



FCC Test Report

Test report no.: EMC_577FCC15.247_2003

FCC Part 15.247 for DSSS systems / CANADA RSS-210

EUT: WLAN Model: BCM94306MP / BCM94306MPSG
HOST: Dell Laptop Model: PP10L
FCC ID: QDS-BRCM1005-D



TTI-P-G 081/94-A0

Accredited according to ISO/IEC 17025



FCC listed # 101450
IC recognized # 3925

CETECOM Inc.
411 Dixon Landing Road • Milpitas, CA 95035 • U.S.A.

Phone: + 1 (408) 586 6200 • Fax: + 1 (408) 586 6299 • E-mail: info@cetecomusa.com • <http://www.cetecom.com>

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

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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

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

Internet: www.cetecom.com

1.3 Details of applicant

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

1.4 Application details

Date of receipt test item : 2003-11-11
Date of test : 2003-11-11

1.5 Test item

Manufacturer : Applicant
Model No. (EUT) : **BCM94306MP / BCM94306MPSG**
Model No. (Host) : **PP10L (Dell Laptop)**
Description : **54g wireless LAN mini PCI card**
FCC ID : **QDS-BRCM1005-D**

Additional information

Frequency : 2412MHz – 2462MHz
Type of modulation : DSSS / OFDM (orthogonal frequency division multiplexing)
Number of channels : 11
Antenna : 2.9dBi max. gain antenna
Power supply : 3.3 VDC from Host
Output power : 25.55dBm (359mW) conducted peak power
Extreme temp. Tolerance : 0°C to +70°C

1.6 Test standards:

FCC Part 15 §15.247 / CANADA RSS-210

PROJECT OVERVIEW:

This test report carries all measurements required for Class-2 permissive change to FCC ID: QDS-BRCM1005-D with addition of new version of WLAN radio.

Old model# BCM94306MP

New model# BCM94306MPSG

Both WLAN models are technically identical. Where SG version carries base-band chip with reduced silicon size. Please refer to *Manufacturer's Declaration*.

This test report covers full radiated testing as per FCC 15.247 on WLAN model# BCM94306MPSG in laptop model# PP10L. Conducted peak power measured on new version is almost same as of old version; little difference can be justified under measurement uncertainty.

WLAN was tested in both DSSS & OFDM modes at different data rates (1,2,5.5,6,11,54). Test report shows only worst-case test results of all data rates.

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
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Technical responsibility for area of testing:

2003-12-01 EMC & Radio Lothar Schmidt
(Technical Manager)

**Date****Section****Name****Signature****Responsible for test report and project leader:**

2003-12-01 EMC & Radio Harpreet Sidhu (EMC Engineer)

**Date****Section****Name****Signature**

2.2 Test report

TEST REPORT

Test report no.: EMC_577FCC15.247_2003

FCC Part 15.247 for DSSS systems / CANADA RSS-210

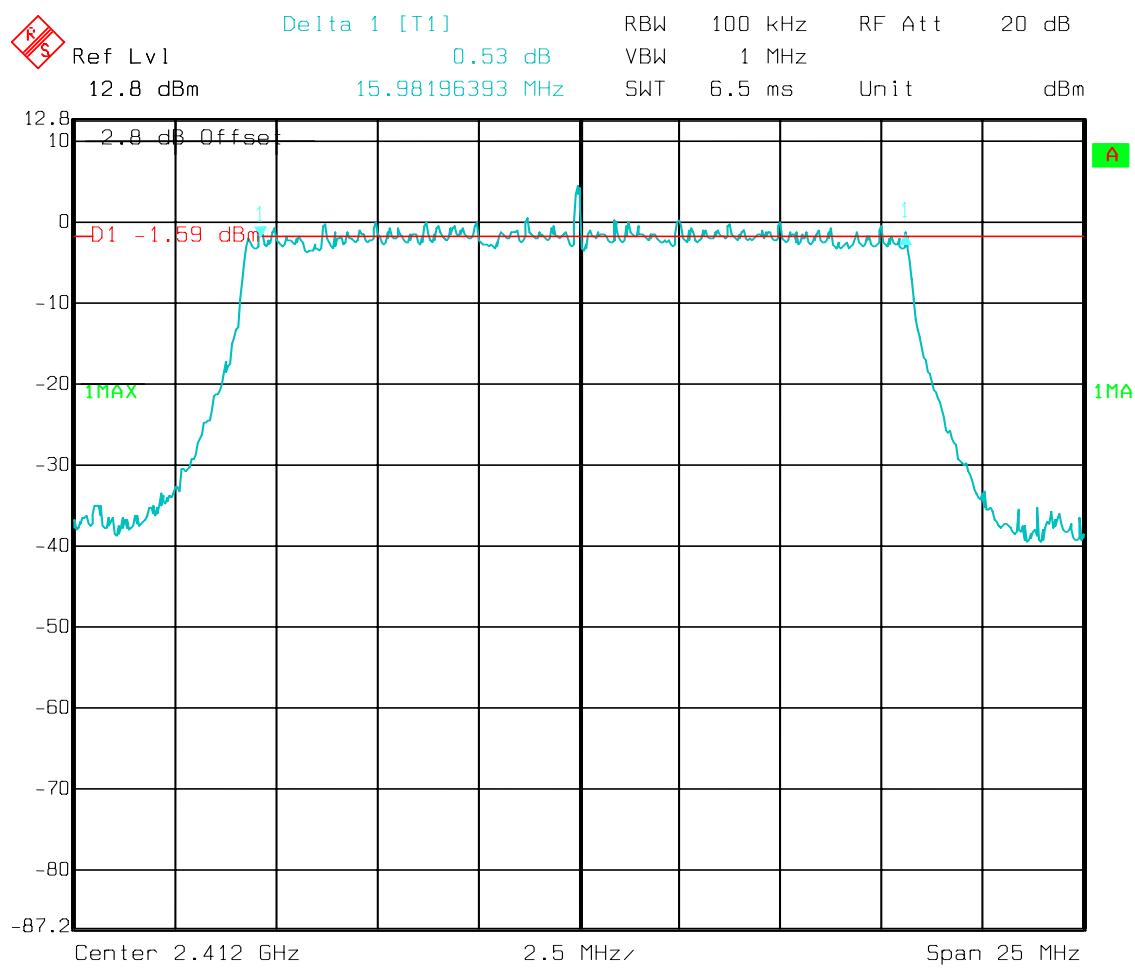
TEST REPORT REFERENCE

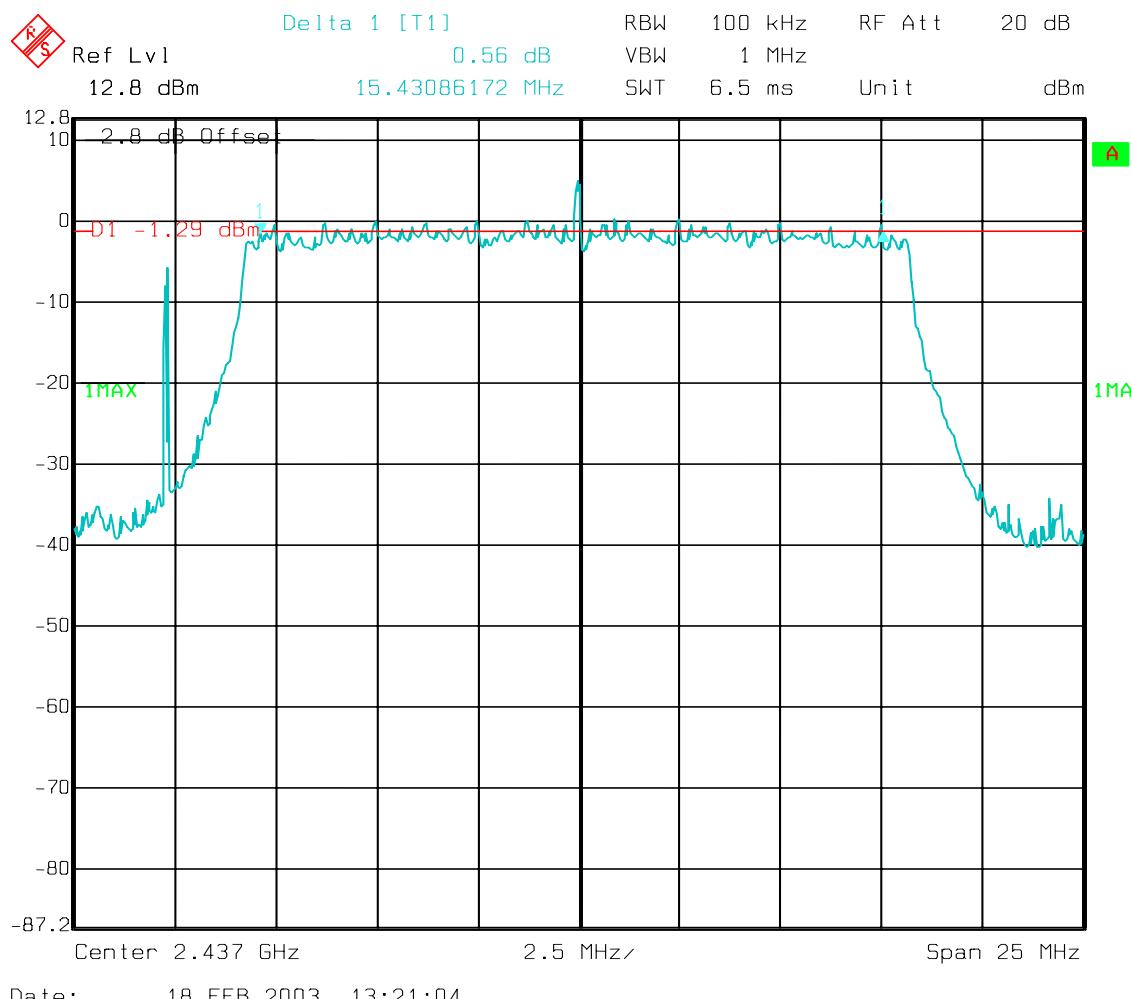
LIST OF MEASUREMENTS		PAGE
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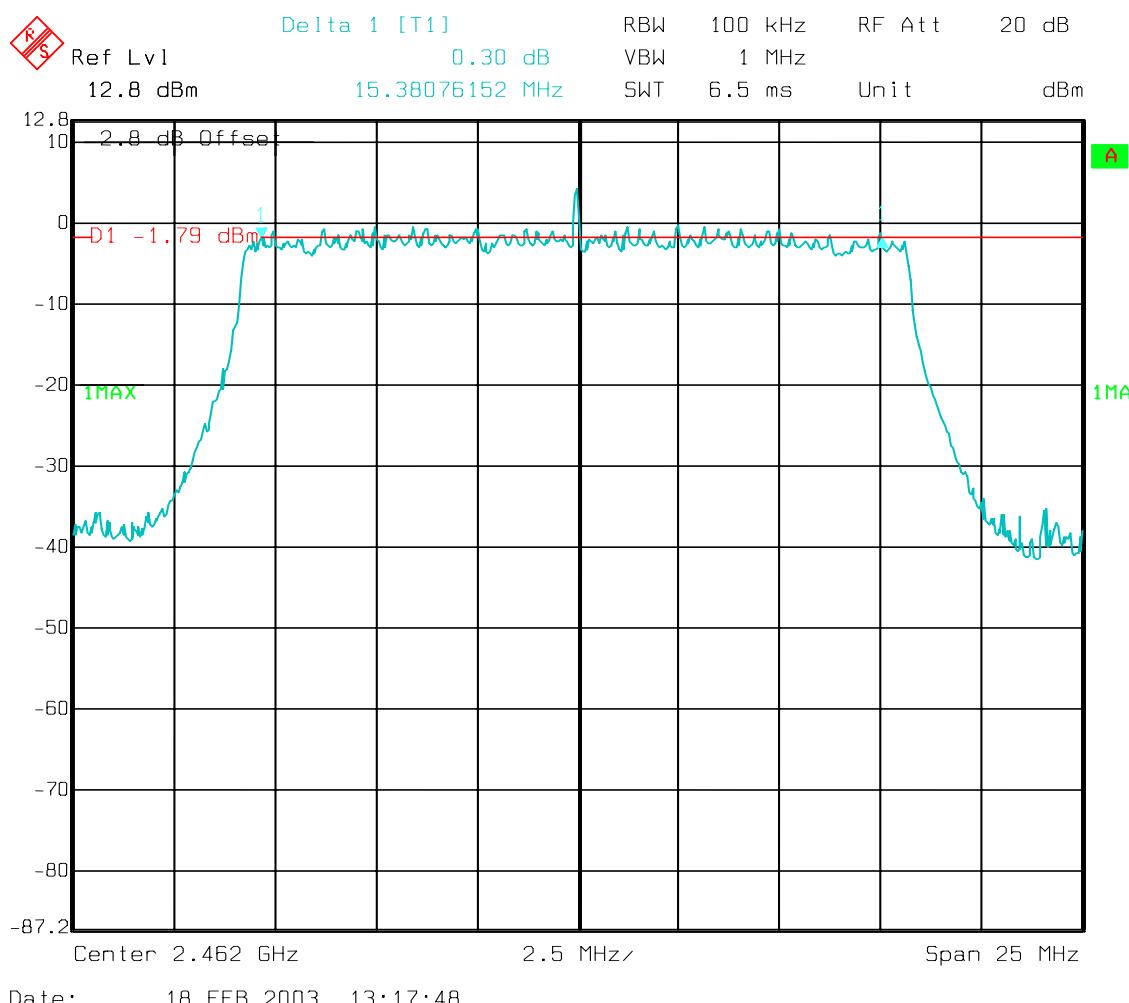
SPECTRUM BANDWIDTH OF DSSS SYSTEM
6 dB bandwidth**§15.247(a) (2)**

