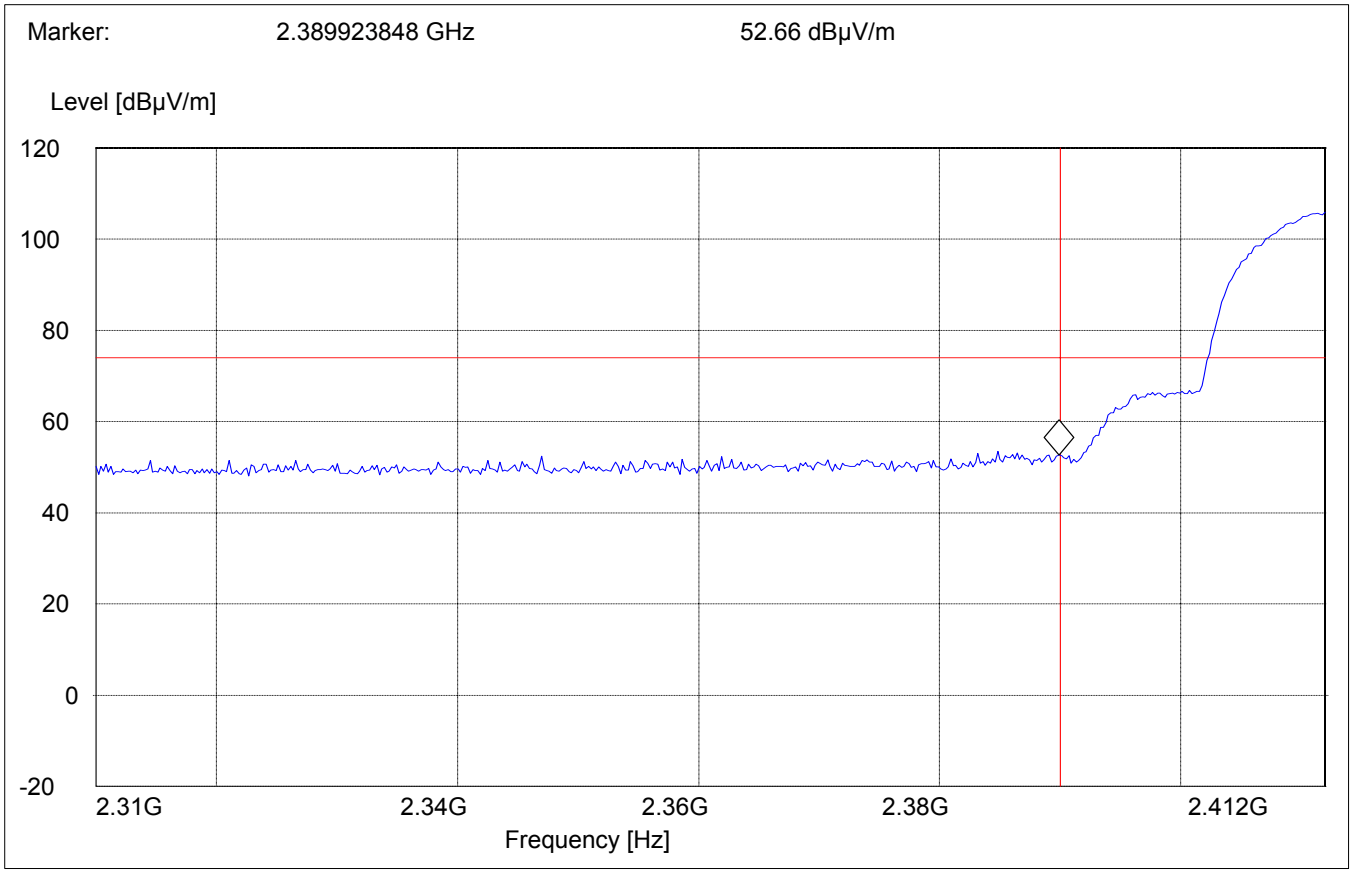


BAND EDGE COMPLIANCE §15.247 (c)
GSM 850 Tx @ ch-128

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)

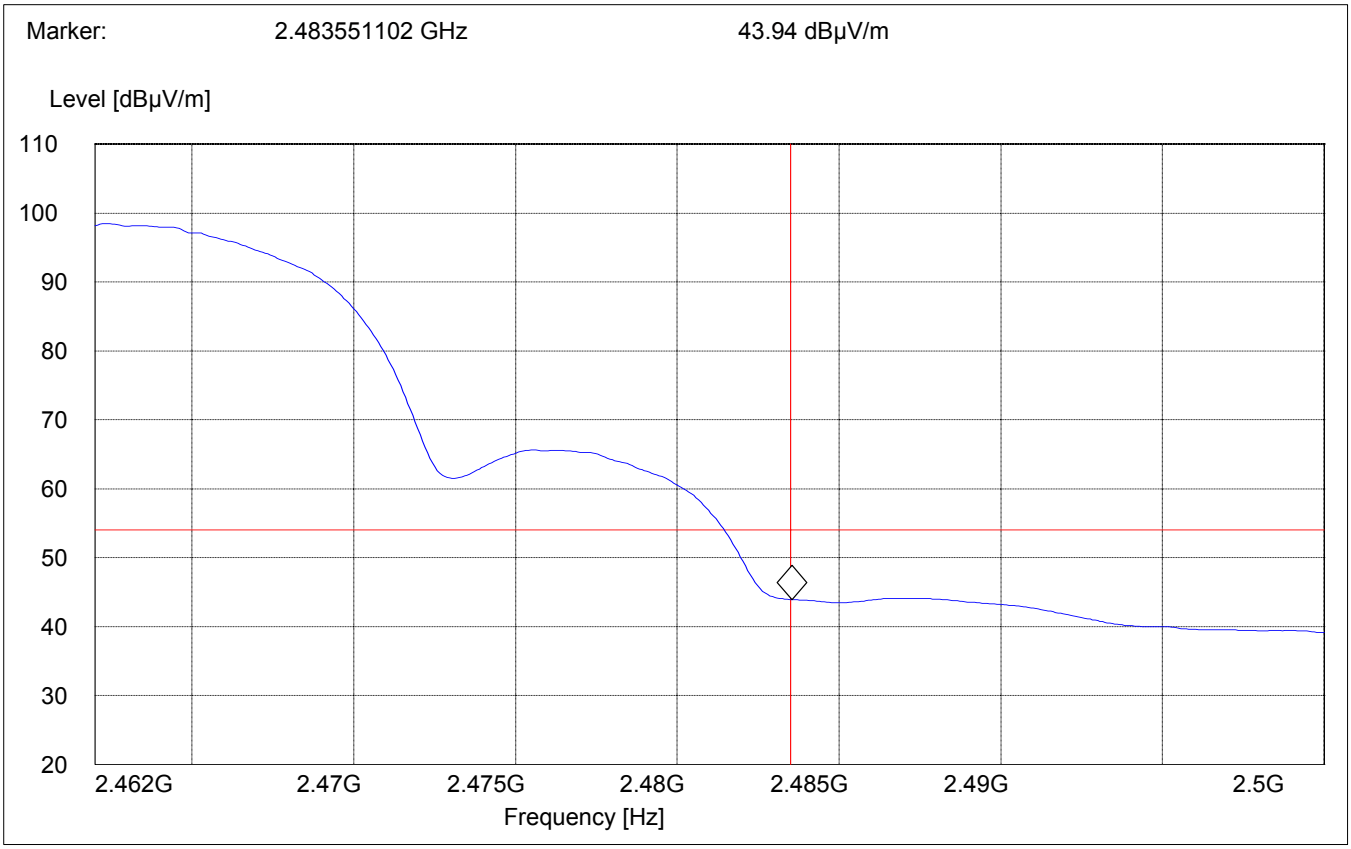


BAND EDGE COMPLIANCE **§15.247 (c)**
GSM 850 Tx @ ch-251

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

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)

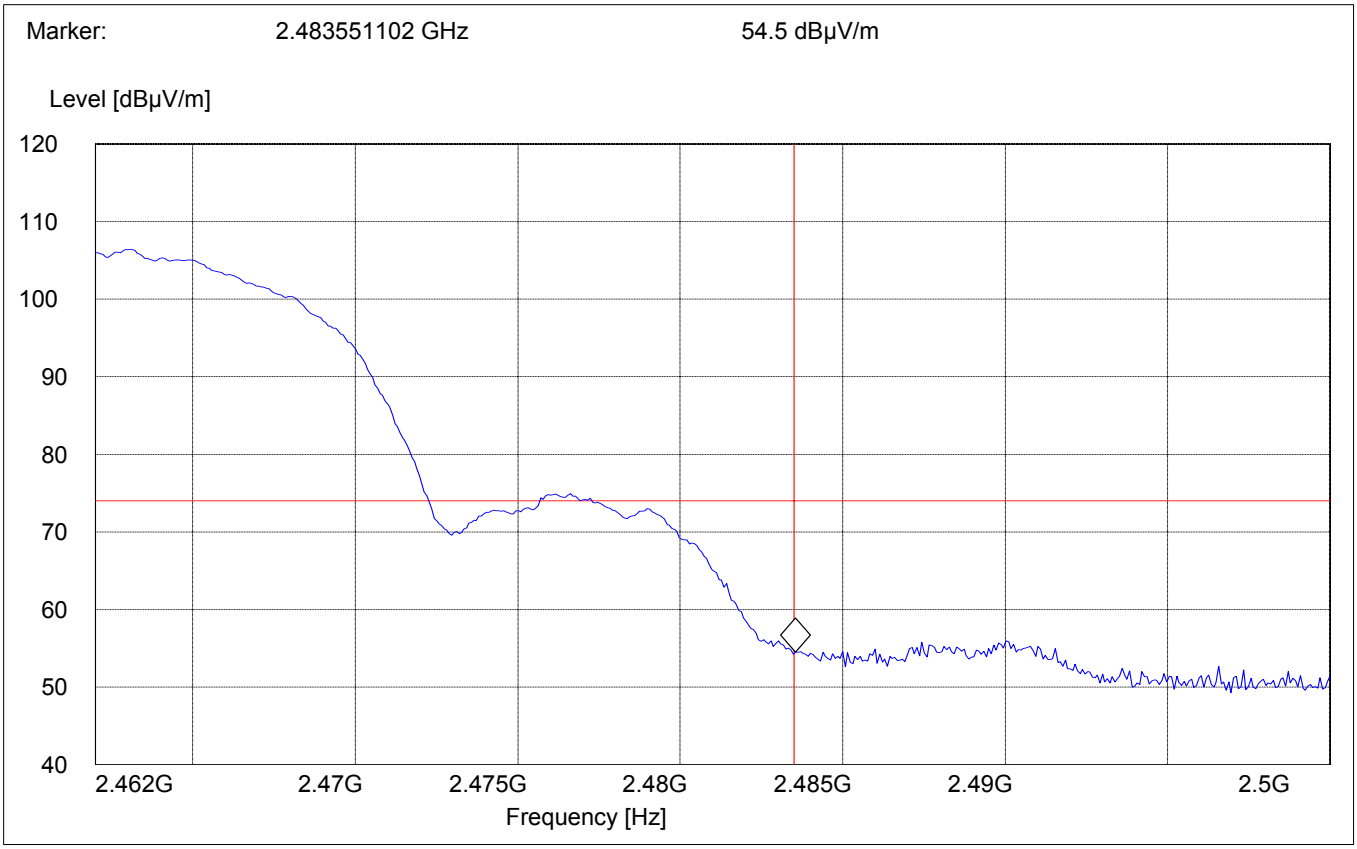


BAND EDGE COMPLIANCE **§15.247 (c)**
GSM 850 Tx @ ch-251

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

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)



BAND EDGE COMPLIANCE (GSM 1900 Collocated) §15.247 (c)

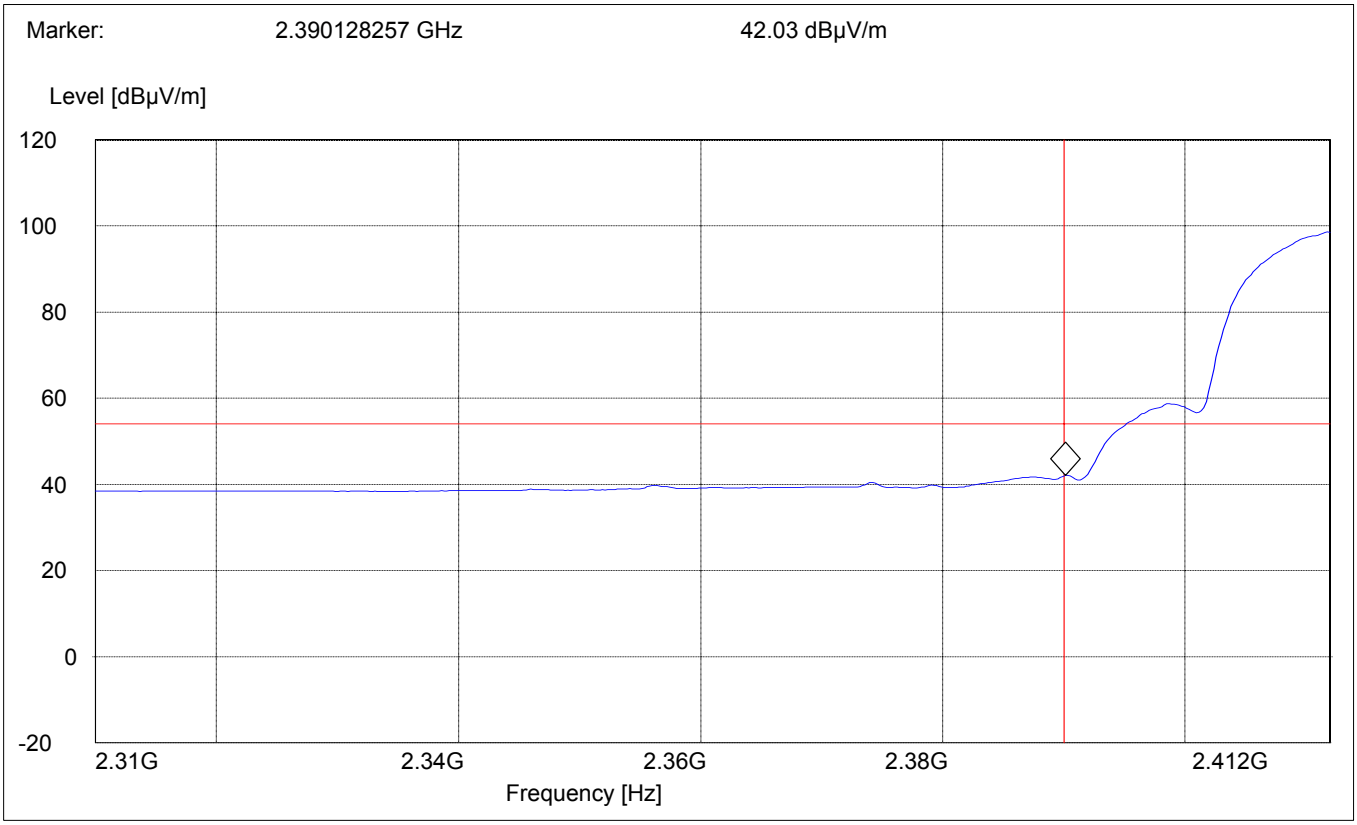
WLAN Collocated with GSM Module 1900MHz band

GSM 1900 Tx @ ch-512

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

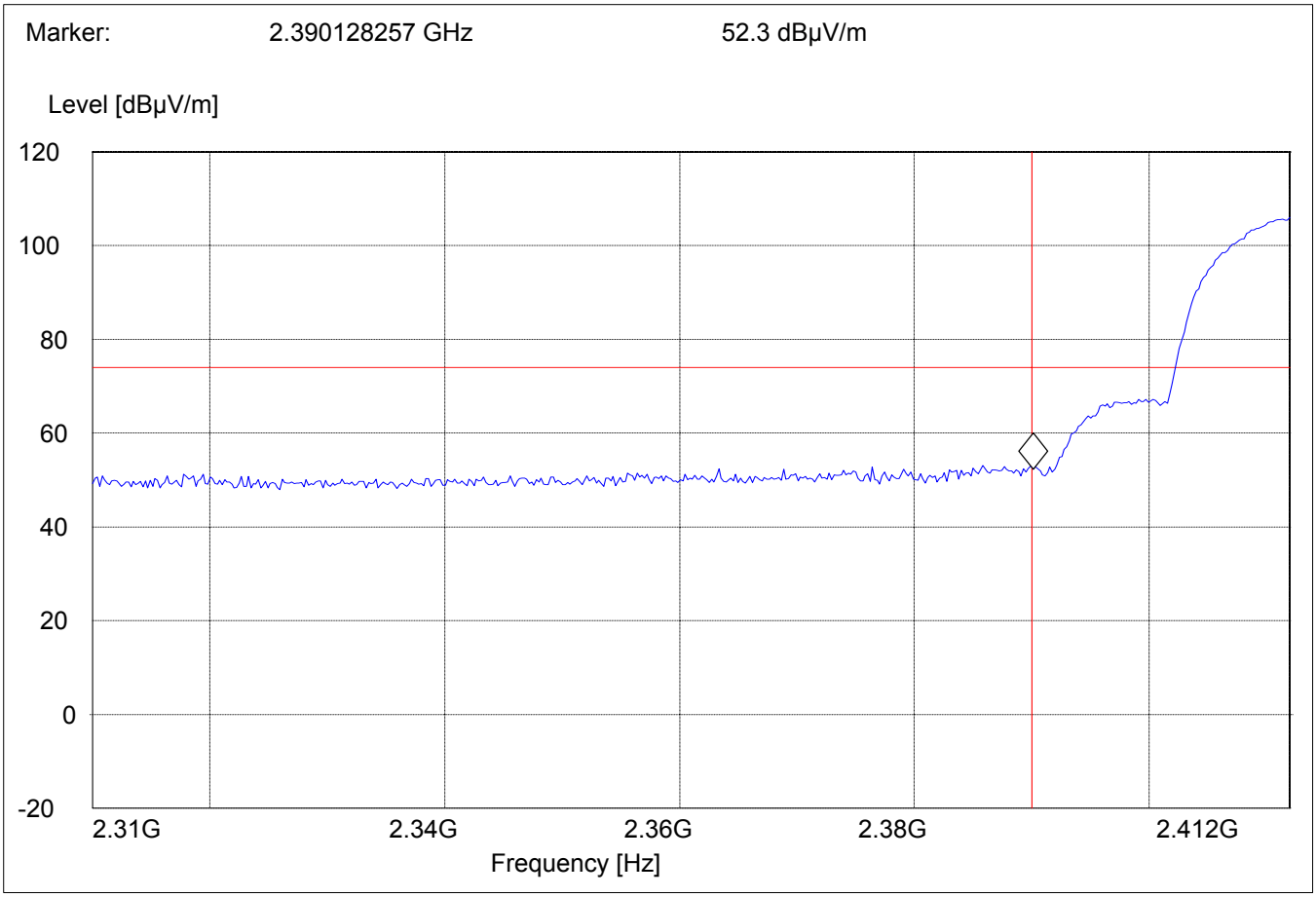


BAND EDGE COMPLIANCE **§15.247 (c)**
GSM 1900 Tx @ ch-512

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)

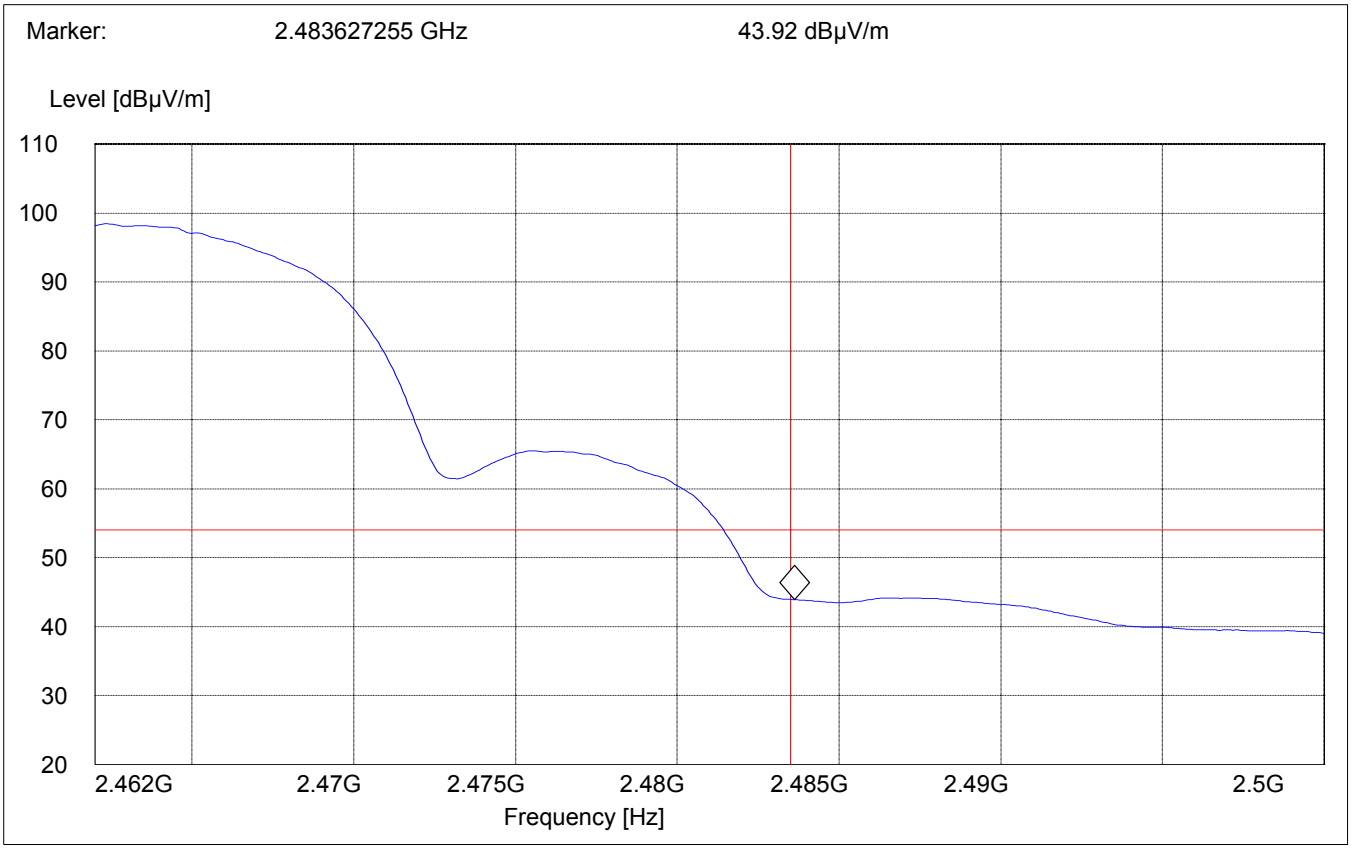


BAND EDGE COMPLIANCE §15.247 (c)
GSM 1900 Tx @ ch-810

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

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)

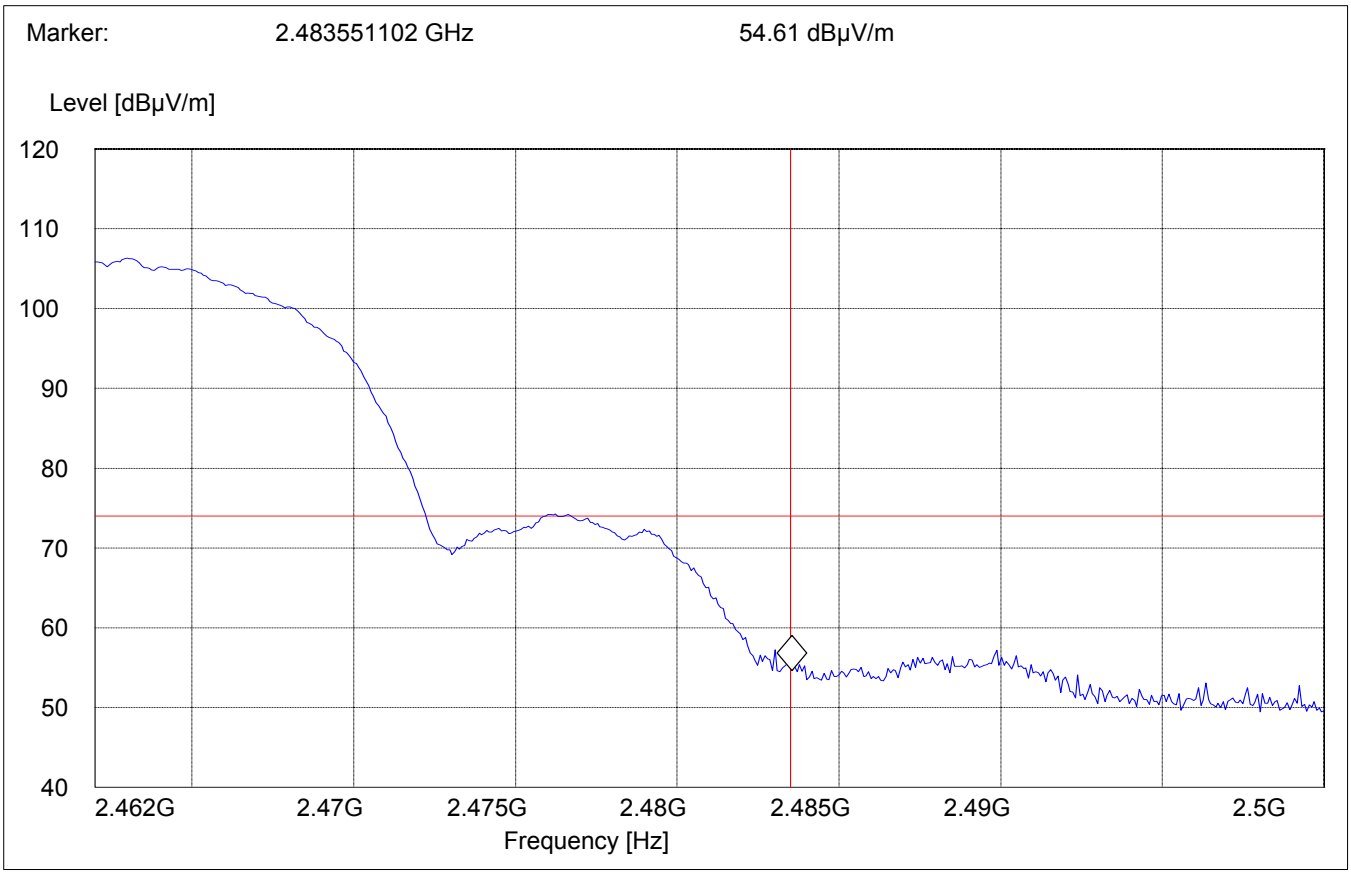


BAND EDGE COMPLIANCE **§15.247 (c)**
GSM 1900 Tx @ ch-810

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

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 (WLAN Alone) **§ 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 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)

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
See plots			

Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
See plots			

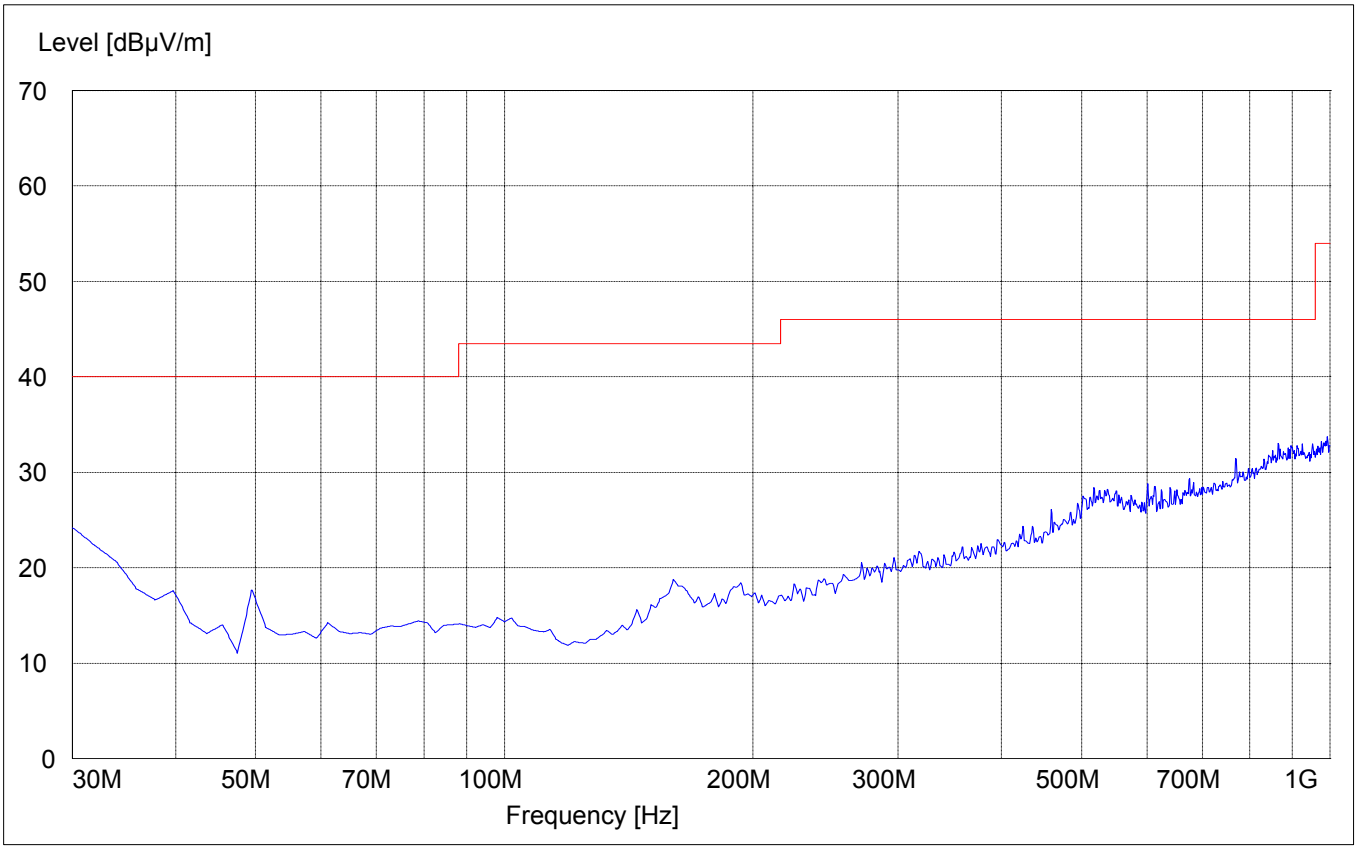
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
See plots			