TEST CONDITIONS		6 dB BANDWIDTH (MHz)		
Frequency (MHz)		2412	2437	2462
$T_{nom}(23)^\circ C$	$V_{nom}(3.3) VDC$	15.98	15.43	15.38

LIMIT**SUBCLAUSE §15.247(a) (2)****The minimum 6dB bandwidth 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: 2437MHz**

SPECTRUM BANDWIDTH OF DSSS SYSTEM**§15.247(a) (2)****6 dB bandwidth****Highest Channel: 2462MHz**

OUTPUT POWER**§ 15.247 (b) (1)****WLAN Model# BCM94306MP**

(Note: Conducted output power for WLAN Model# **BCM94306MP** was found lower than WLAN Model# **BCM94306MP**, refer to page 22 for details)

	Low channel	Mid channel	High channel
*Conducted Peak Power	25.55dBm	24.48dBm	24.11dBm
*Radiated Power (EIRP)	28.45dBm	27.38dBm	27.01dBm
**Source-based time averaged output	21.68dBm	20.61dBm	20.24dBm

*For details please refer to pages 9(Conducted output power results), 13(EIRP calculation) & 14(duty cycle measurements) respectively.

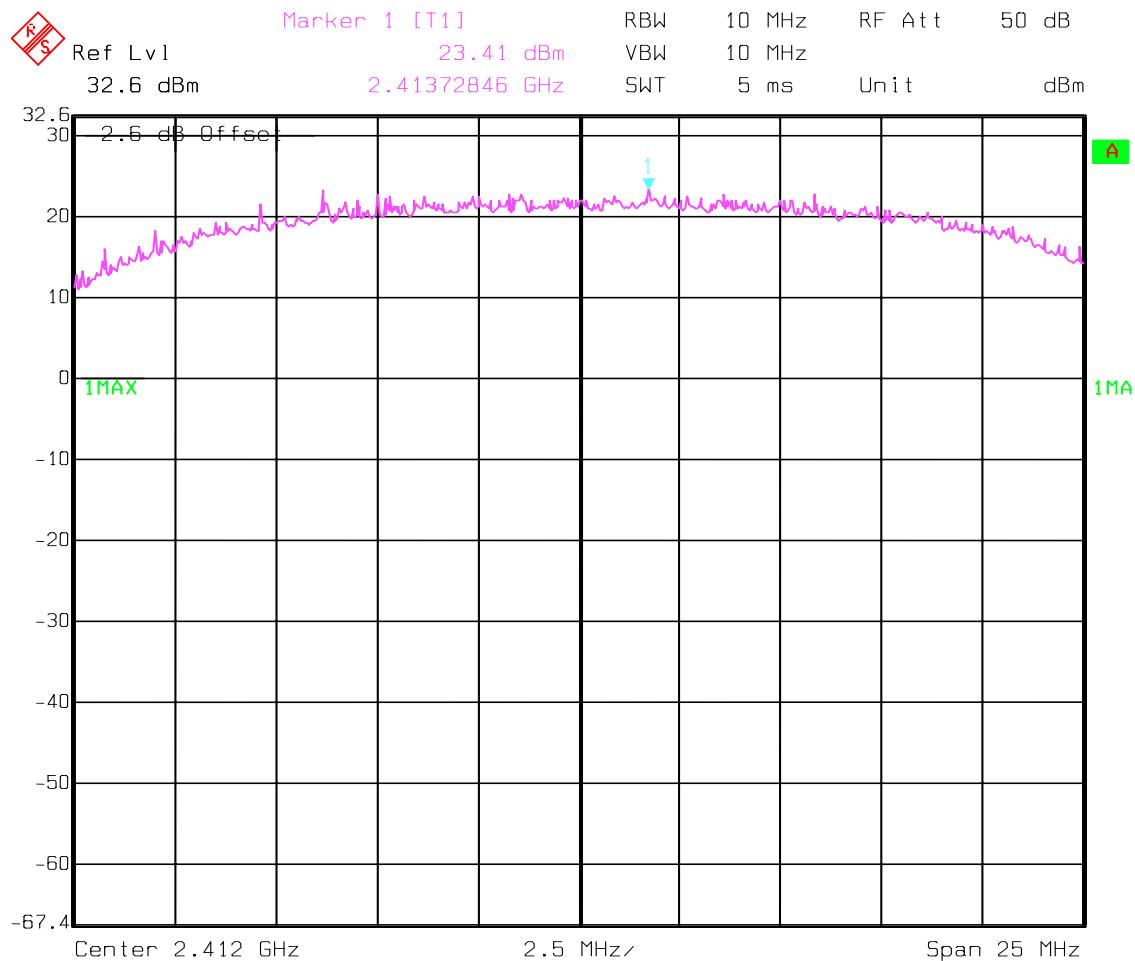
**The source-based time-averaged output power is calculated using the duty cycle (measurement result see page 14-17, These values are used to determine if the TCB route can be used)

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

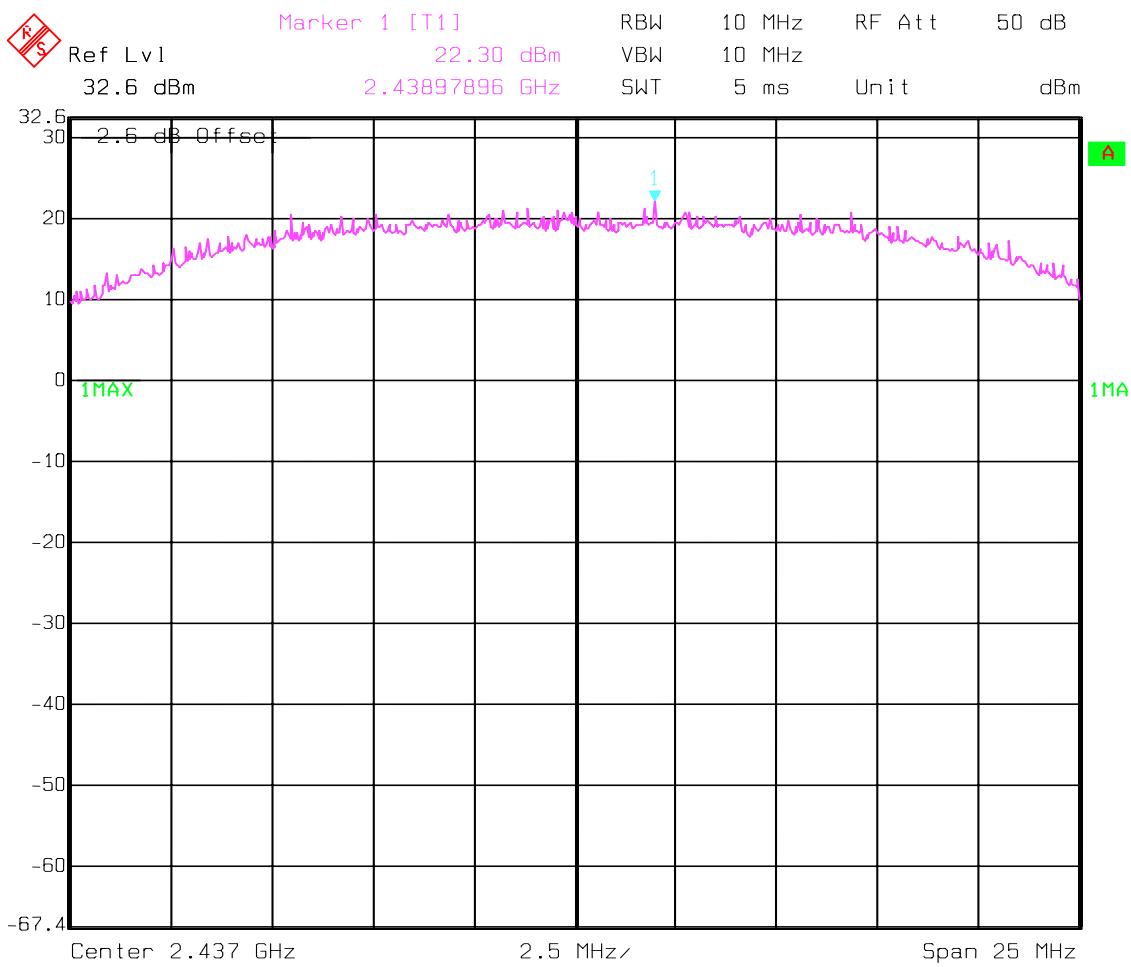
TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)			
Frequency (MHz)		2412	2437	2462	
$T_{\text{nom}}(23)^\circ\text{C}$	$V_{\text{nom}}(3.3) \text{ VDC}$	Pk	*25.55	*24.48	*24.11
Measurement uncertainty		$\pm 0.5 \text{ dBm}$			