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

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

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

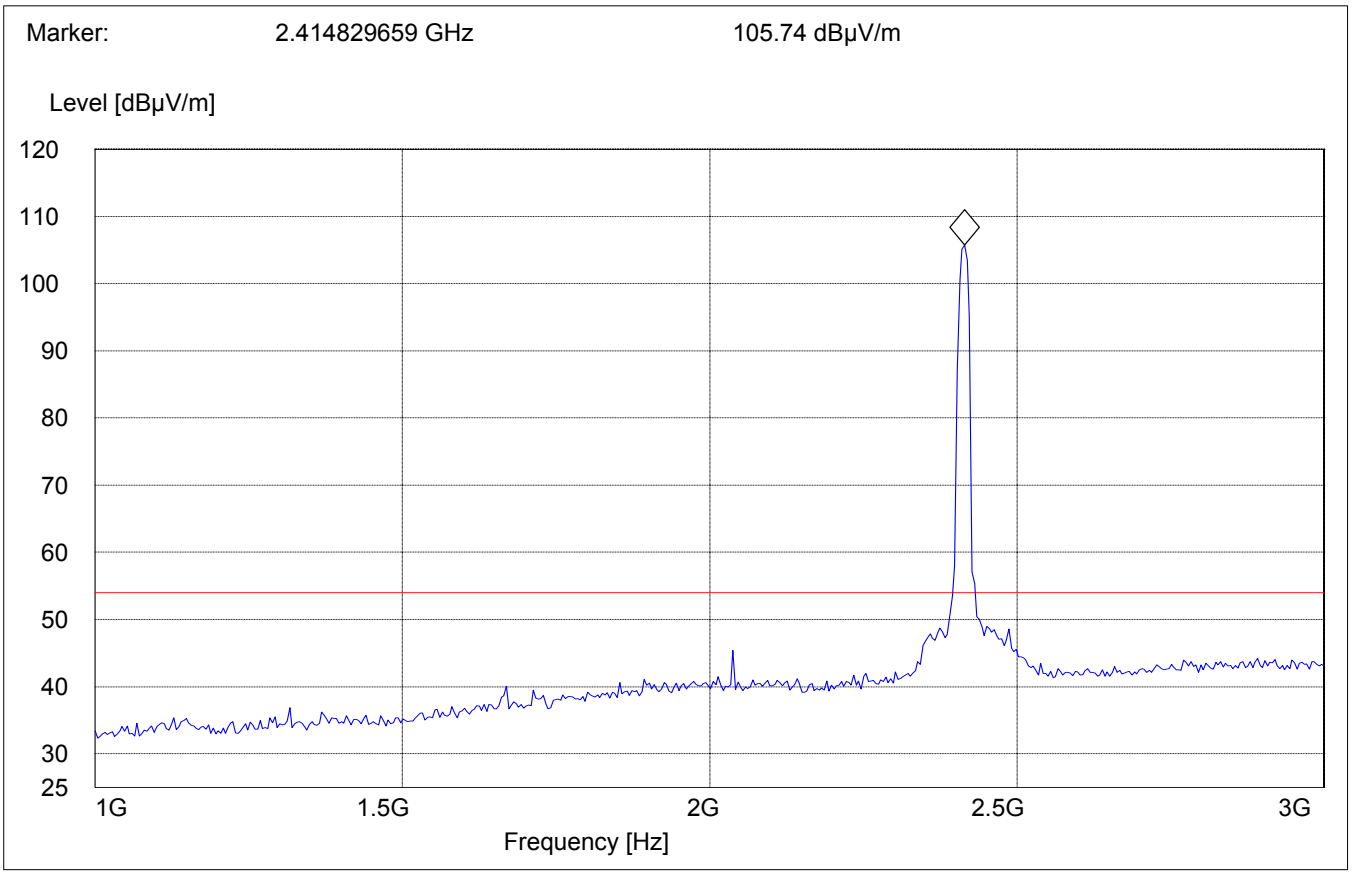
Start Frequency	Stop Frequency	Detector	Meas. Time	RBW VBW	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186



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

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

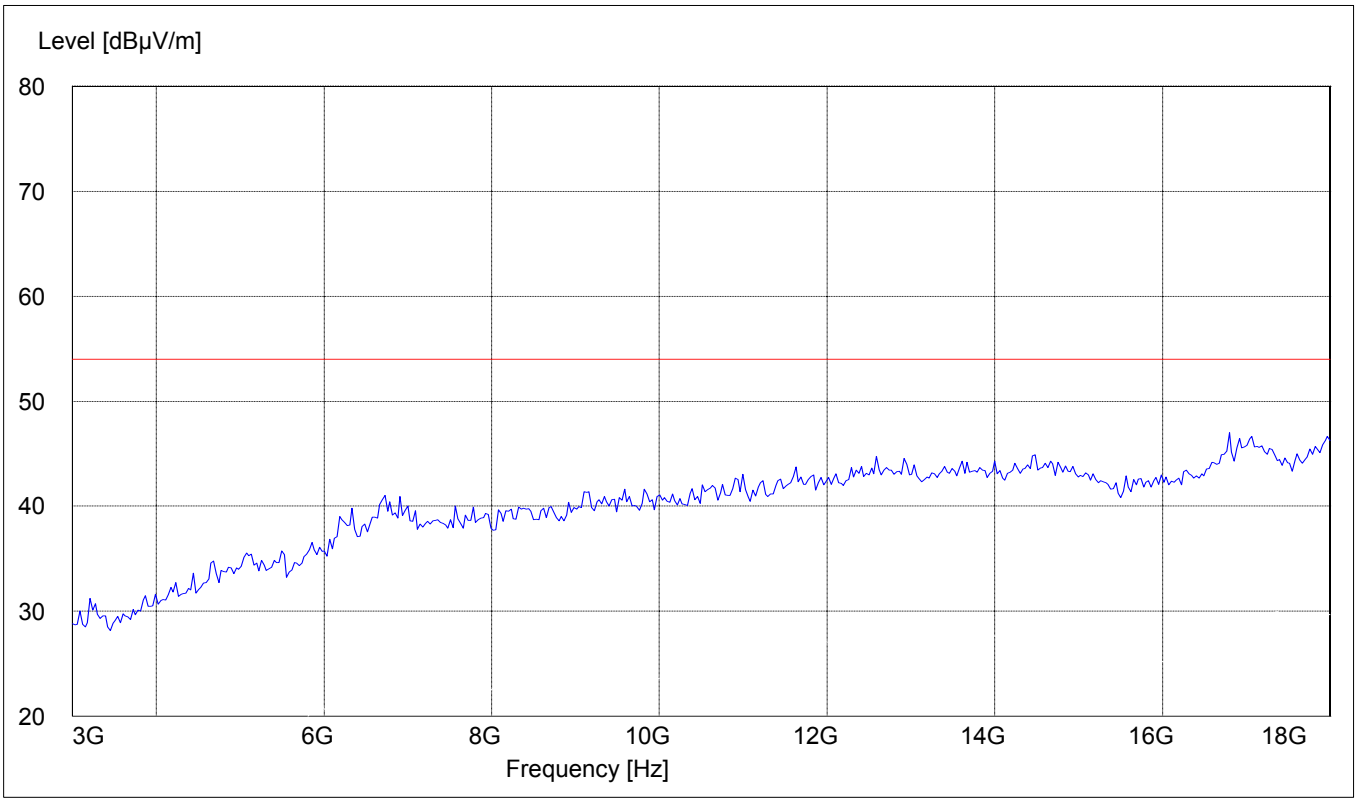
SWEEP TABLE:		"BT Spuri hi 1-3G"				
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel (2412MHz): 3GHz – 18GHz

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

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

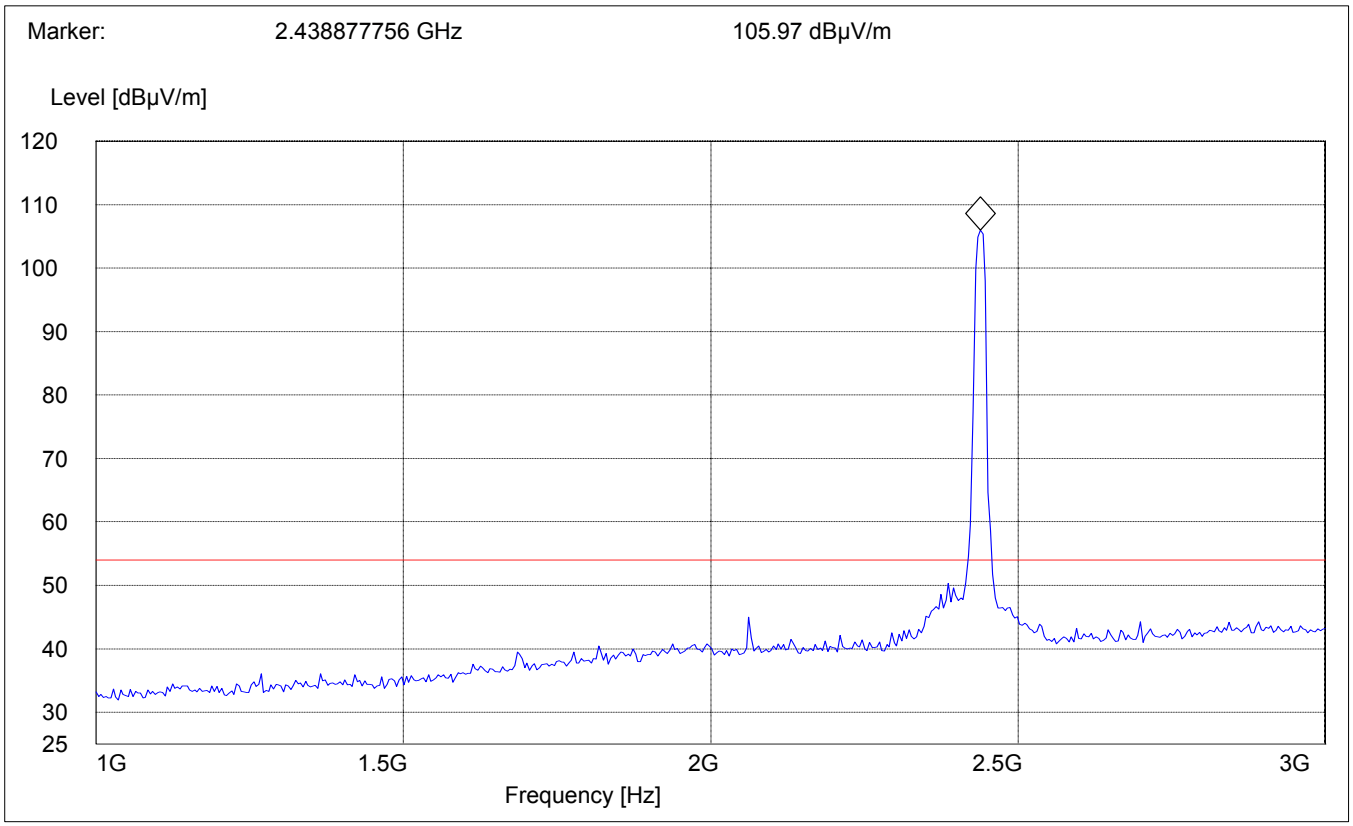


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Mid Channel (2437MHz): 1GHz – 3GHz

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

SWEEP TABLE: "BT Spuri hi 1-3G"

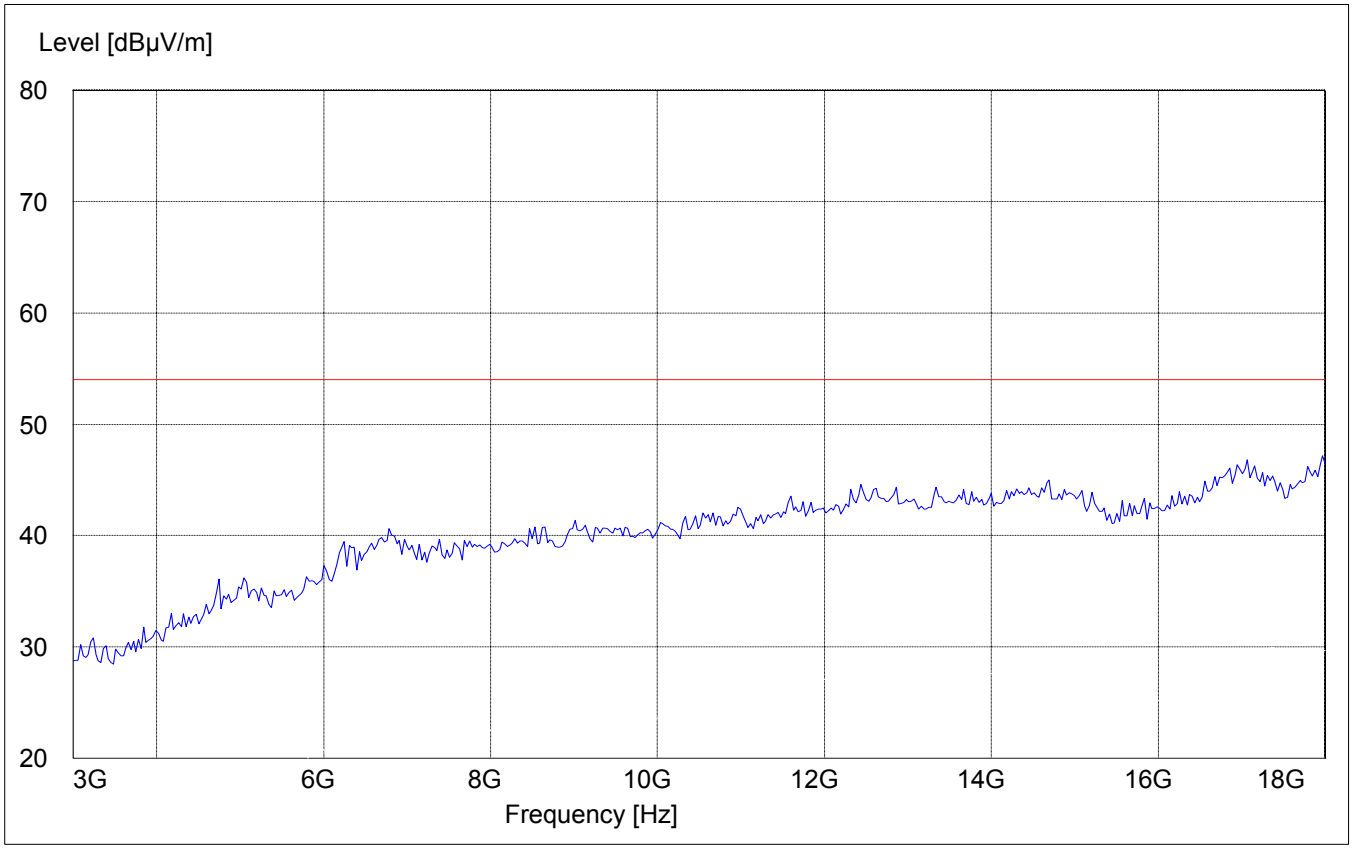
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Mid Channel (2437MHz): 3GHz – 18GHz

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

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

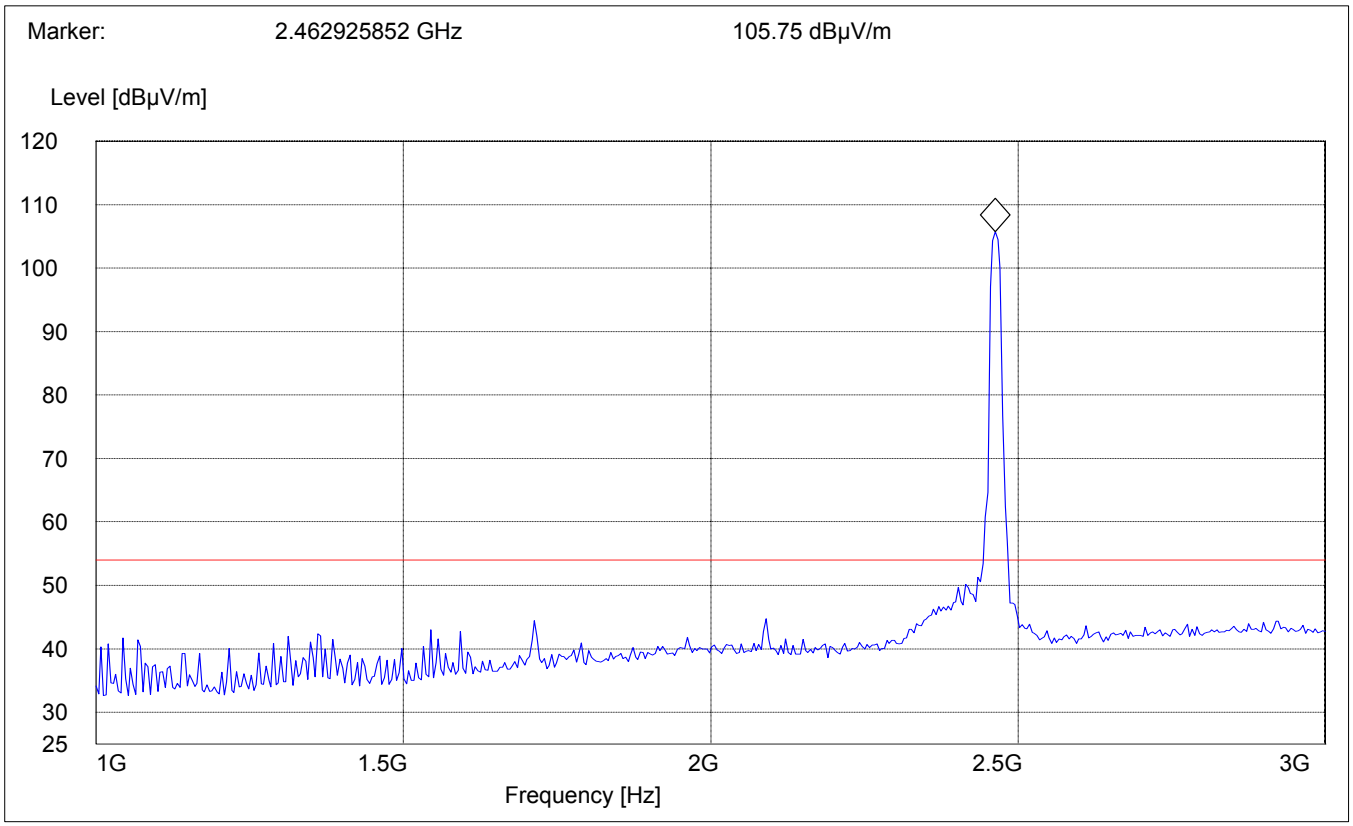


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel (2462MHz): 1GHz – 3GHz

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

SWEEP TABLE: "BT Spuri hi 1-3G"

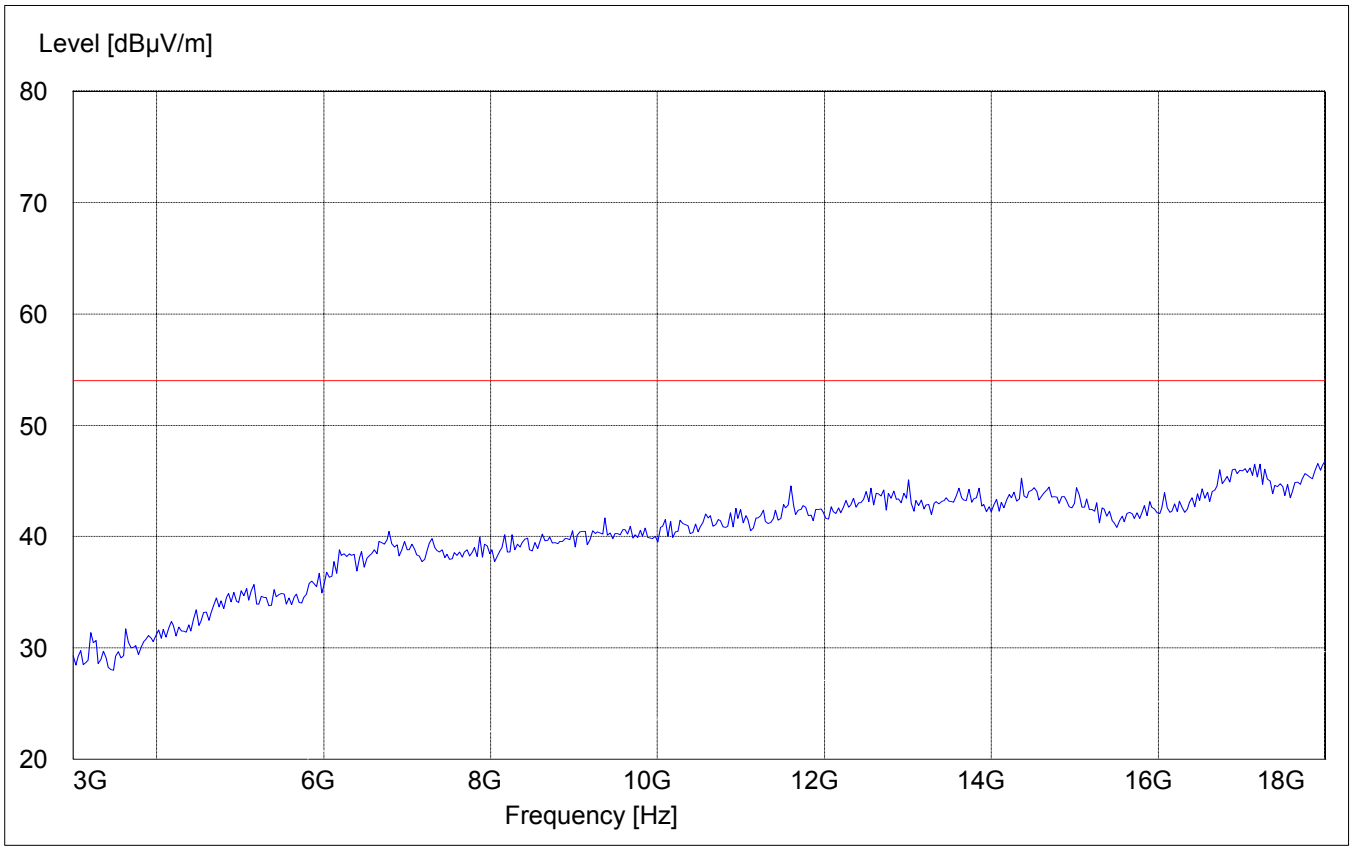
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel (2462MHz): 3GHz – 18GHz

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

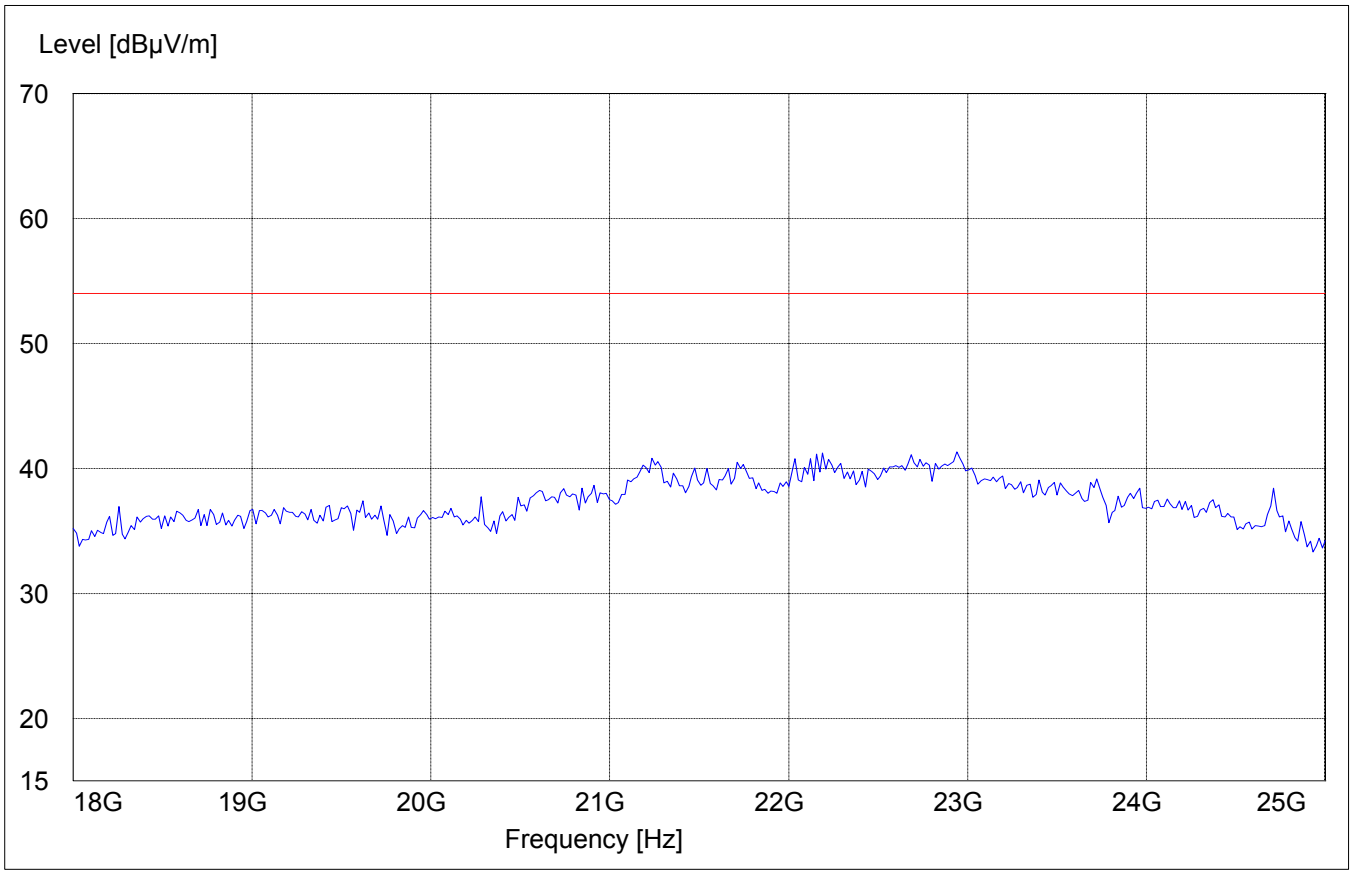
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
18GHz – 25GHz
Note: This plot is valid for low, mid, high channels (worst-case plot)

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

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



EMISSION LIMITATIONS (GSM850 Collocated) **§ 15.247 (c) (1)**
Transmitter (Radiated)
WLAN Collocated with GSM Module 850MHz band

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
1649.3	50.2		
2474.9	63.9		
3210.42	42.06		

Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average

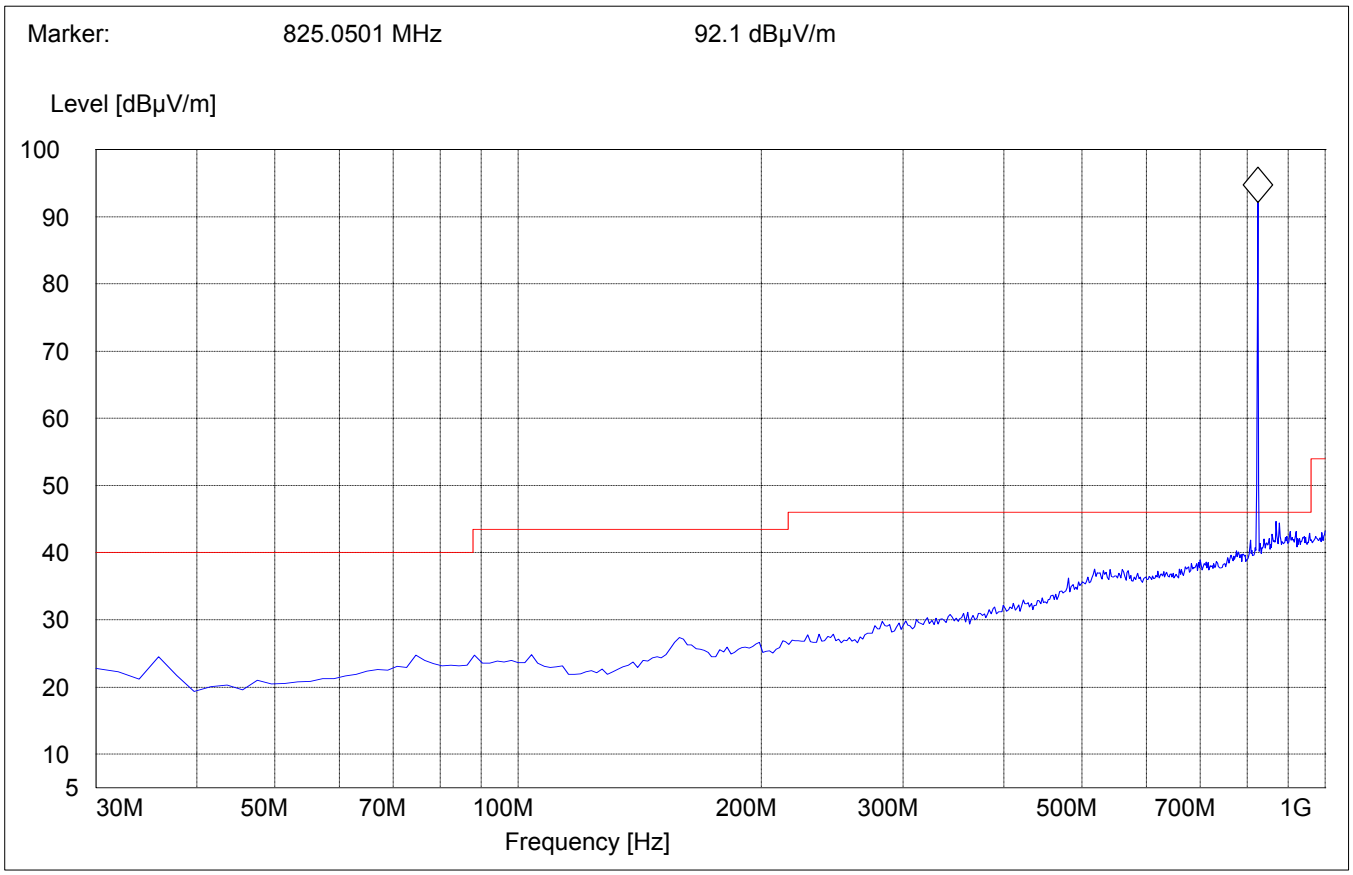
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average

EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel (2412MHz): 30MHz – 1GHz
GSM 850 Tx @ ch-128

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

SWEEP TABLE:		"BT Spuri hi 30-1G"			
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 is valid for low, mid, high channels (worst-case plot)
The peak above the limit line is the GSM 850 carrier freq.