To comply with following;*RBW / VBW should be equal to or greater than the 6dB BW****All measured values are corrected by $10\log(6\text{dB BW} / \text{used BW})$** **(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)**

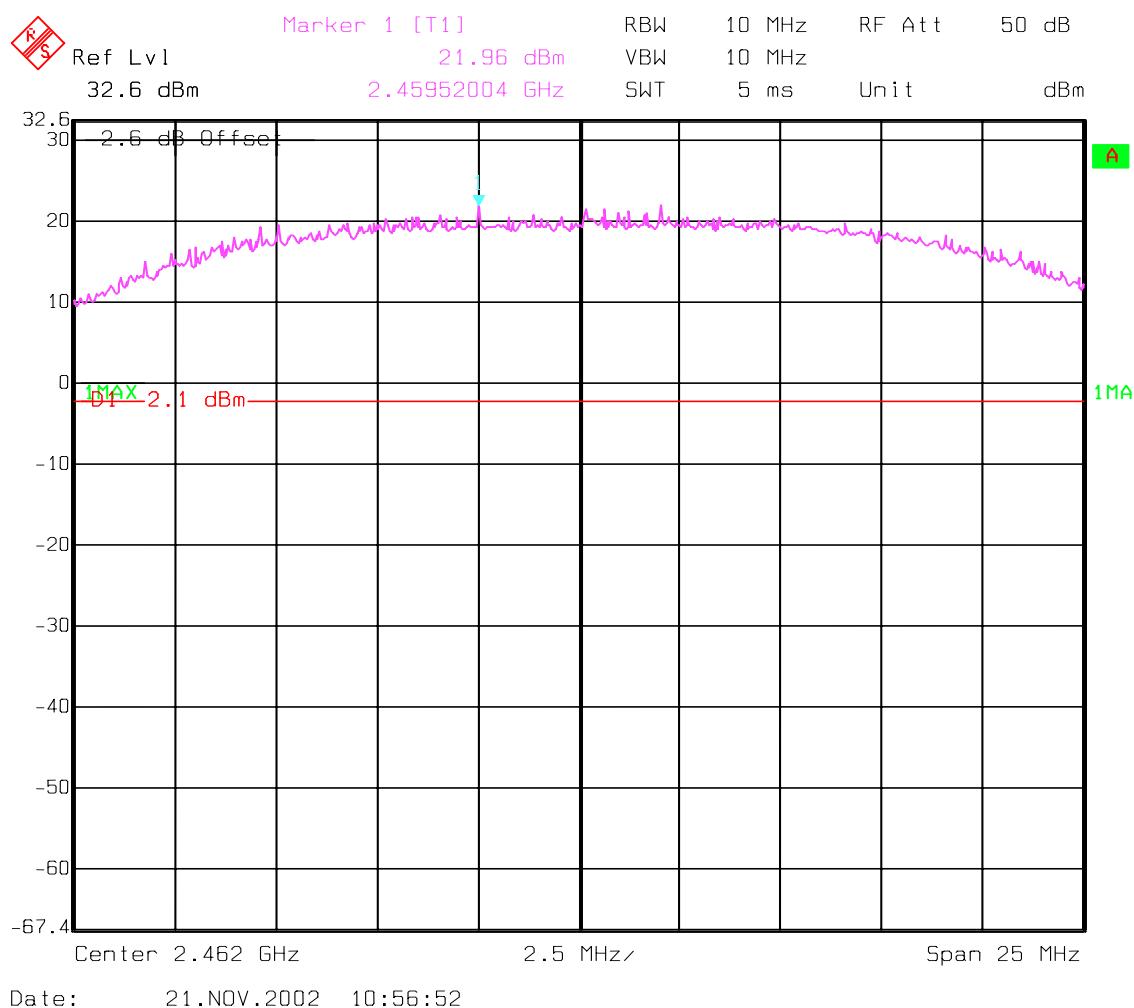
Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt / 30dBm

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)		
Frequency (MHz)		2412	2437	2462
T _{nom} (23)°C	V _{nom} (3.3) VDC	*28.45	*27.38	*27.01
Measurement uncertainty		±0.5dBm		

Note: EIRP is calculated based on 2.9dBi antenna gain and conducted peak power measurements.*LIMIT****SUBCLAUSE § 15.247 (b) (1)**

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

SOURCE-BASED TIME-AVERAGED OUTPUT $T_{x\ on} = 140.2\ \mu s$ $T_{x\ on} + T_{x\ off} = 661.32\ \mu s$ $\text{Duty factor} = T_{x\ on} / (T_{x\ on} + T_{x\ off}) = 140.2 / 661.32 = 0.21$

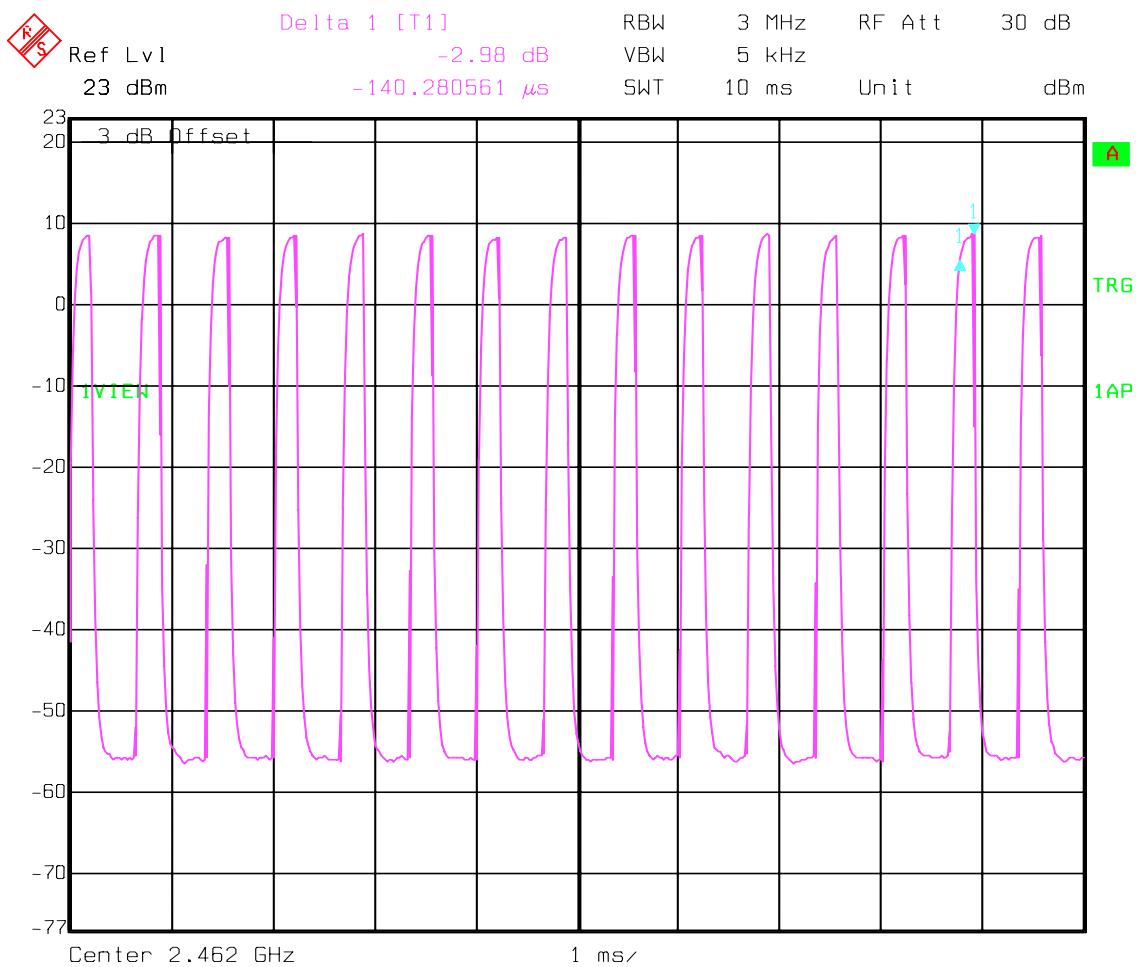
Therefore;

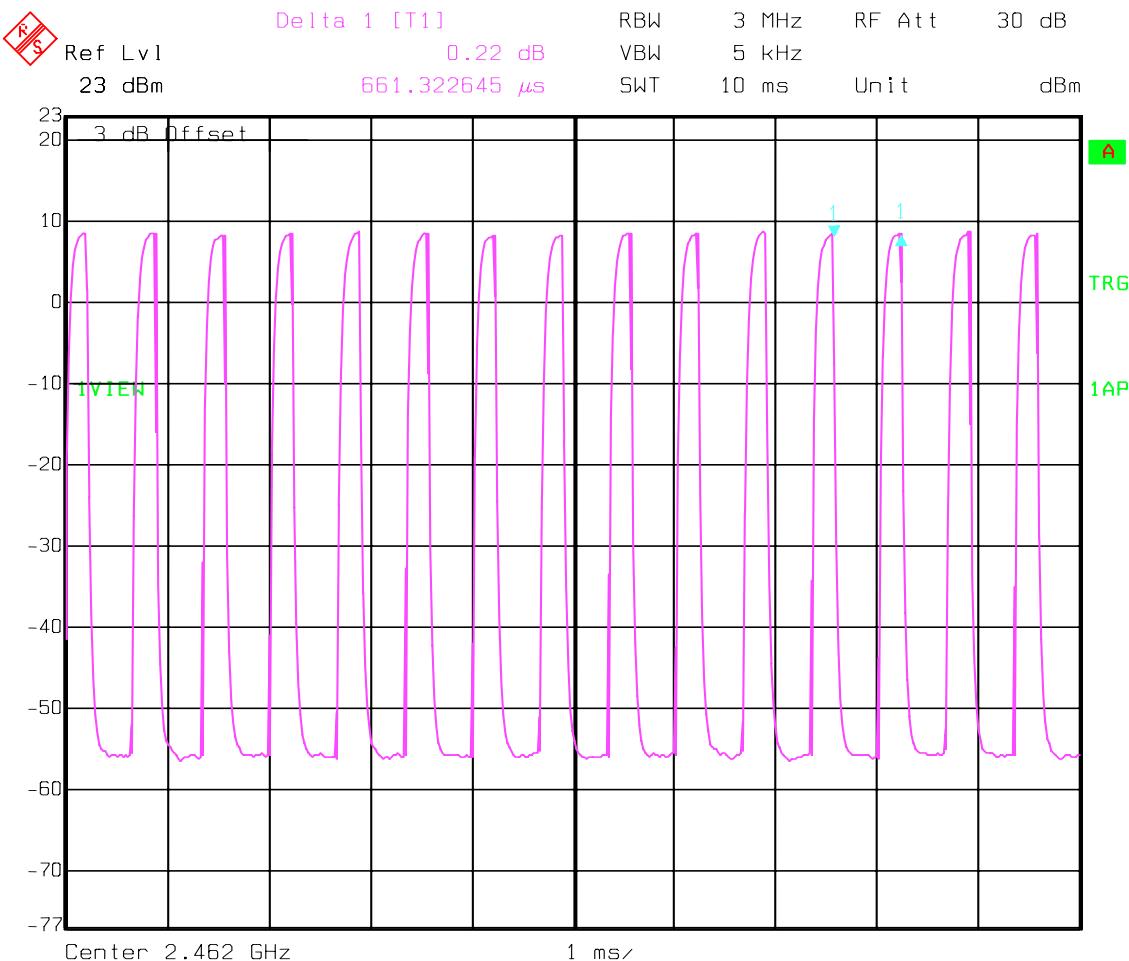
(Example for Low channel)