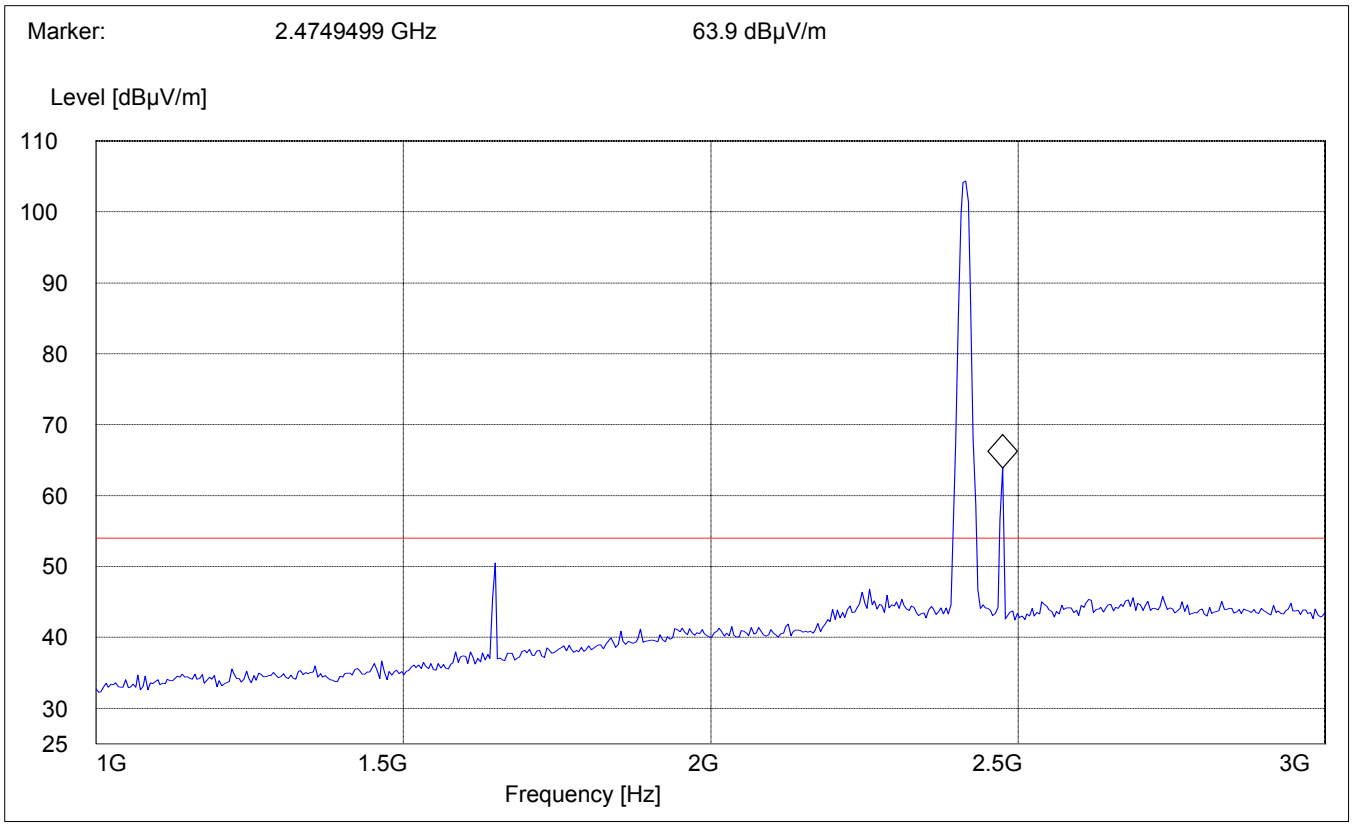


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel (2412MHz): 1GHz – 3GHz
GSM 850 Tx @ ch-128

Note:

- **This plot is valid for low, mid, high channels (worst-case plot)**
- **The marked peak is 3rd harmonic of GSM 850 TCH 128 (GSM Tx is exempt from part 15 limits) and peak above the limit line is the carrier freq. WLAN**

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

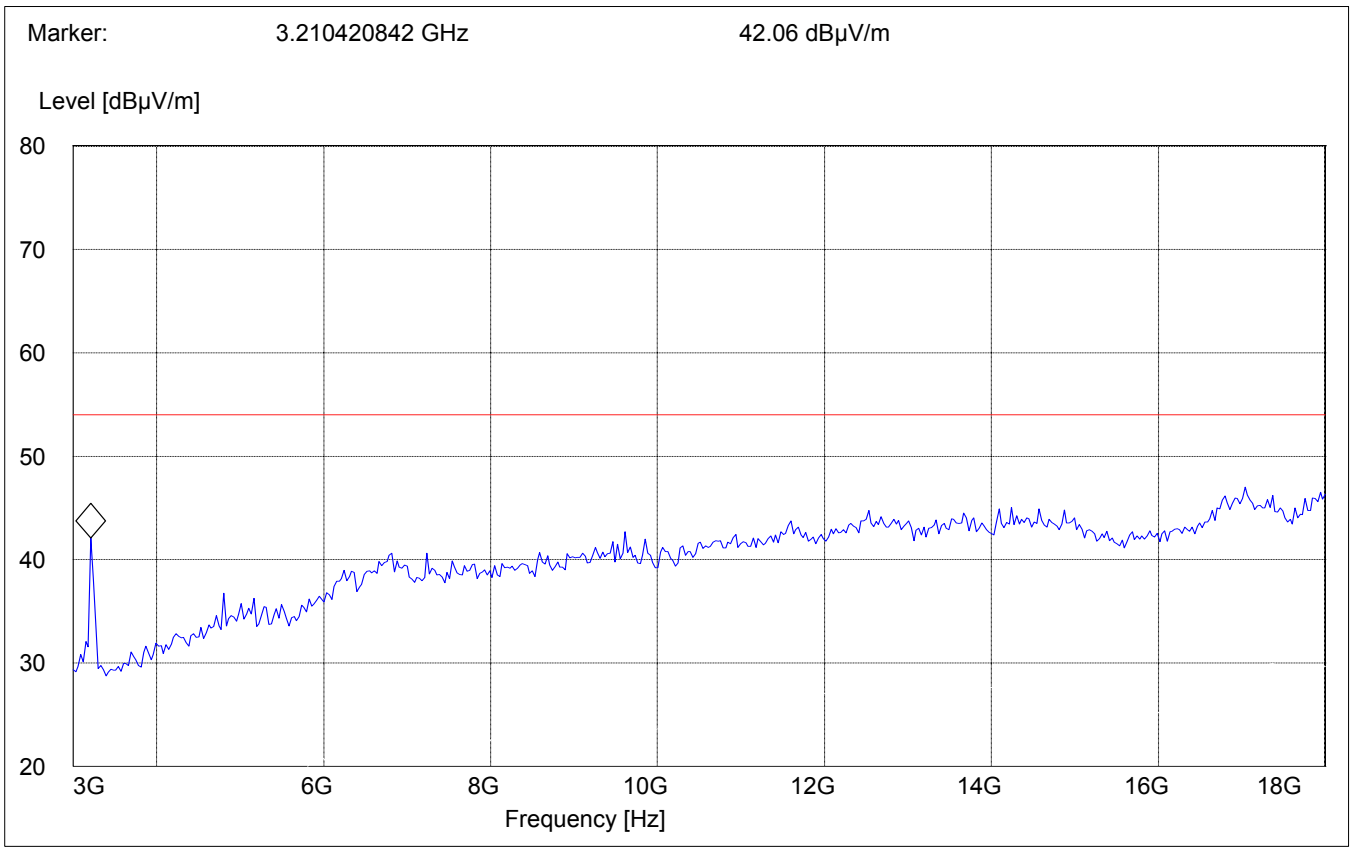


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Lowest Channel (2412MHz): 3GHz – 18GHz

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

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

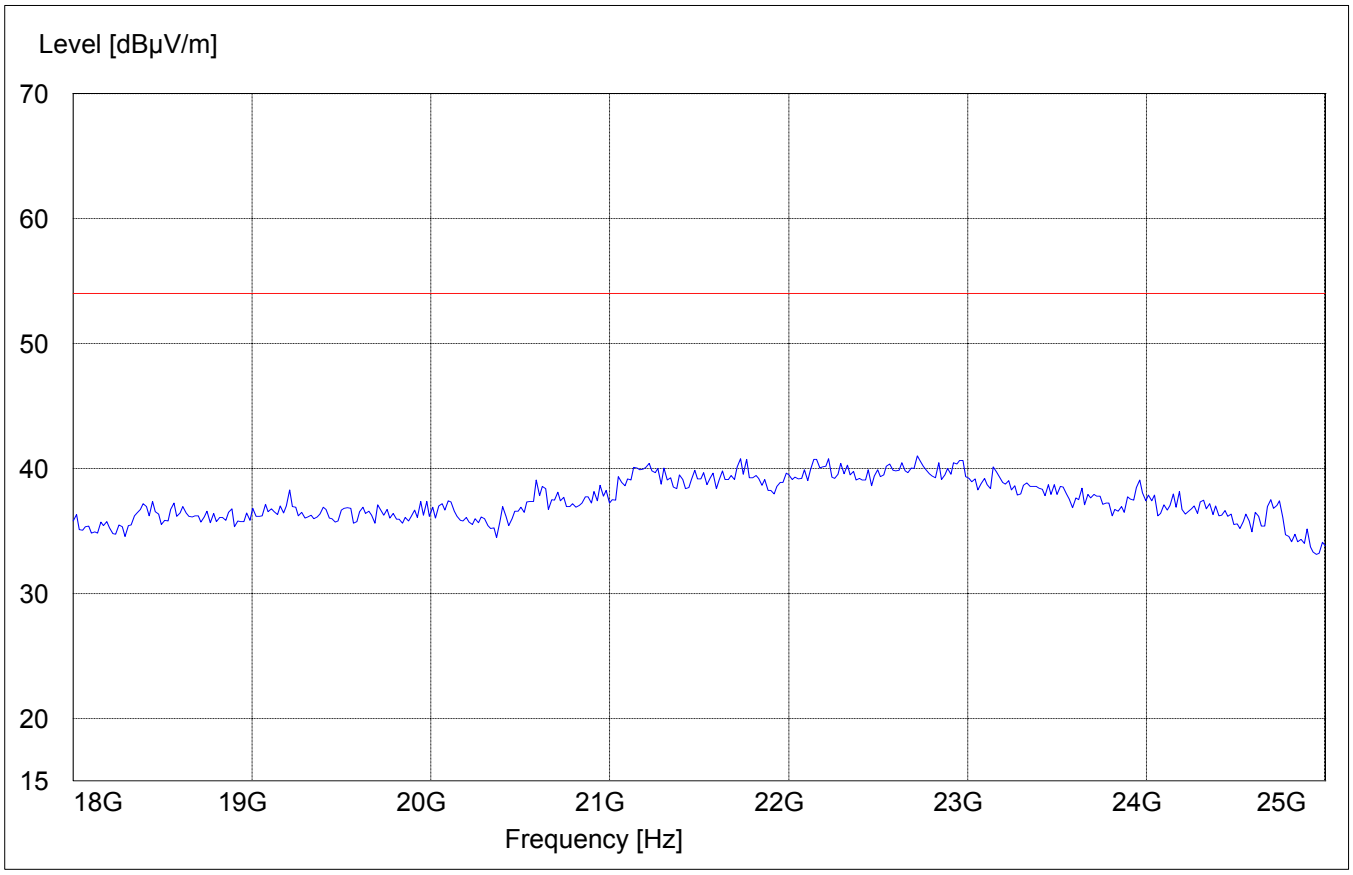
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
18GHz – 25GHz
Note: This plot is valid for low, mid, high channels (worst-case plot)

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

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



EMISSION LIMITATIONS (GSM1900 Collocated) **§ 15.247 (c) (1)**

Transmitter (Radiated)

WLAN Collocated with GSM Module 1900MHz band

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
3691.3	43.61		
5555.10	53.38		

Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
3751.50	35.98		
5615.23	46.16		

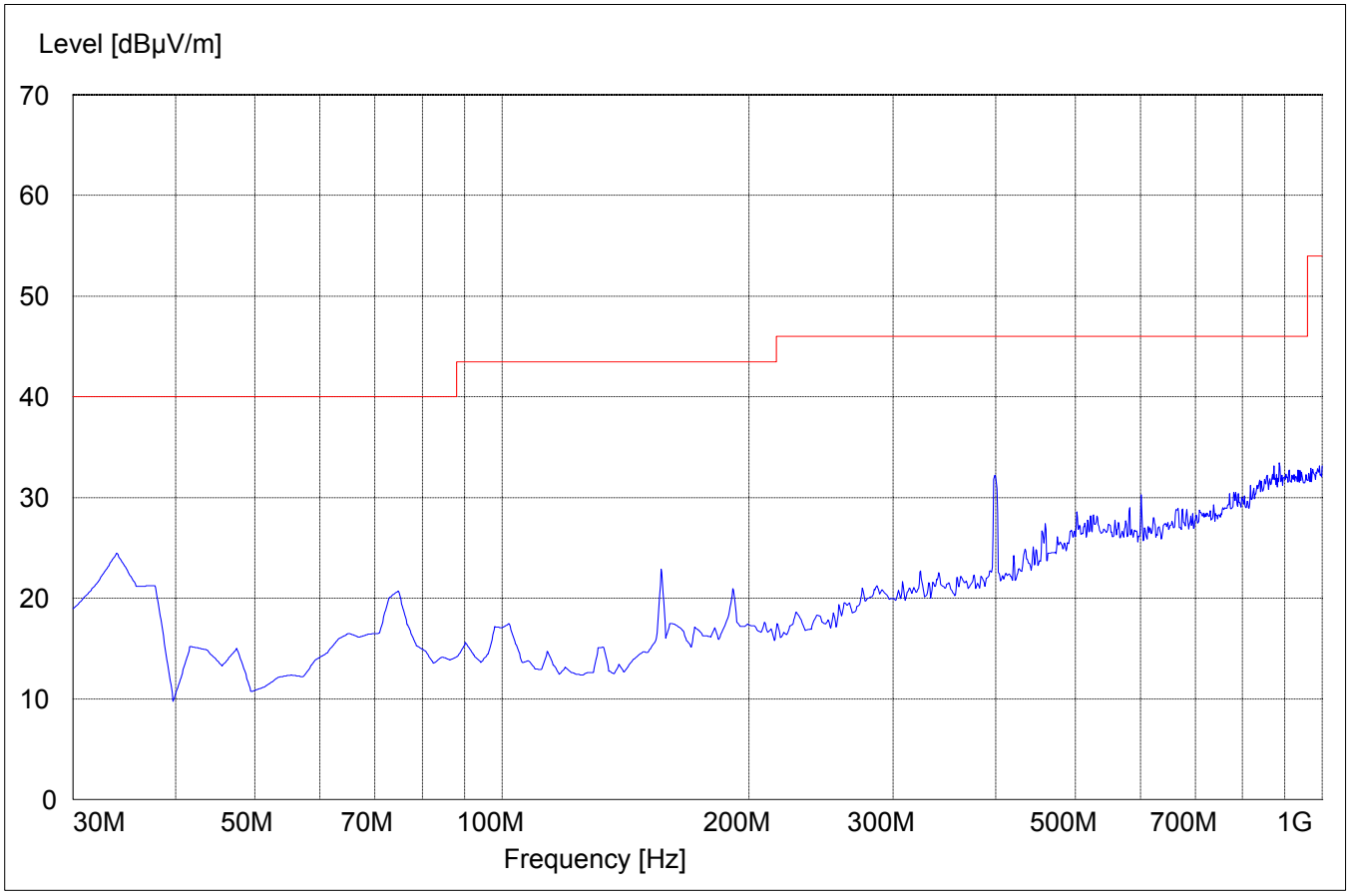
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
3811.62	43.80		
5705.41	51.60		

EMISSION LIMITATIONS - Radiated (Transmitter) **§ 15.247 (c) (1)**
Lowest Channel (2412MHz): 30MHz – 1GHz
GSM 1900 Tx @ ch-512