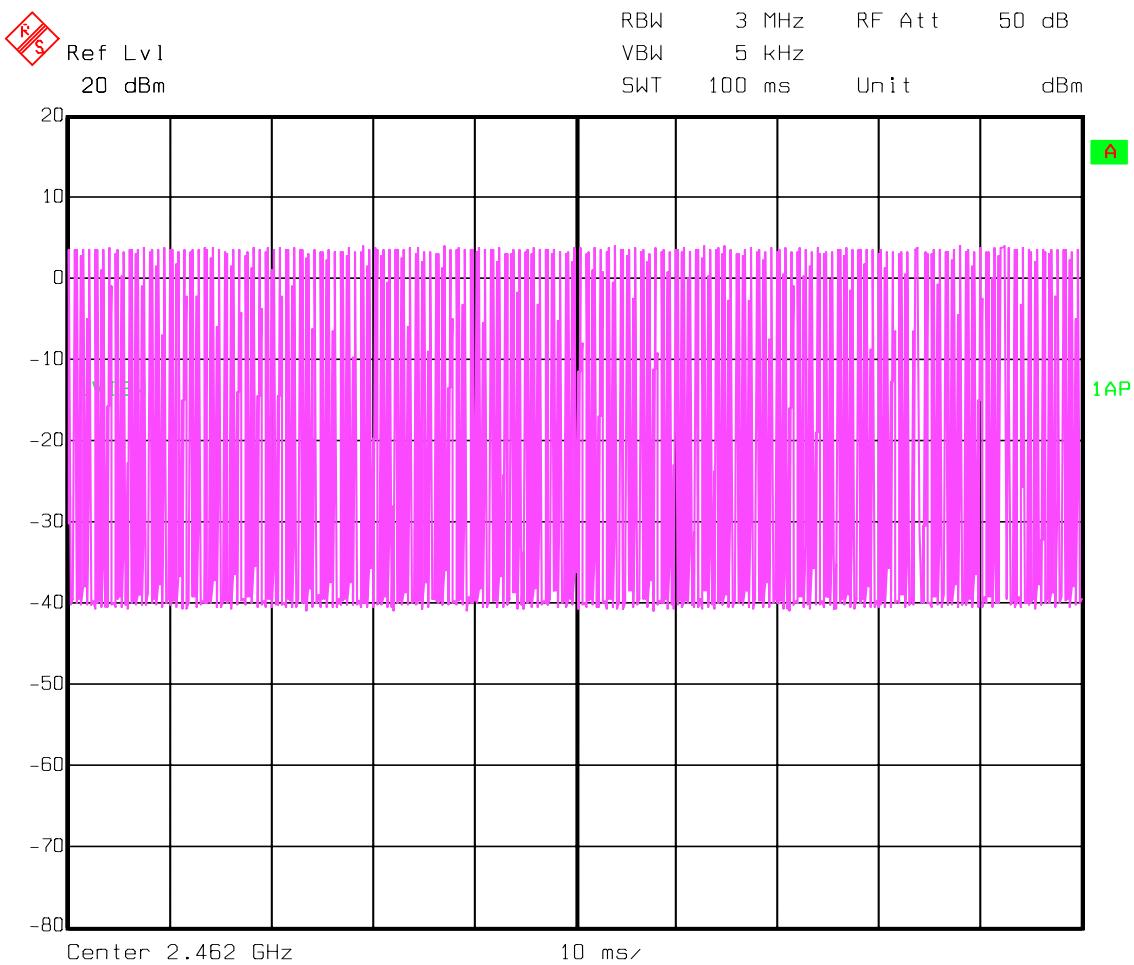
$$\begin{aligned}\text{Source-based time averaged output} &= \text{Max. EIRP} + 10\log(\text{duty factor}) \\ &= 28.45 - 6.77 = \mathbf{21.68\ dBm}\end{aligned}$$

TEST CONDITIONS		SOURCE-BASED TIME AVERAGED OUTPUT (dBm)		
Frequency (MHz)		2412	2437	2462
T _{nom} (23)°C	V _{nom} (3.3) VDC	21.68	20.61	20.24

Please refer to the plots on next pages

Transmitter ON time – $T_{x_{on}}$ 

Transmitter ON+OFF time – $T_{\text{Txon}} + T_{\text{Txoff}}$ 

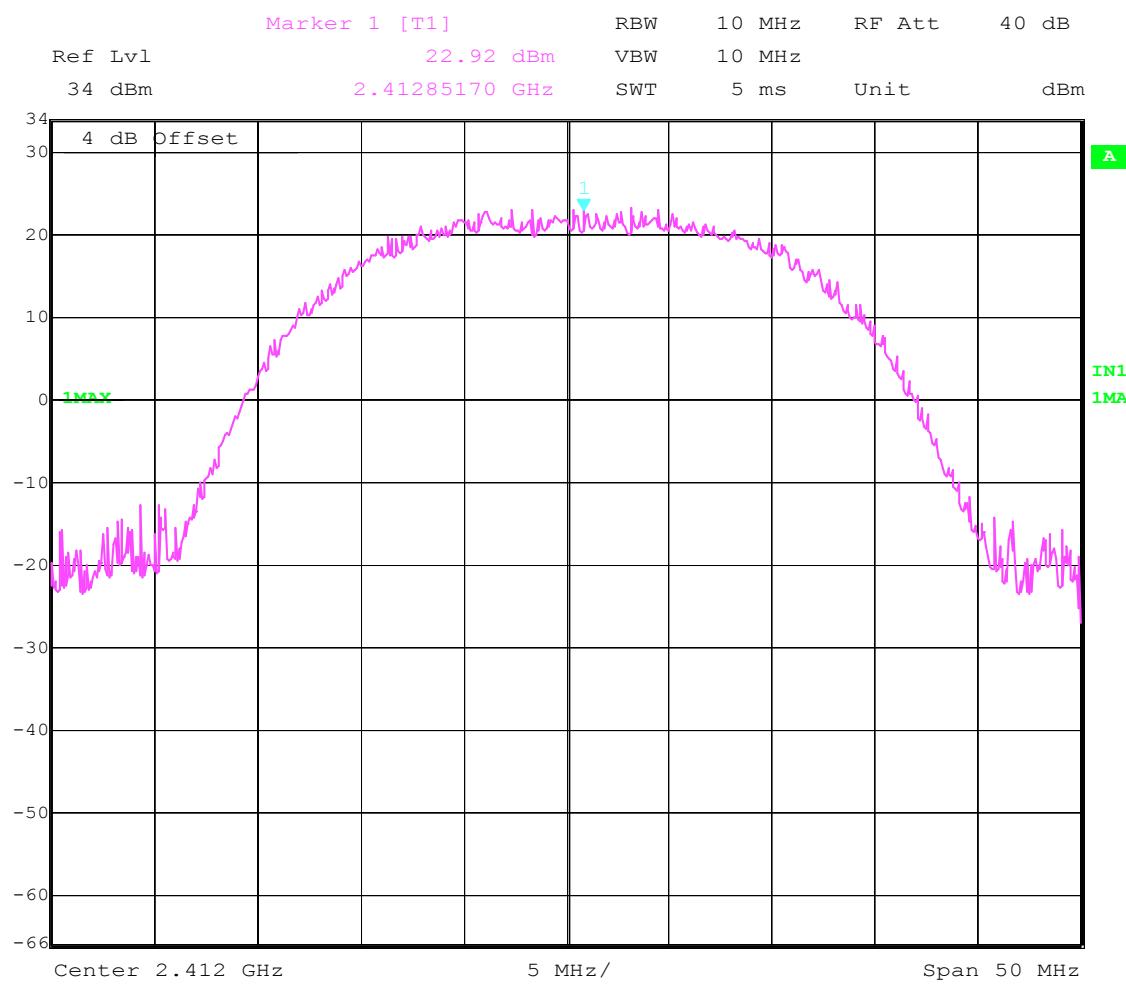
100ms plot – to show repetition of pattern

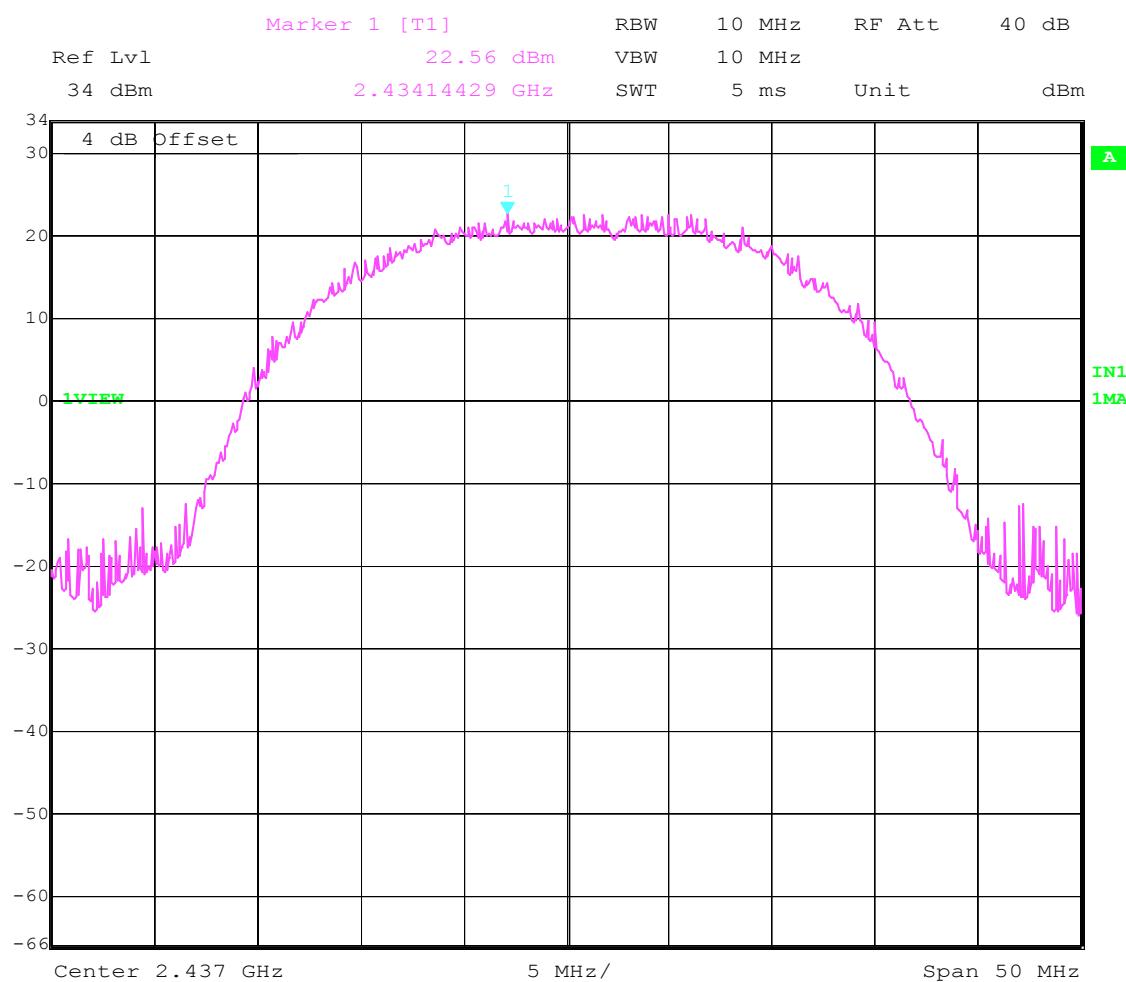
MAXIMUM PEAK OUTPUT POWER**§ 15.247 (b) (1)****(Conducted)****WLAN Model# BCM94306MPSG**

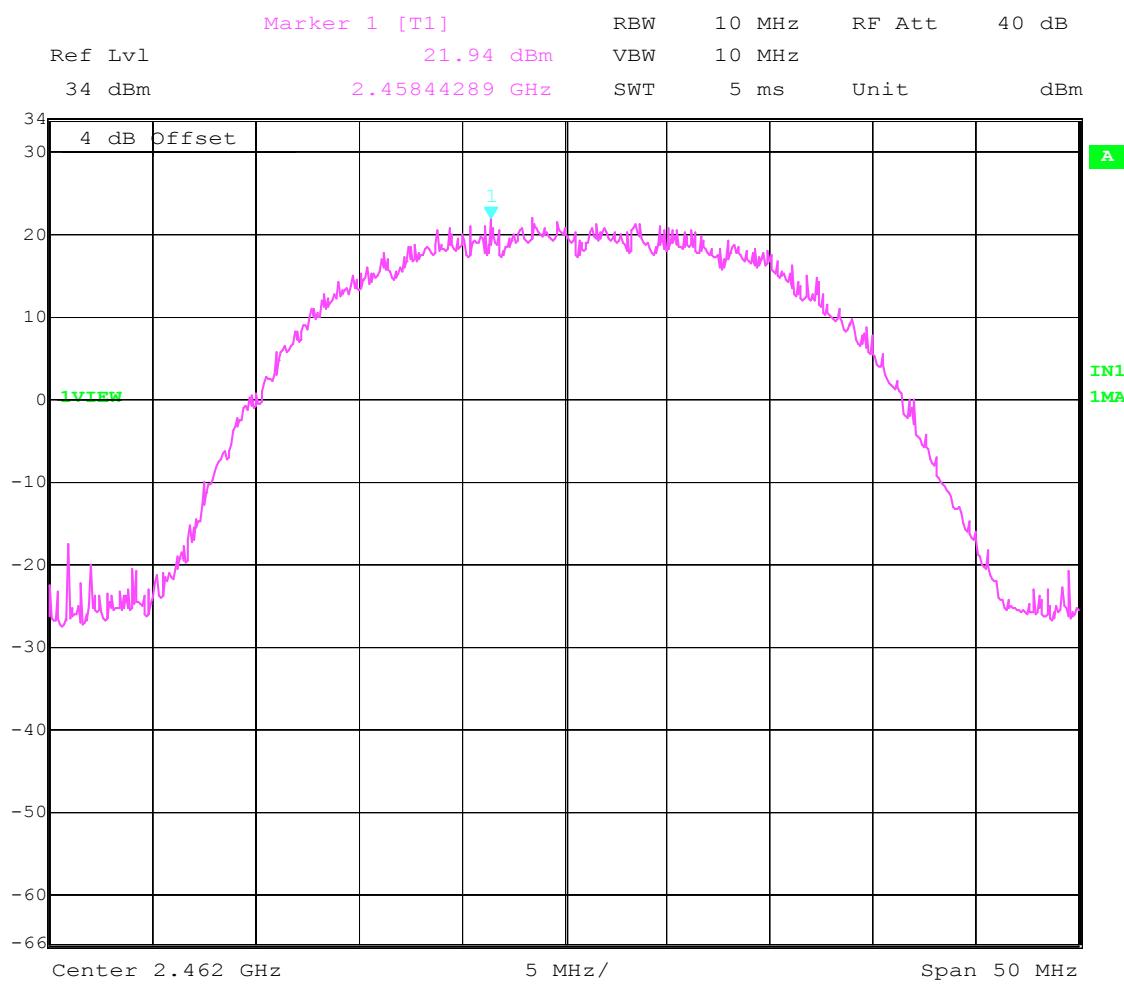
TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)			
Frequency (MHz)		2412	2437	2462	
T_{nom}(23)°C	V_{nom}(3.3) VDC	Pk	*25.10	*24.74	*24.12
Measurement uncertainty		±0.5dBm			

To comply with following;*RBW / VBW should be equal to or greater than the 6dB BW****All measured values are corrected by $10\log(6\text{dB BW} / \text{used BW})$** **(Therefore correction factor of 2.18 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)****WLAN Model# BCM94306MPSG****Lowest Channel: 2412MHz**

PEAK OUTPUT POWER (CONDUCTED)**§15.247 (b)****WLAN Model# BCM94306MPSG****Mid Channel: 2437MHz**

PEAK OUTPUT POWER (CONDUCTED)**§15.247 (b)****WLAN Model# BCM94306MPSG****Highest Channel: 2462MHz**