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

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

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

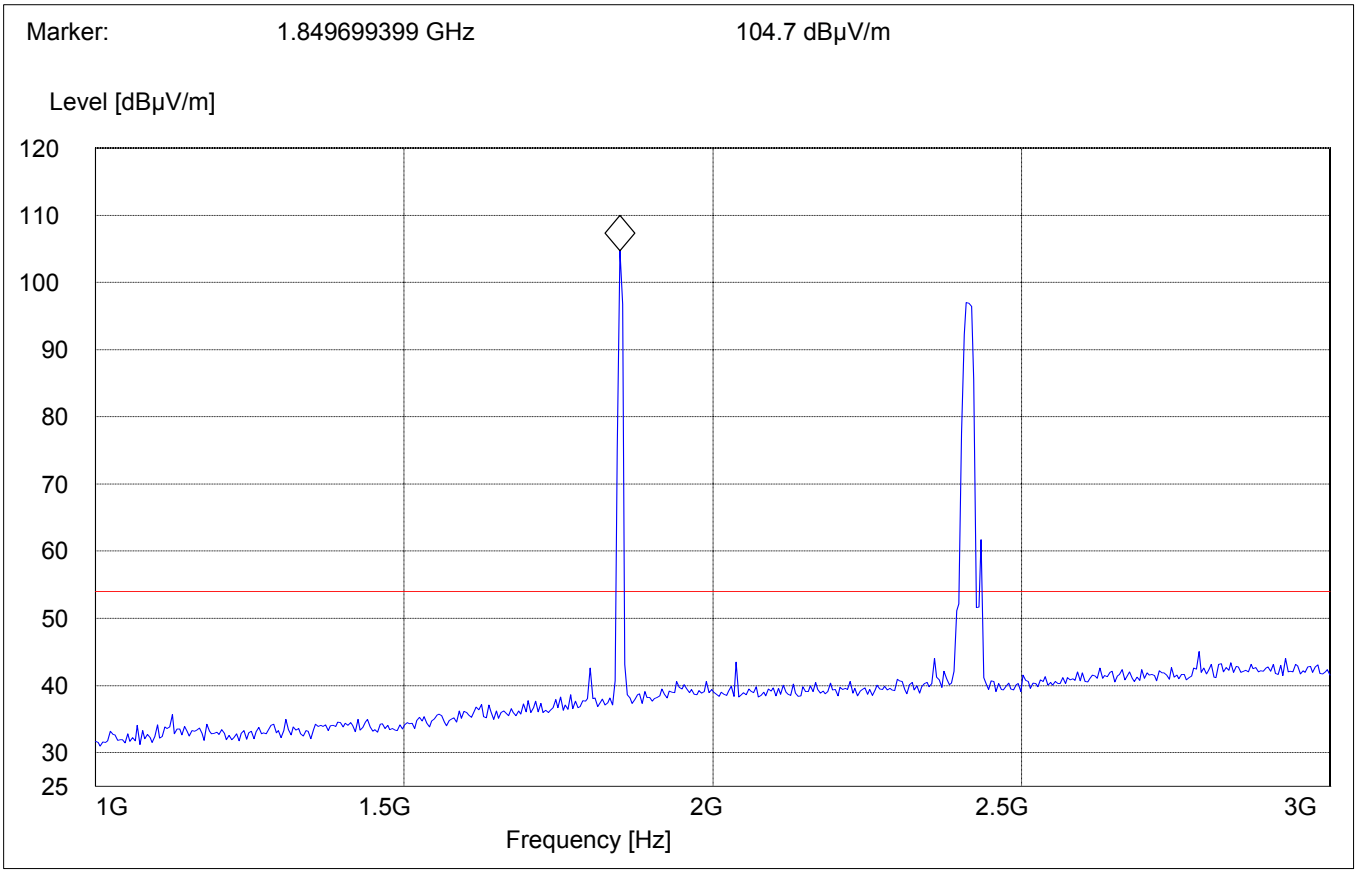


EMISSION LIMITATIONS - Radiated (Transmitter) **§ 15.247 (c) (1)**
Lowest Channel (2412MHz): 1GHz – 3GHz
GSM 1900 Tx @ ch-512

Note: The higher peak above the limit line is the WLAN carrier freq. & lower peak above the limit line is the GSM carrier freq.

SWEEP TABLE: "BT Spuri hi 1-3G"

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



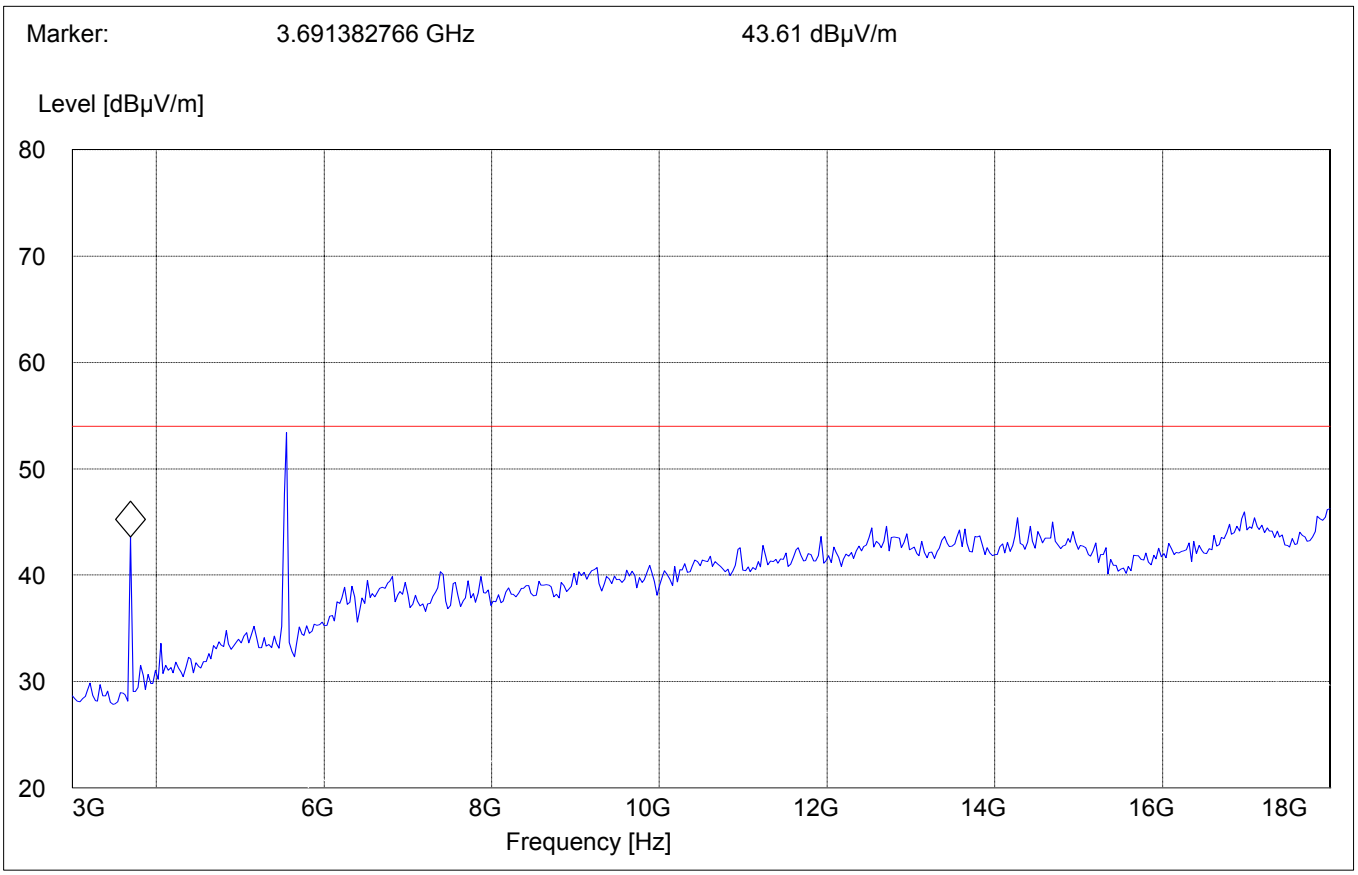
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)

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

GSM 1900 Tx @ ch-512

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

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

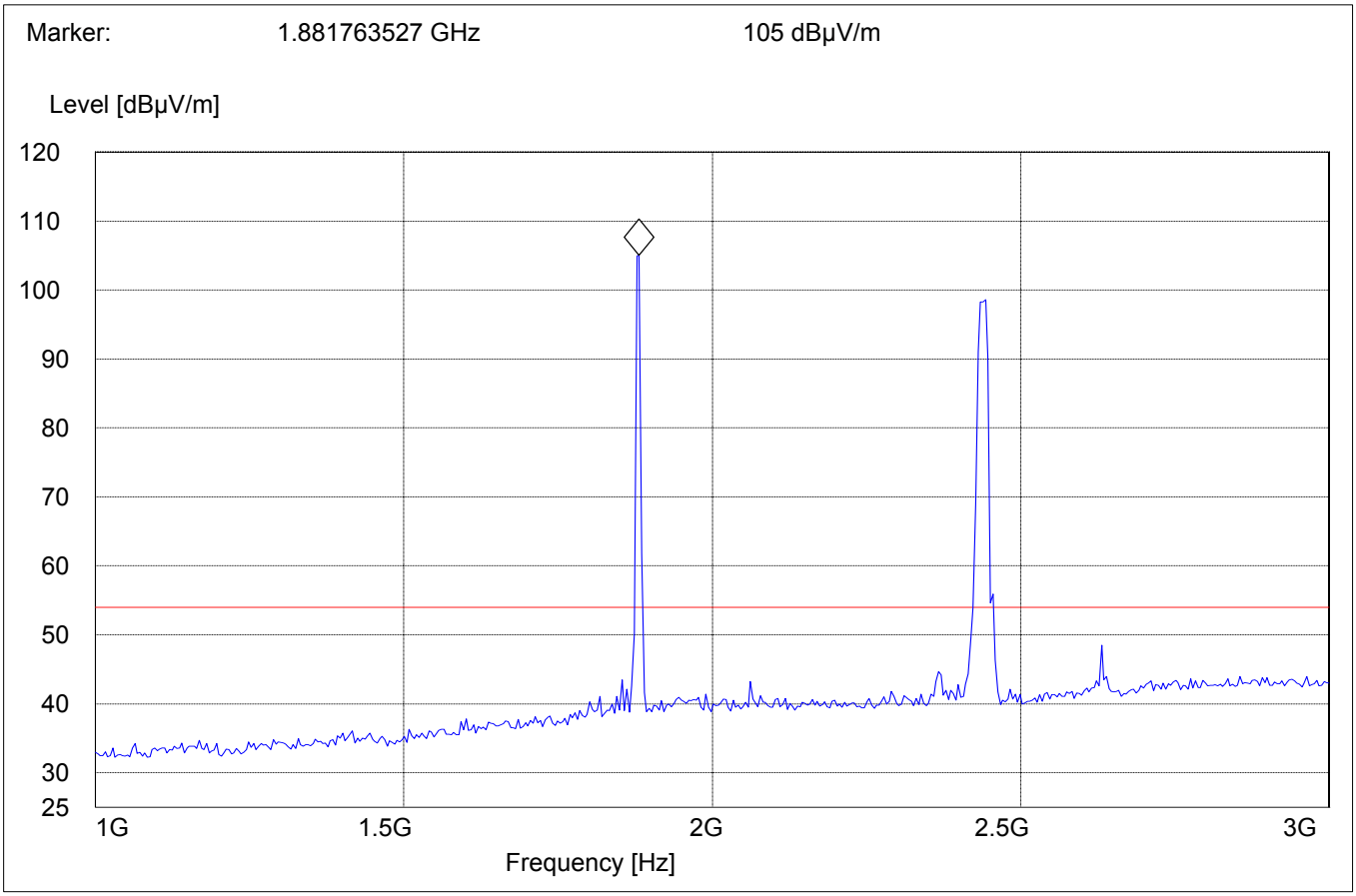


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Mid Channel (2437MHz): 1GHz – 3GHz
GSM 1900 Tx @ ch-661

Note: The higher peak above the limit line is the WLAN carrier freq. & lower peak above the limit line is the GSM carrier freq.

SWEEP TABLE: "BT Spuri hi 1-3G"

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



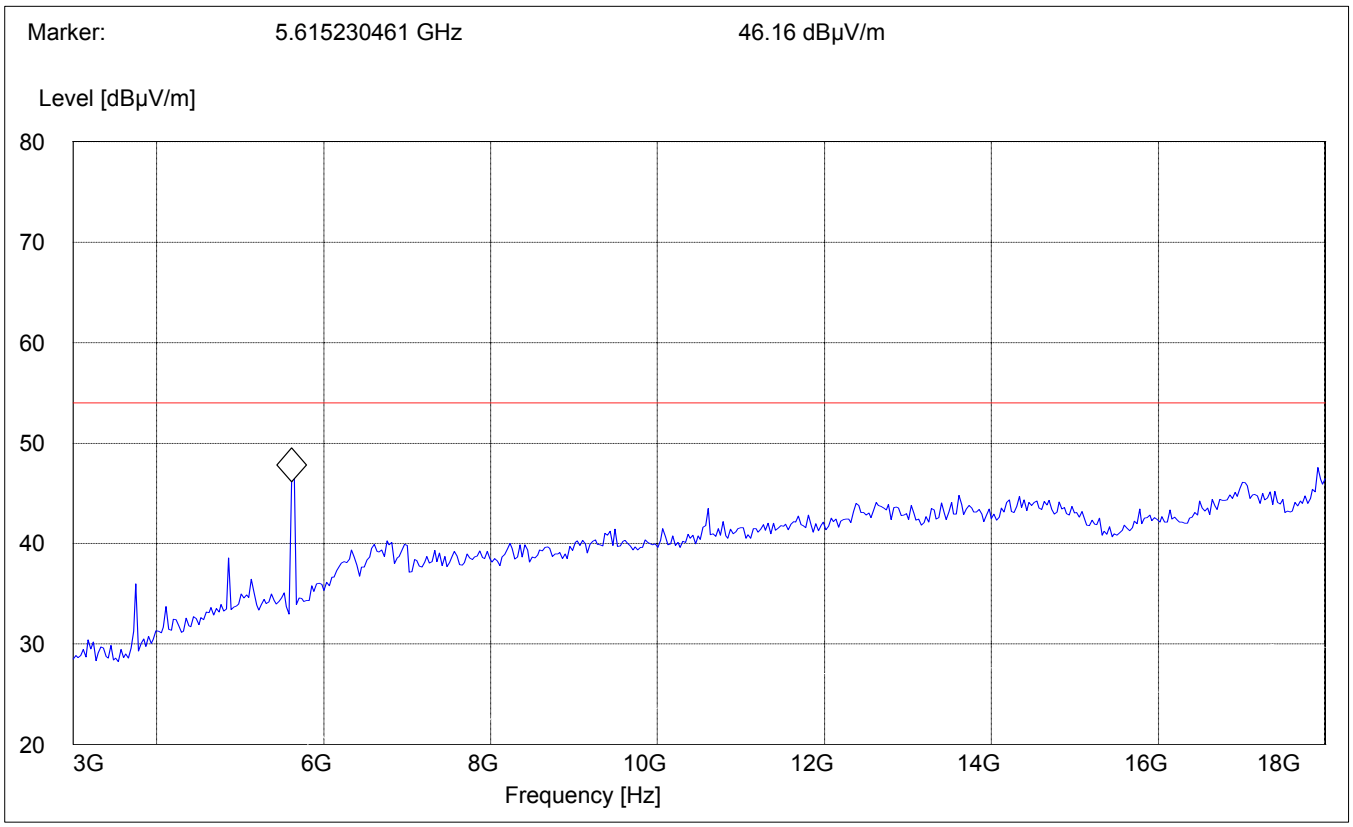
EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)