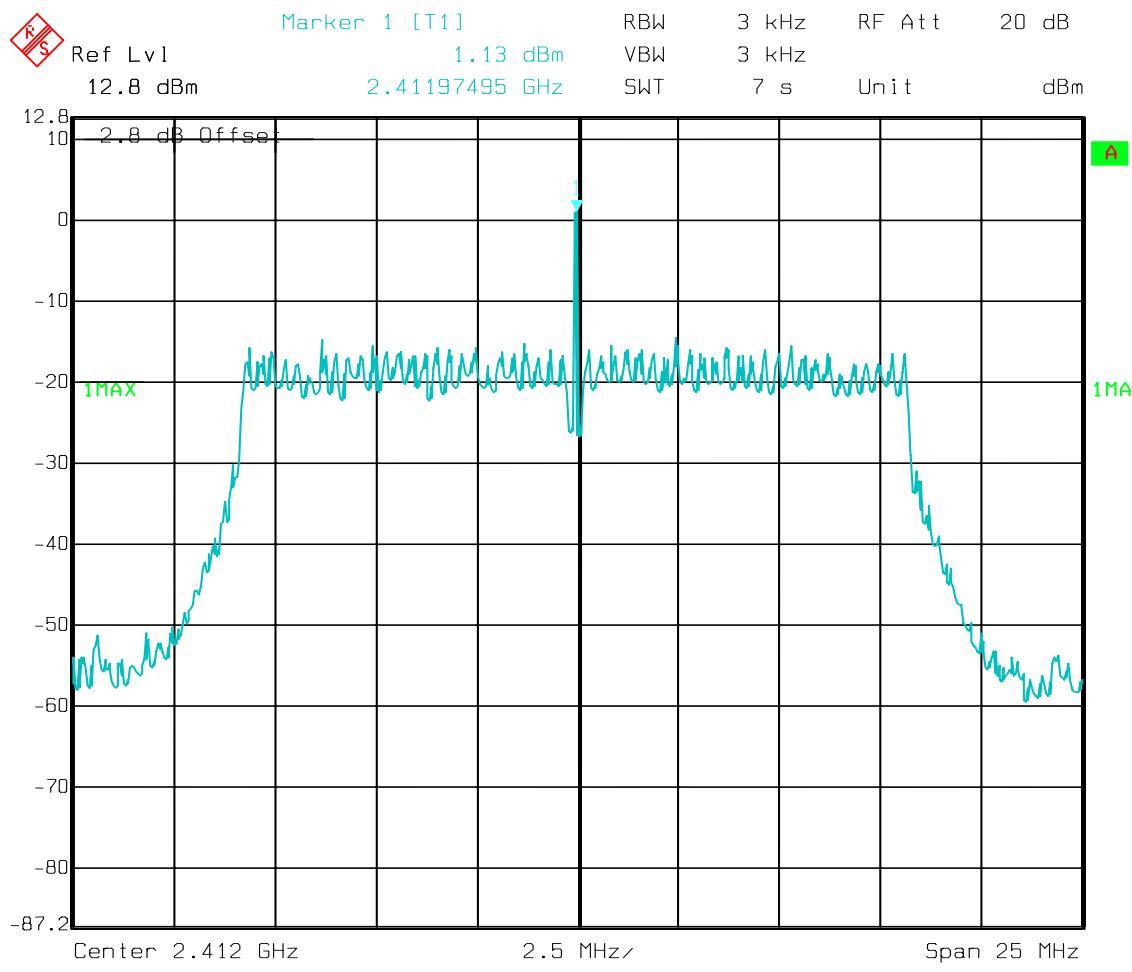
POWER SPECTRAL DENSITY**§15.247 (d)**

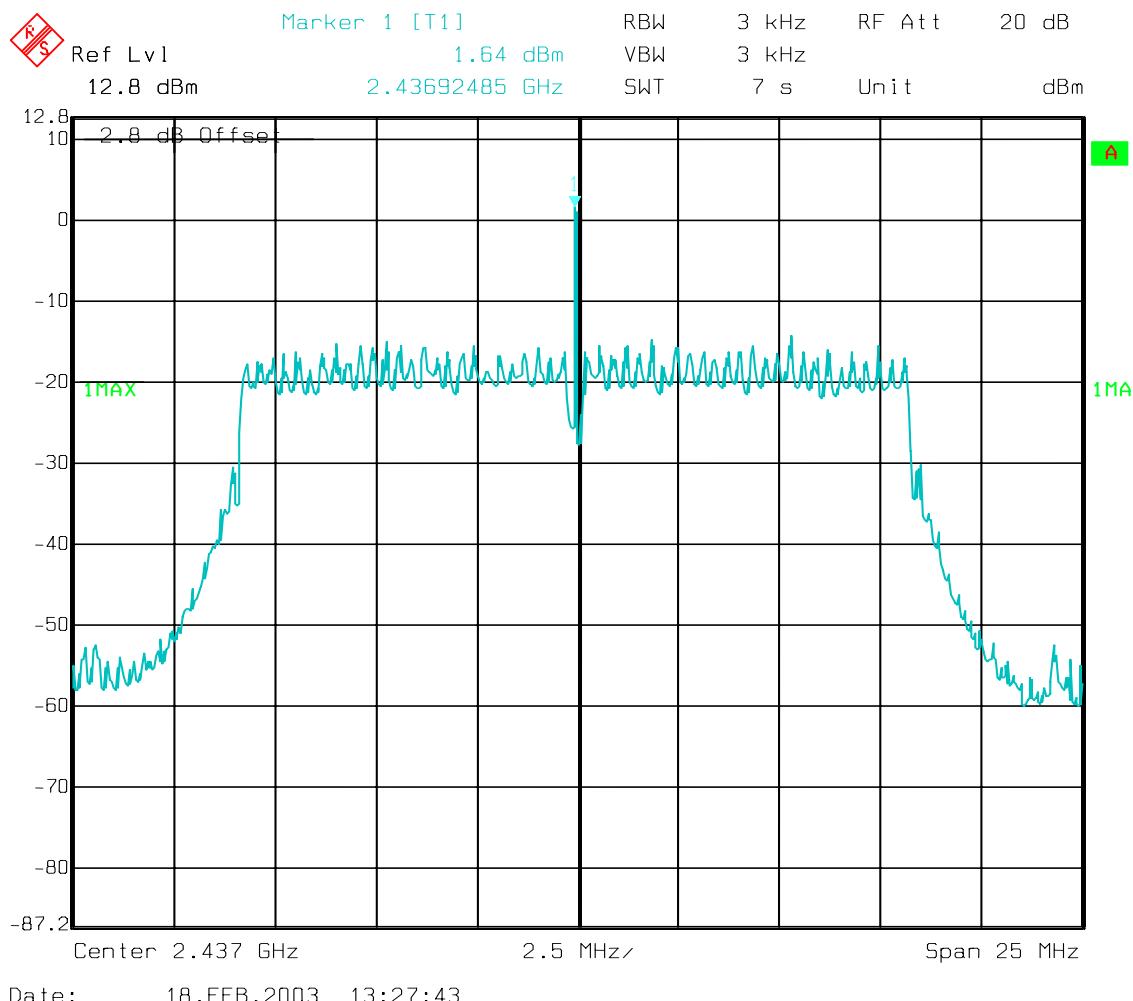
TEST CONDITIONS		POWER SPECTRAL DENSITY (dBm)		
		2412	2437	2462
T_{nom}(23)°C	V_{nom}(3.3) VDC	1.13	1.64	1.28

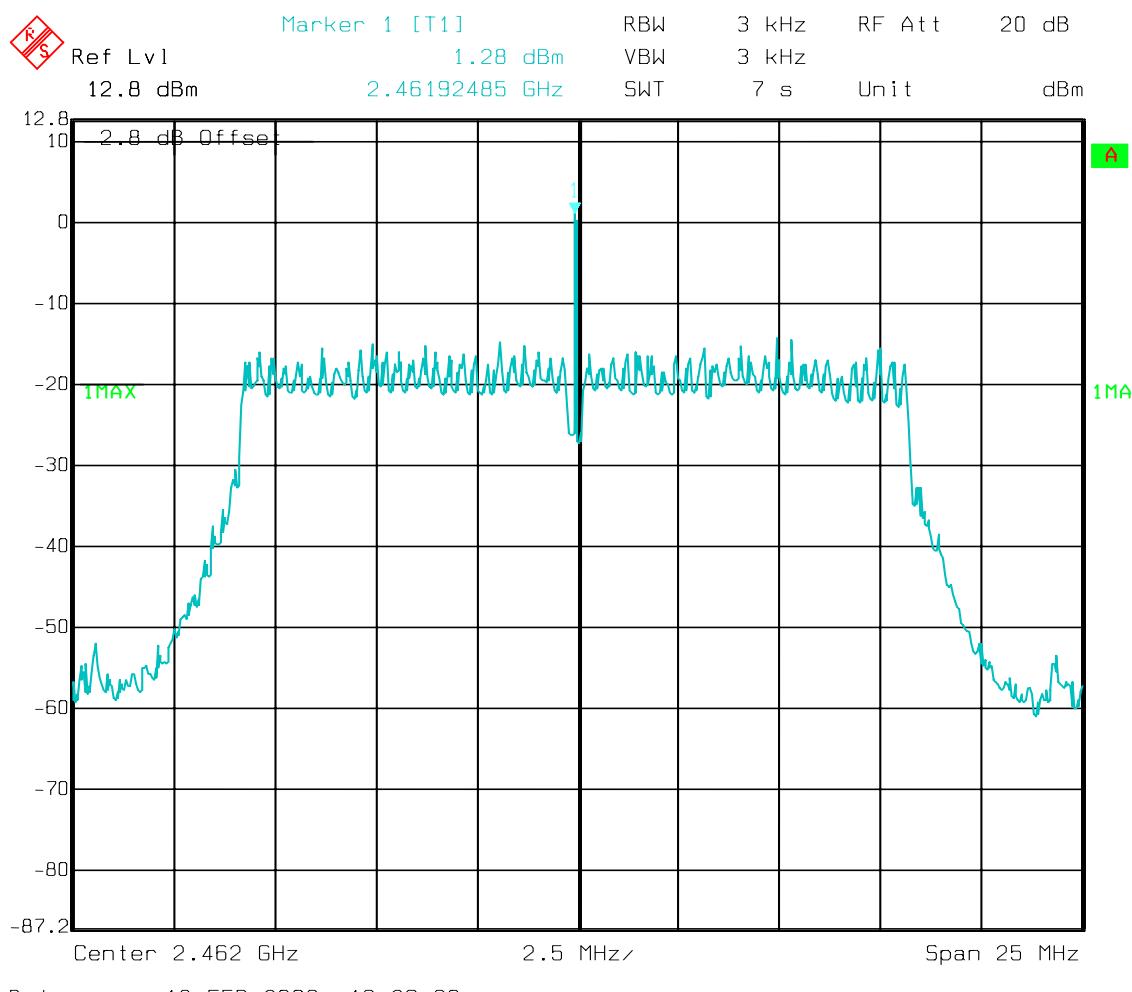
LIMIT**SUBCLAUSE §15.247(d)**

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

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

POWER SPECTRAL DENSITY**§15.247(d)****Lowest Channel: 2412MHz**

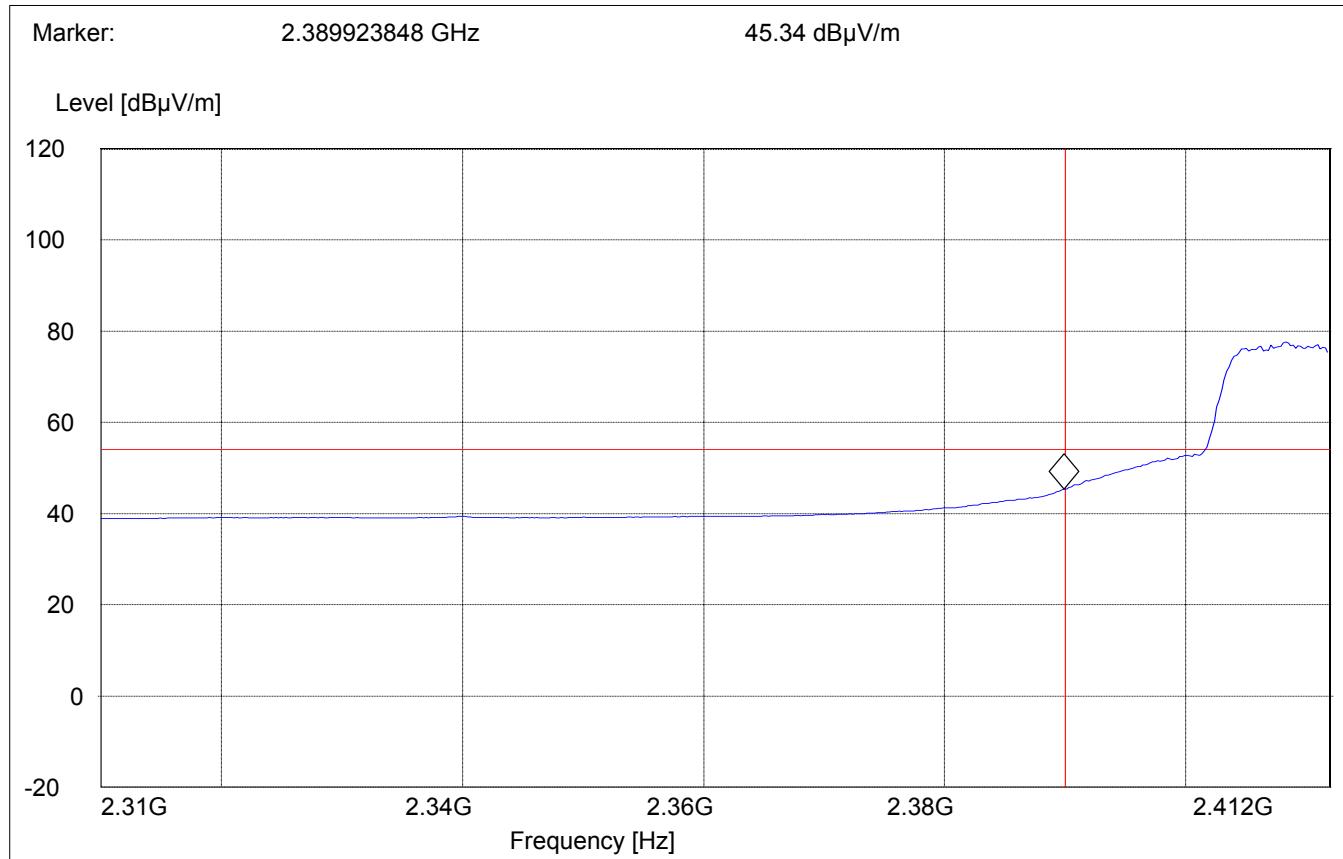
POWER SPECTRAL DENSITY**§15.247(d)****Mid Channel: 2437MHz**

POWER SPECTRAL DENSITY**§15.247(d)****Highest Channel: 2462MHz**

BAND EDGE COMPLIANCE**§15.247 (c)****Low frequency section (spurious in the restricted band 2310 – 2390 MHz)
(Average measurement)****Antenna:**
EUT plane:**Horizontal**
Horizontal with screen vertical @ 90°

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

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)

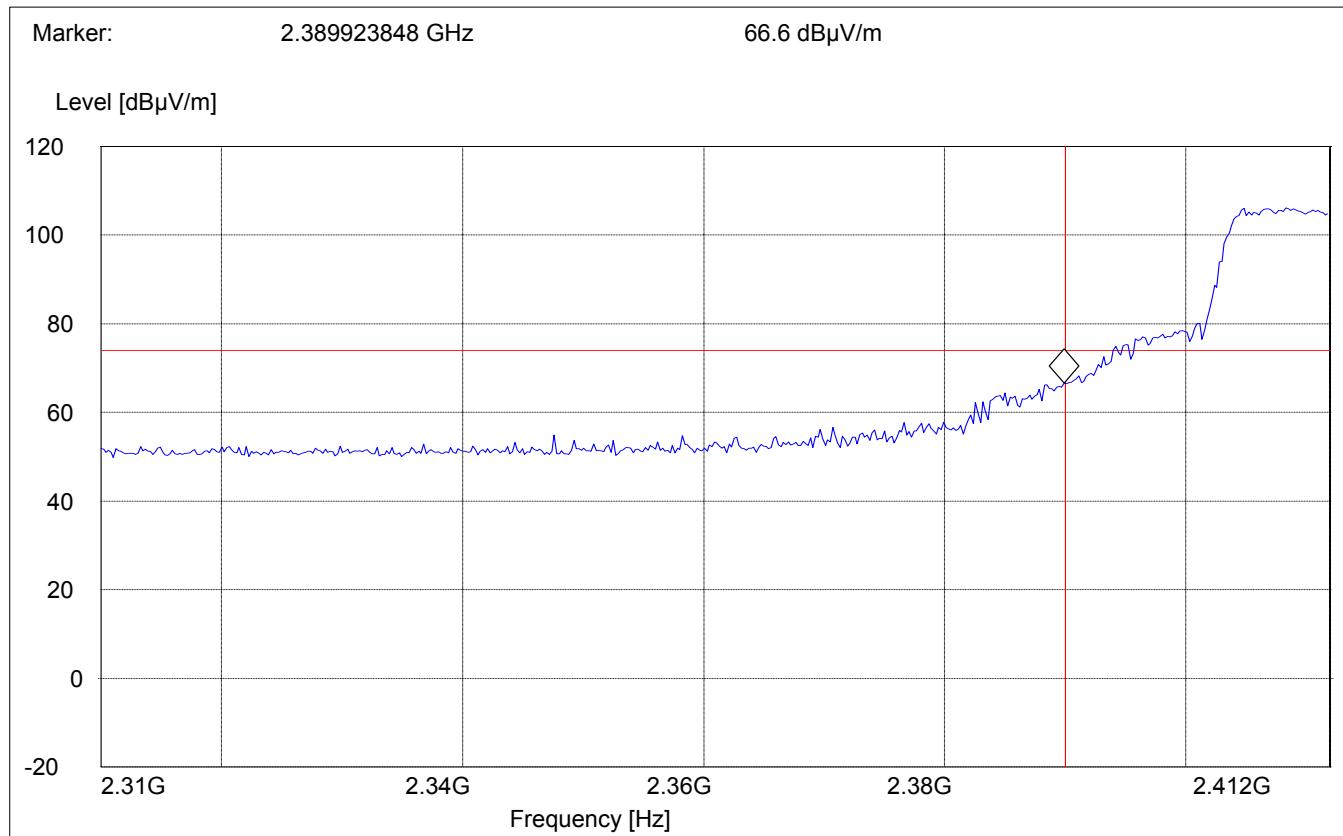


BAND EDGE COMPLIANCE**§15.247 (c)****Low frequency section (spurious in the restricted band 2310 – 2390 MHz)
(Peak measurement)**

Antenna: Horizontal
EUT plane: Horizontal with screen vertical @ 90°

Operating condition : Tx at 2412MHz
SWEEP TABLE : "FCC15.247 LBE_Pk"
Limit Line : 74dB μ V

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)

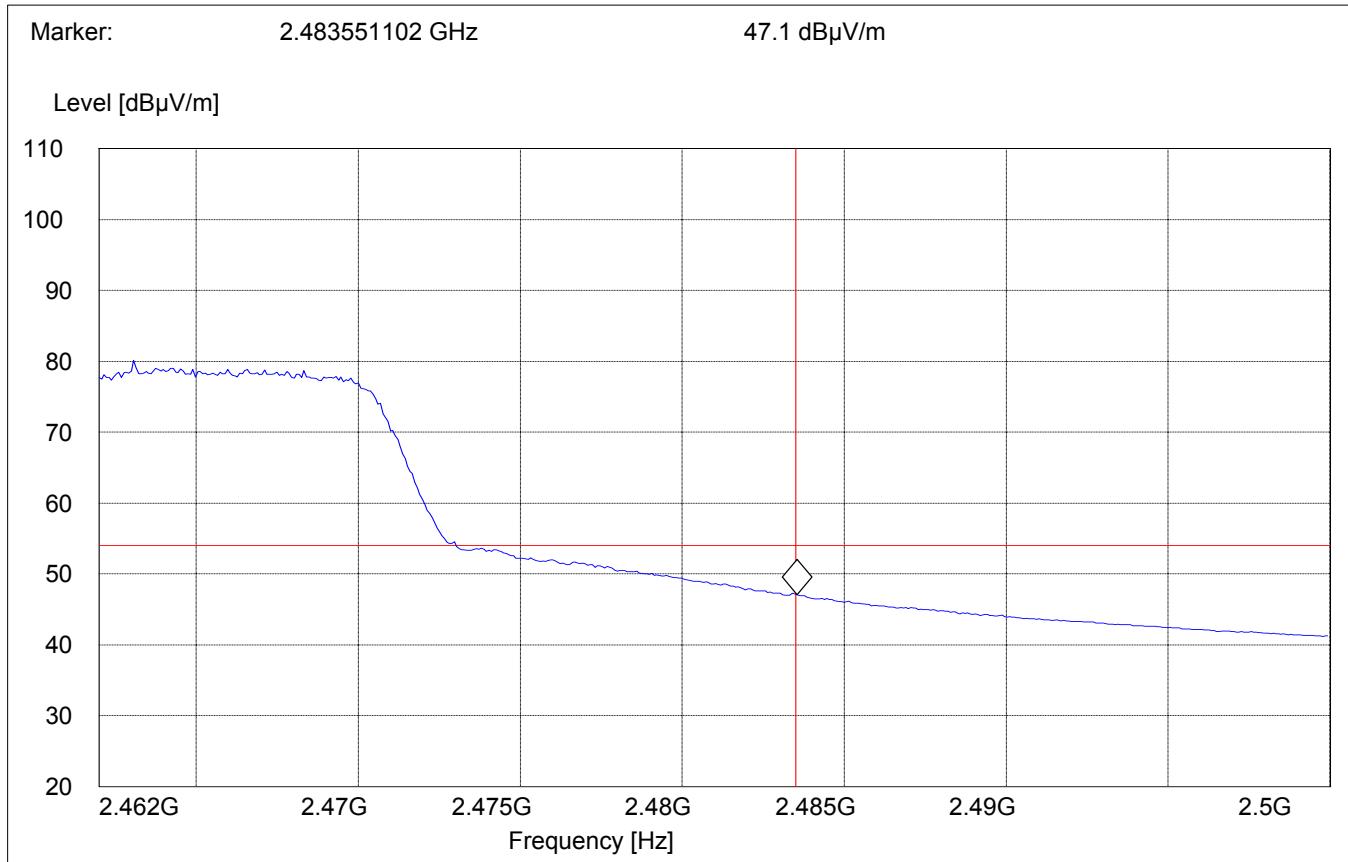


BAND EDGE COMPLIANCE**§15.247 (c)****High frequency section (spurious in the restricted band 2483.5 – 2500 MHz)
(Average measurement)**

Antenna: Horizontal
EUT plane: Horizontal with screen vertical @ 90°

Operating condition : Tx at 2462MHz
SWEEP TABLE : "FCC15.247 HBE_AVG"
Limit Line : 54dB μ V