Mid Channel (2437MHz): 3GHz – 18GHz

GSM 1900 Tx @ ch-661

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

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

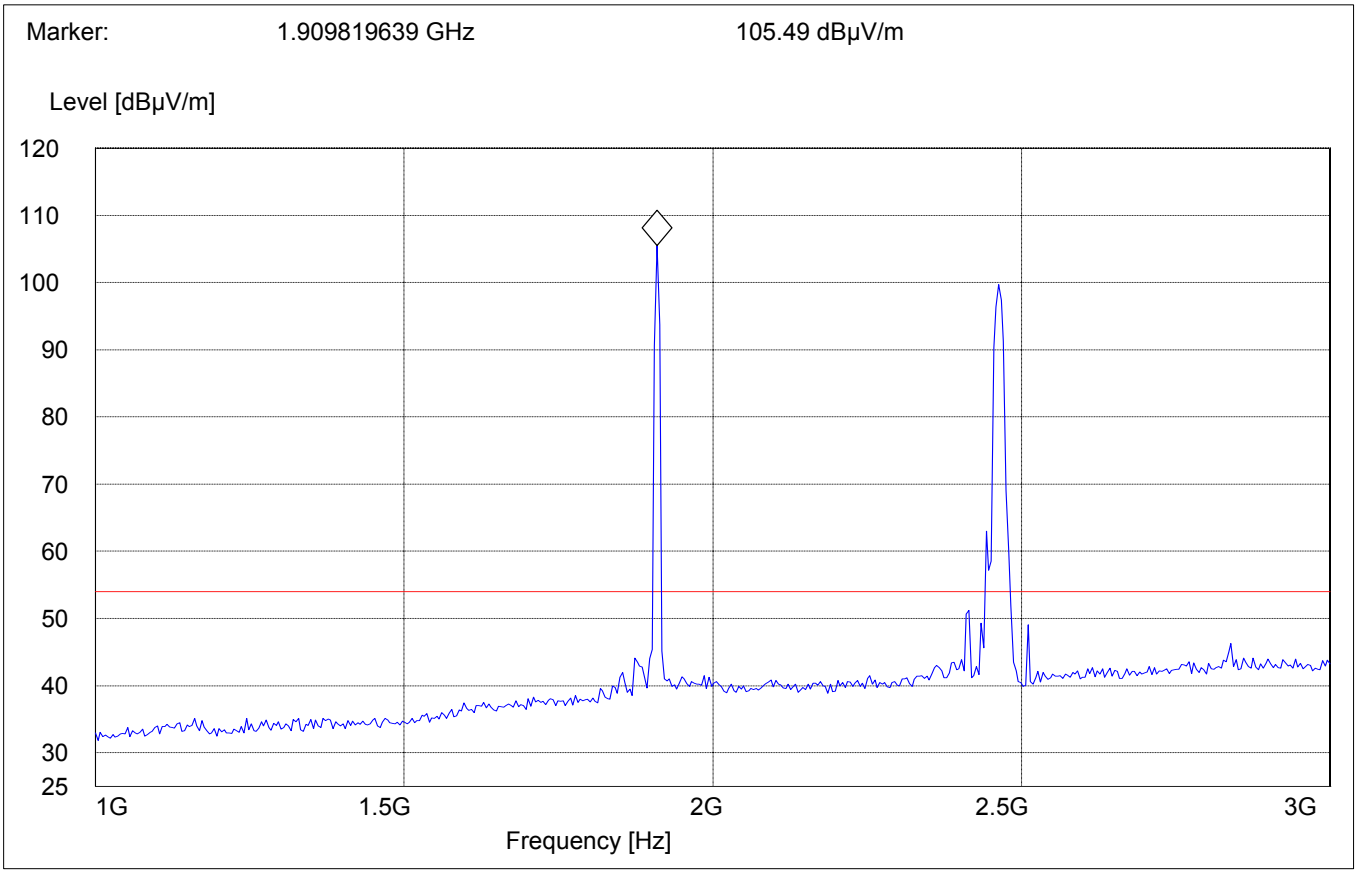


EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
Highest Channel (2462MHz): 1GHz – 3GHz
GSM 1900 Tx @ ch-810

Note: The higher peak above the limit line is the WLAN carrier freq. & lower peak above the limit line is the GSM carrier freq.

SWEEP TABLE: "BT Spuri hi 1-3G"

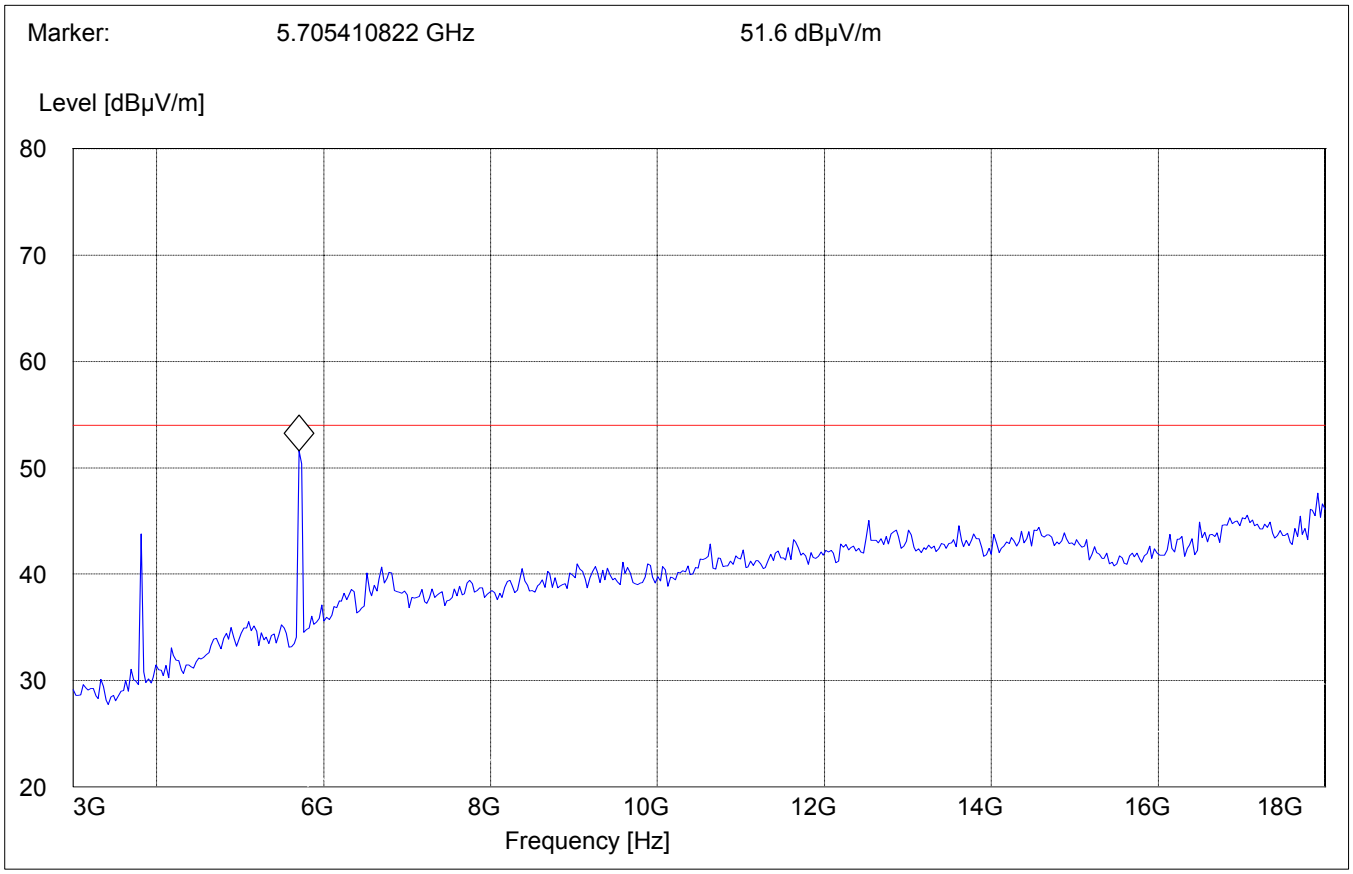
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) **§ 15.247 (c) (1)**
Highest Channel (2462MHz): 3GHz – 18GHz
GSM 1900 Tx @ ch-810

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

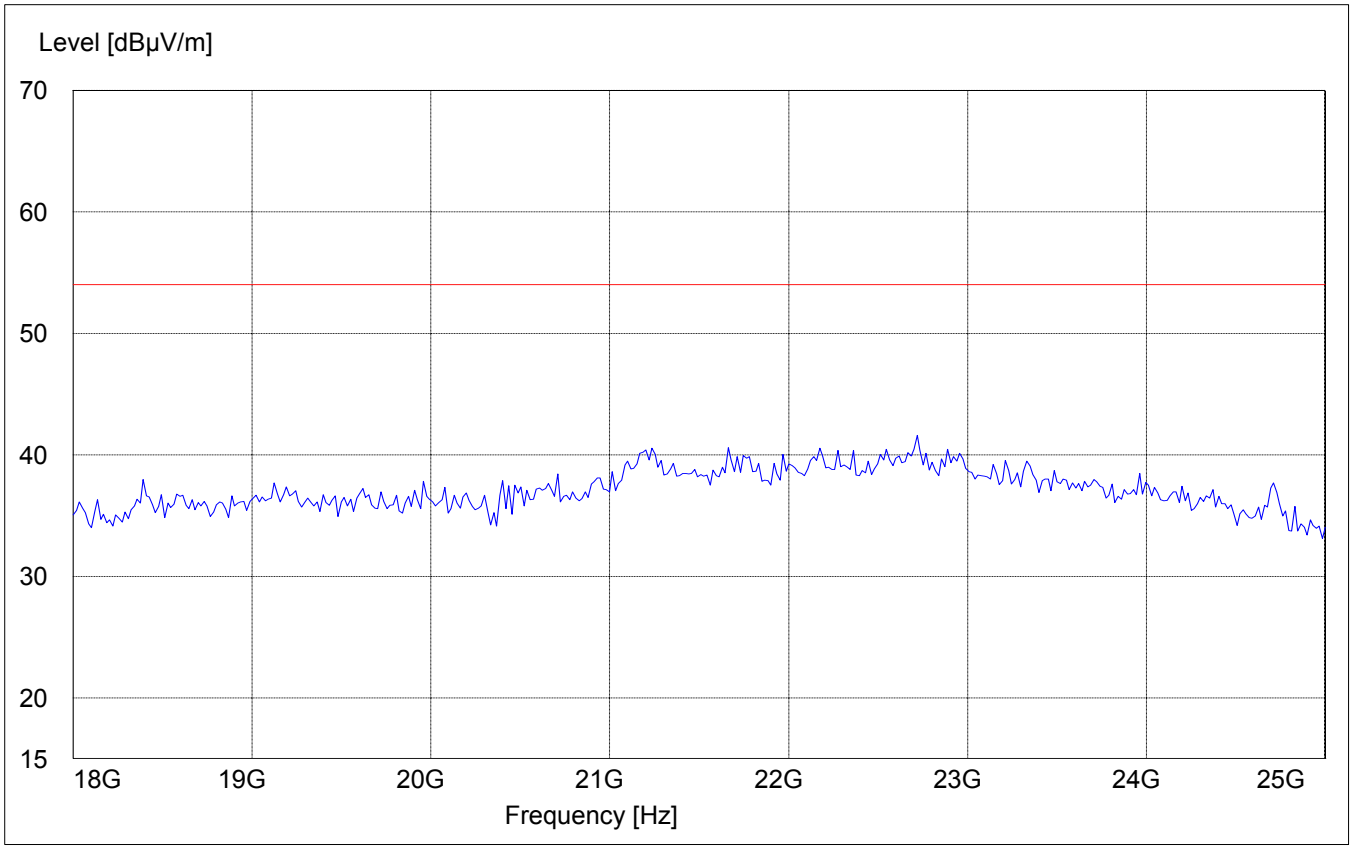
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter) § 15.247 (c) (1)
18GHz – 25GHz
GSM 1900 Tx @ ch-810

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

SWEEP TABLE:		"BT Spuri hi 18-25G"			
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
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"

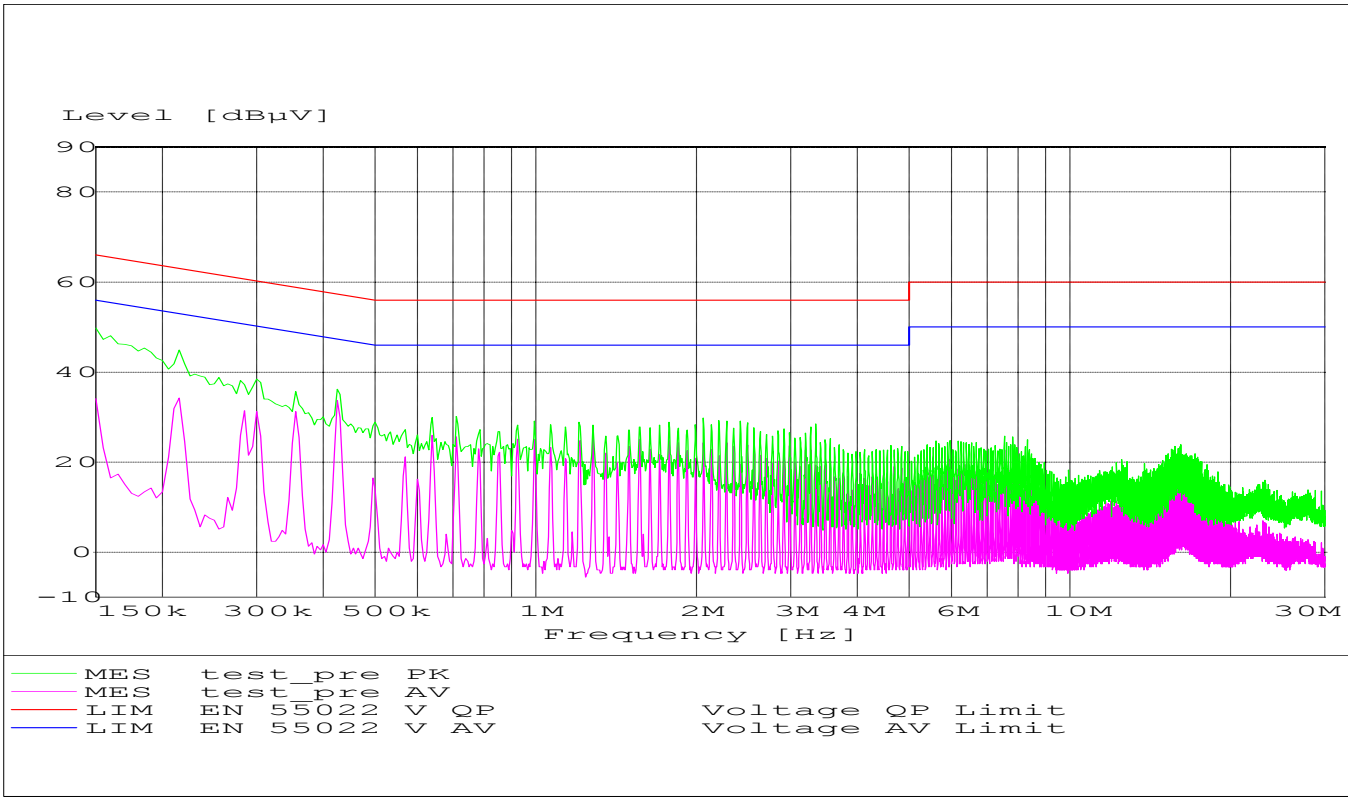
Short Description:		EN 55022 for 150KHz-30MHz			
Start Frequency	Stop Frequency	Detector	Meas Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	MaxPeak	Coupled	10 kHz	None

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



RECEIVER SPURIOUS RADIATION § 15.209

Limits

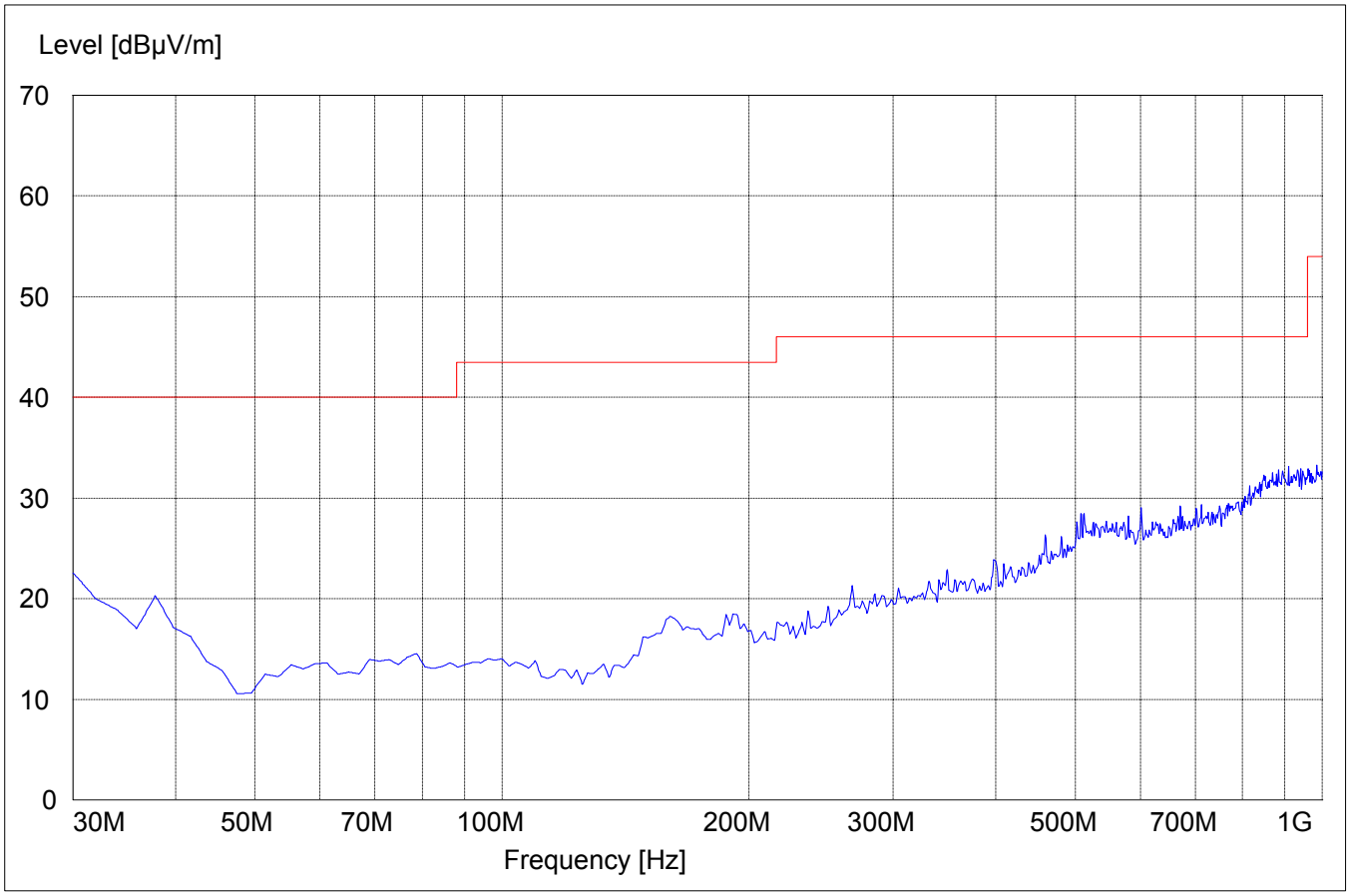
Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

NOTE:
The radiated emissions were done with different settings, using the relevant pre-amplifiers 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 § 15.209
30MHz – 1GHz

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

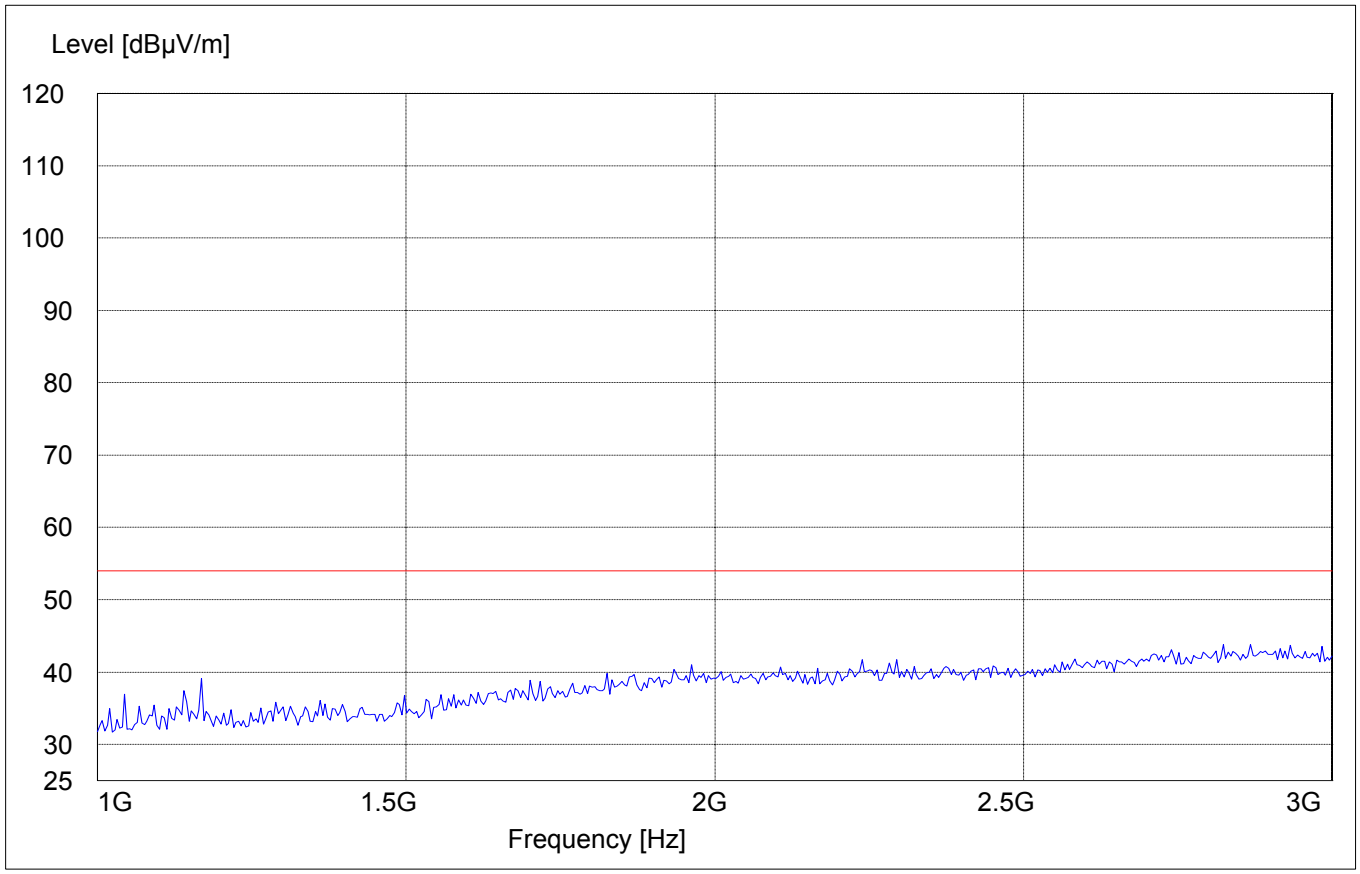
Start Frequency	Stop Frequency	Detector	Meas. Time	RBW VBW	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186



RECEIVER SPURIOUS RADIATION § 15.209
1GHz – 3GHz

SWEEP TABLE: "BT Spuri hi 1-3G"

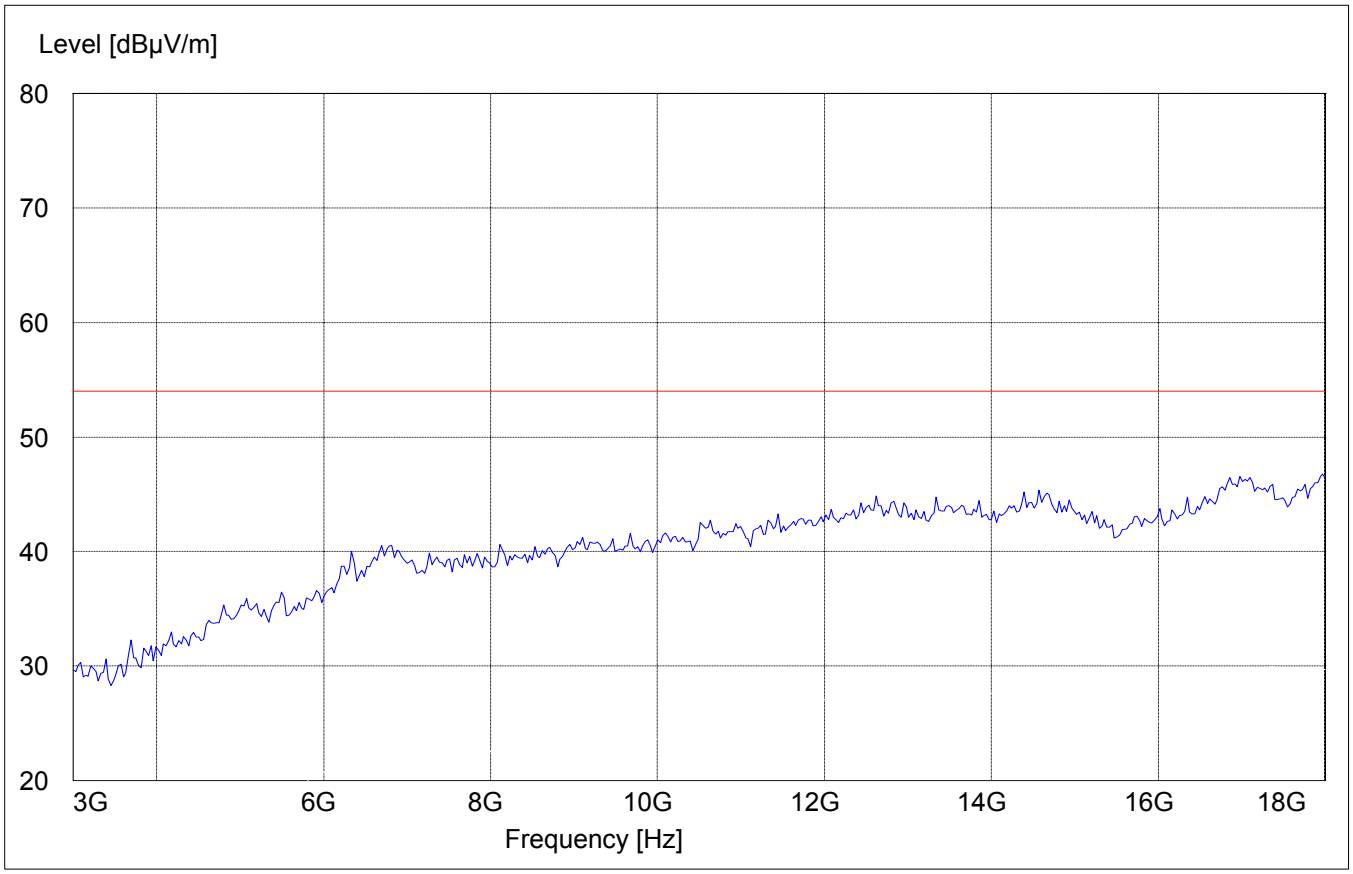
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



RECEIVER SPURIOUS RADIATION § 15.209
3GHz – 18GHz

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

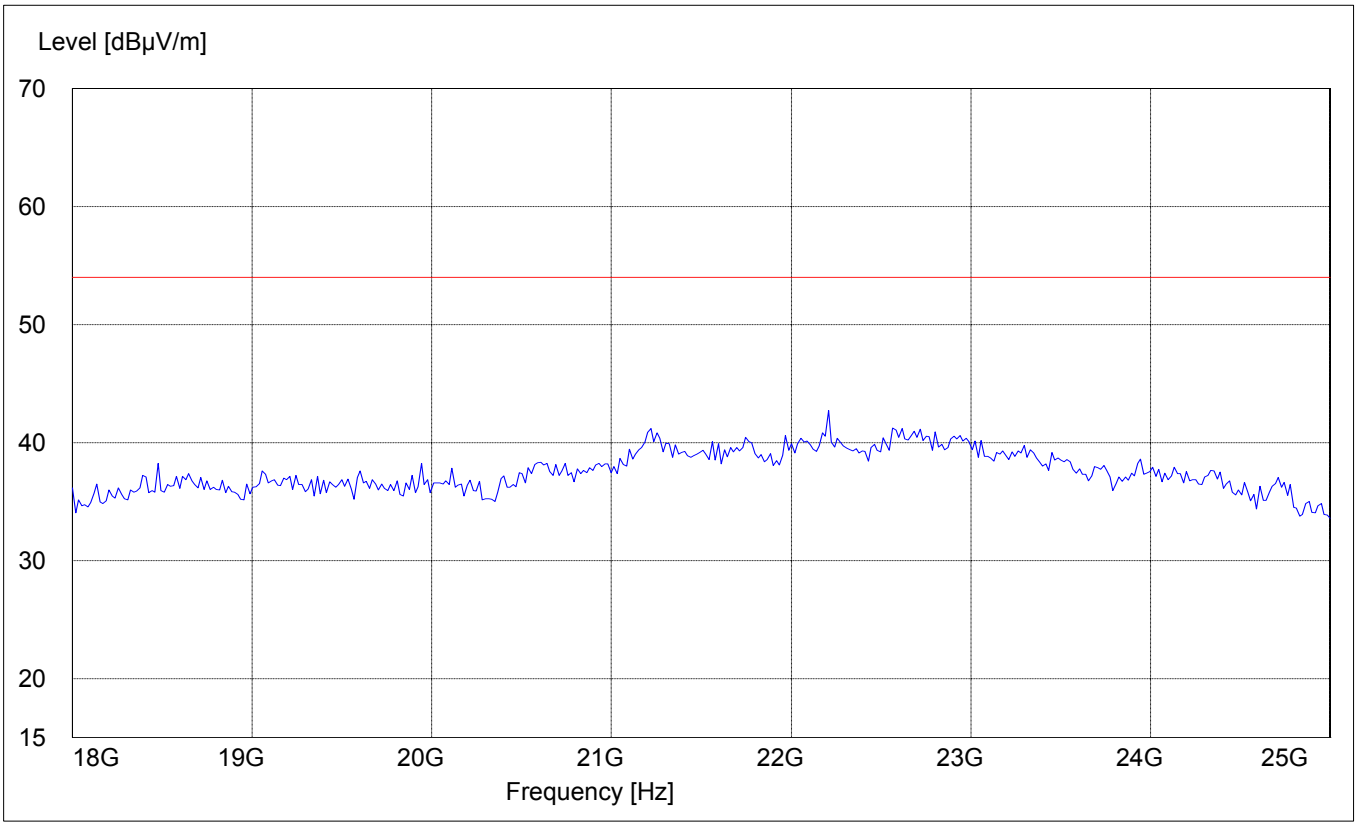
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
3.0 GHz	18 GHz	MaxPeak	Coupled	1 MHz	#326 horn (dBi)



RECEIVER SPURIOUS RADIATION § 15.209
18GHz – 25GHz

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

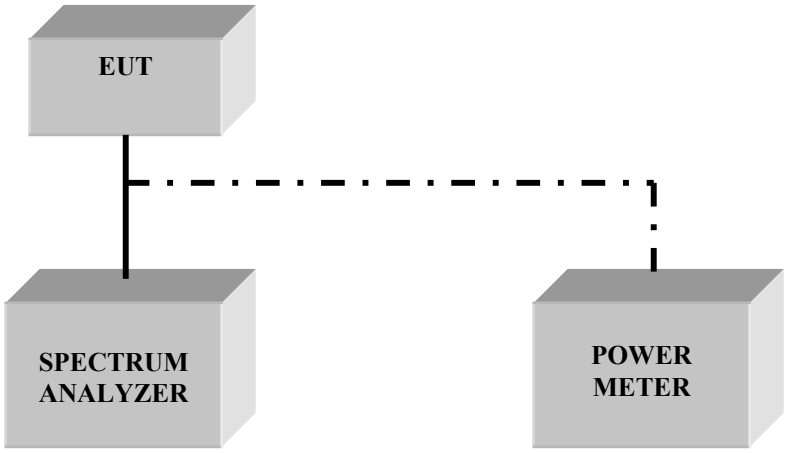
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW VBW	Transducer
18 GHz	25 GHz	MaxPeak	Coupled	1 MHz	#141 horn (dBi)



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	Biconilog Antenna	3141	EMCO	0005-1186
04	Horn Antenna (700M-18GHz)	SAS-200/571	AH Systems	325
05	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240
06	2-3GHz Band reject filter	BRM50701	Microtronics	6
07	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02
08	Pre-Amplifier	TS-ANA	Rohde & Schwarz	--
09	Pre-Amplifier	JS4-00102600	Miteq	00616

BLOCK DIAGRAMS
Conducted Testing



Radiated Testing