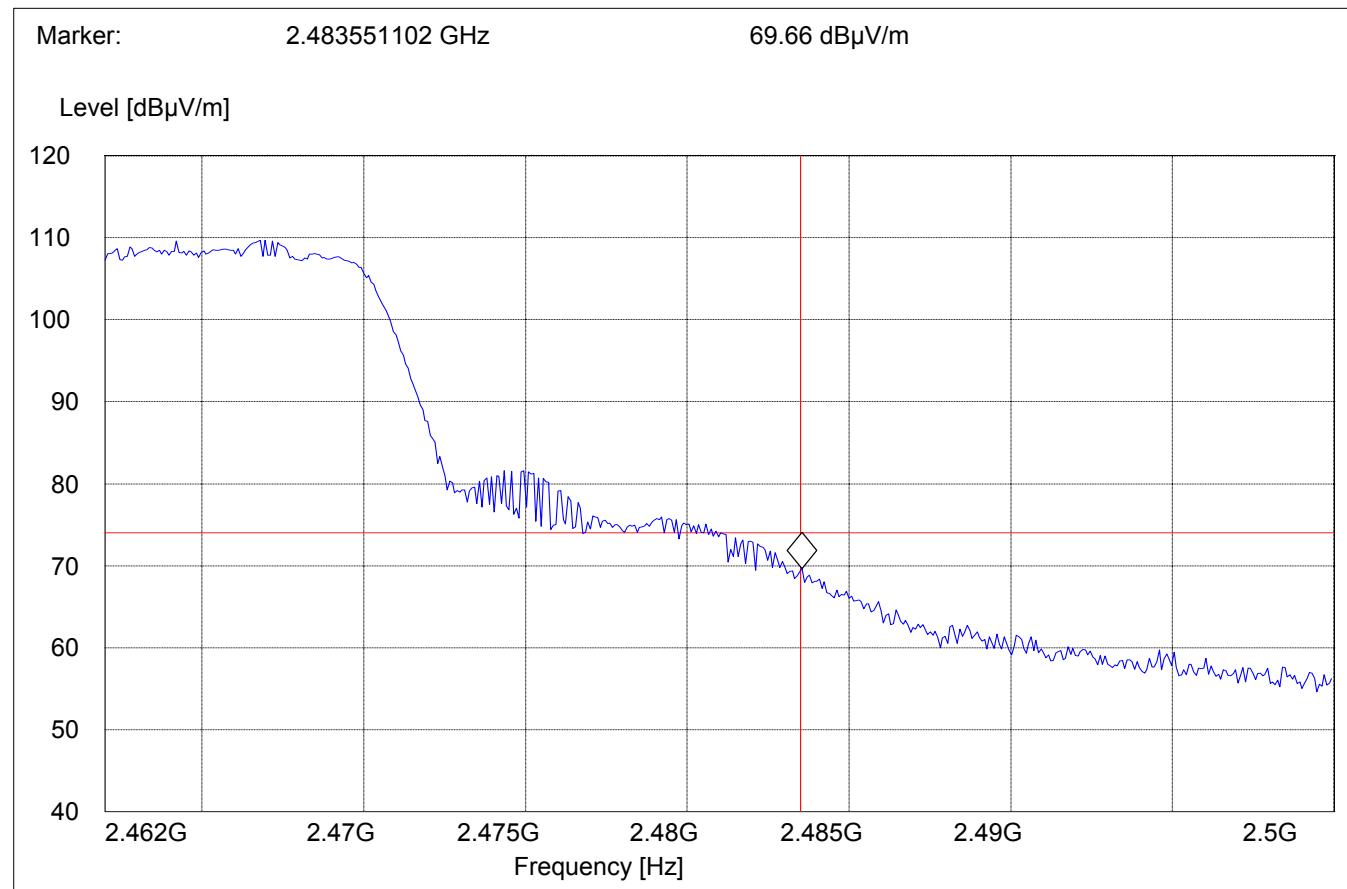
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	10Hz	#326 horn (dBi)



BAND EDGE COMPLIANCE**§15.247 (c)****High frequency section (spurious in the restricted band 2483.5 – 2500 MHz)
(Peak measurement)****Antenna:** **Horizontal****EUT plane:** **Horizontal with screen vertical @ 90°**

Operating condition : Tx at 2462MHz
SWEEP TABLE : "FCC15.247 HBE_PK"
Limit Line : 74dB μ V

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
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 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

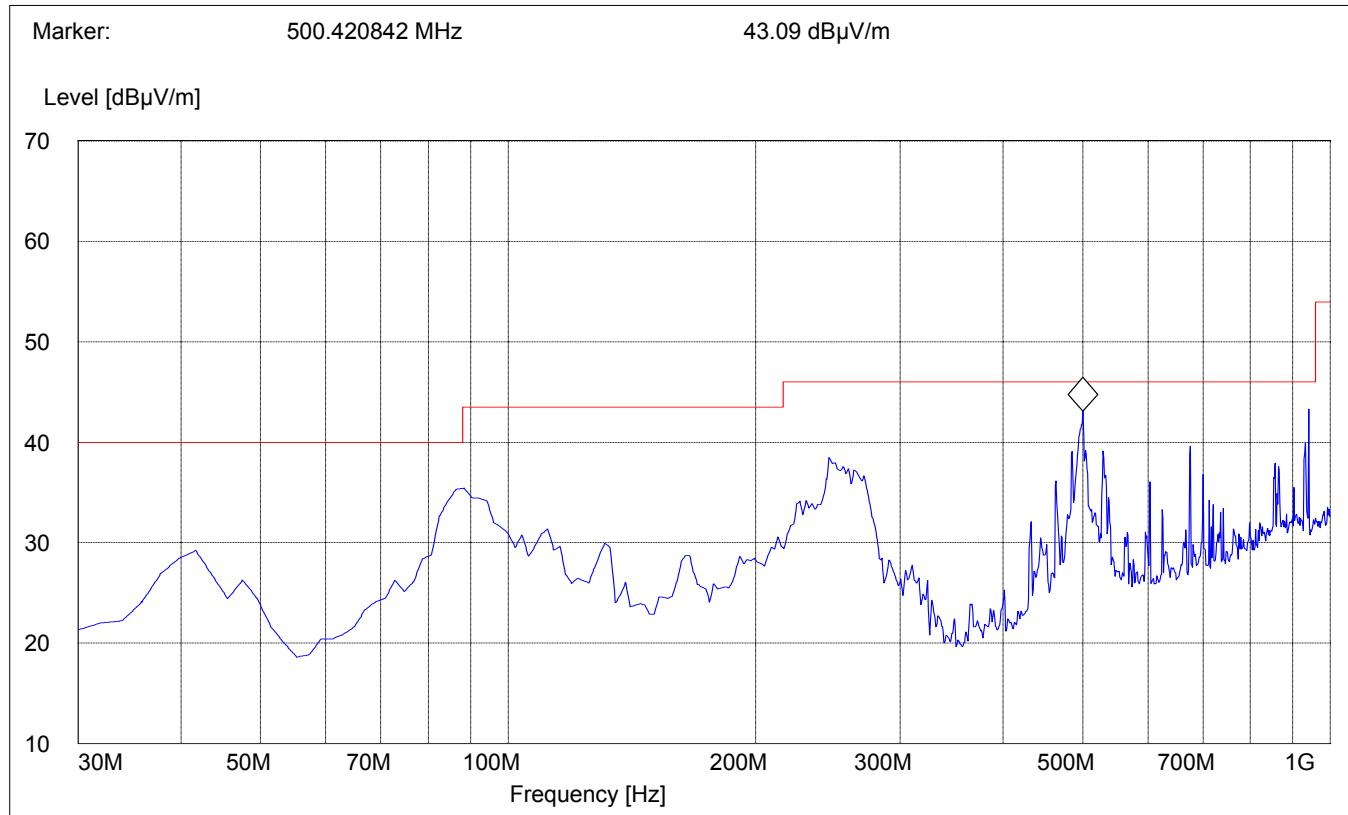
EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)**

Transmit at Lowest channel Frequency 2412MHz			
Frequency (MHz)	Level (dB μ V/m)		
	Peak	Quasi-Peak	Average
SEE PLOTS			
Transmit at Middle channel Frequency 2437MHz			
Frequency (MHz)	Level (dB μ V/m)		
	Peak	Quasi-Peak	Average
SEE PLOTS			
Transmit at Highest channel Frequency 2462MHz			
Frequency (MHz)	Level (dB μ V/m)		
	Peak	Quasi-Peak	Average
SEE PLOTS			

EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Lowest Channel (2412MHz): 30MHz – 1GHz**Antenna: **vertical**EUT plane: **Horizontal with screen vertical @ 90°****Note: This plot is valid for low, mid, high channels (worst-case plot)**

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

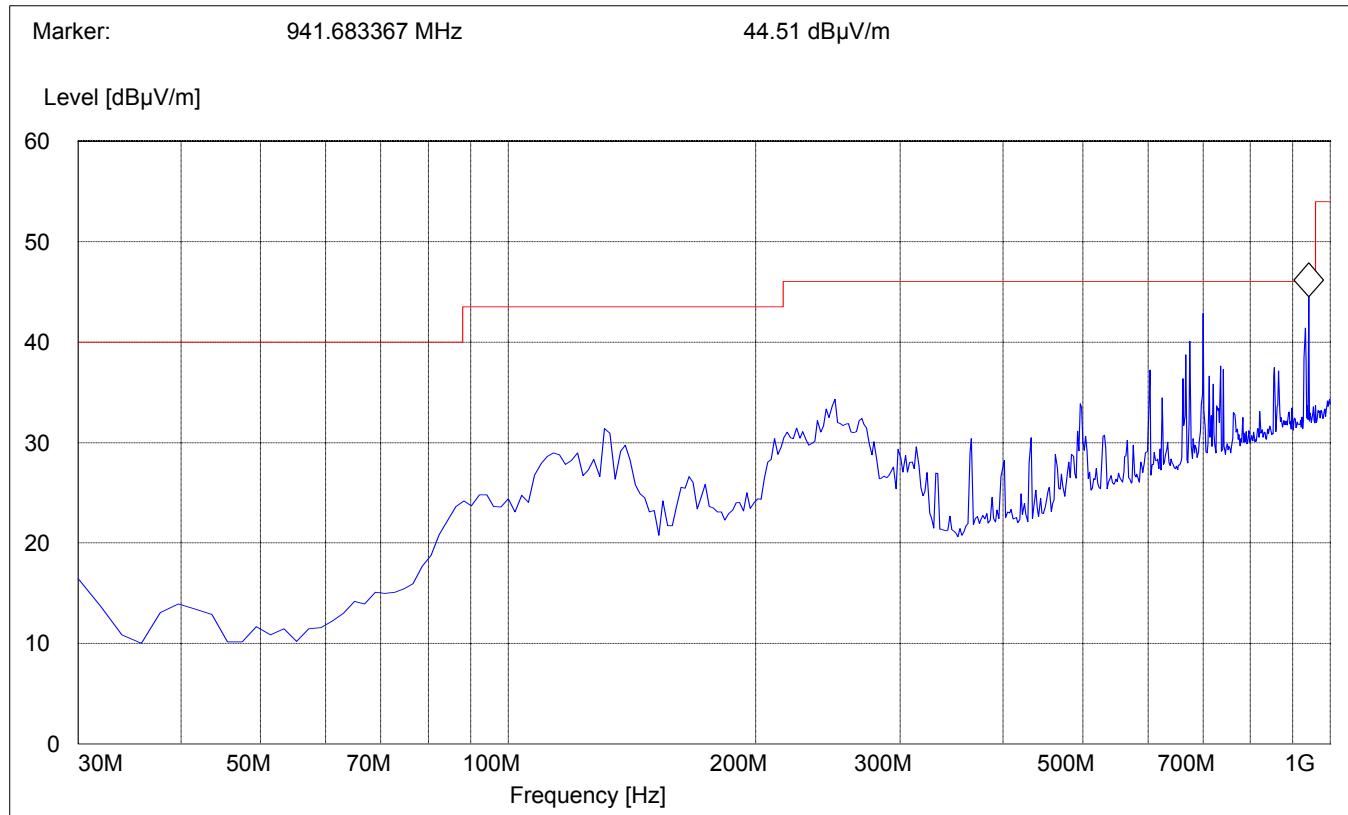
Start Frequency	Stop Frequency	Detector	Meas.	RBW	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Time Coupled	100 kHz	3141-#1186



EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Lowest Channel (2412MHz): 30MHz – 1GHz**Antenna: **Horizontal**EUT plane: **Horizontal with screen vertical @ 90°****Note: This plot is valid for low, mid, high channels (worst-case plot)**

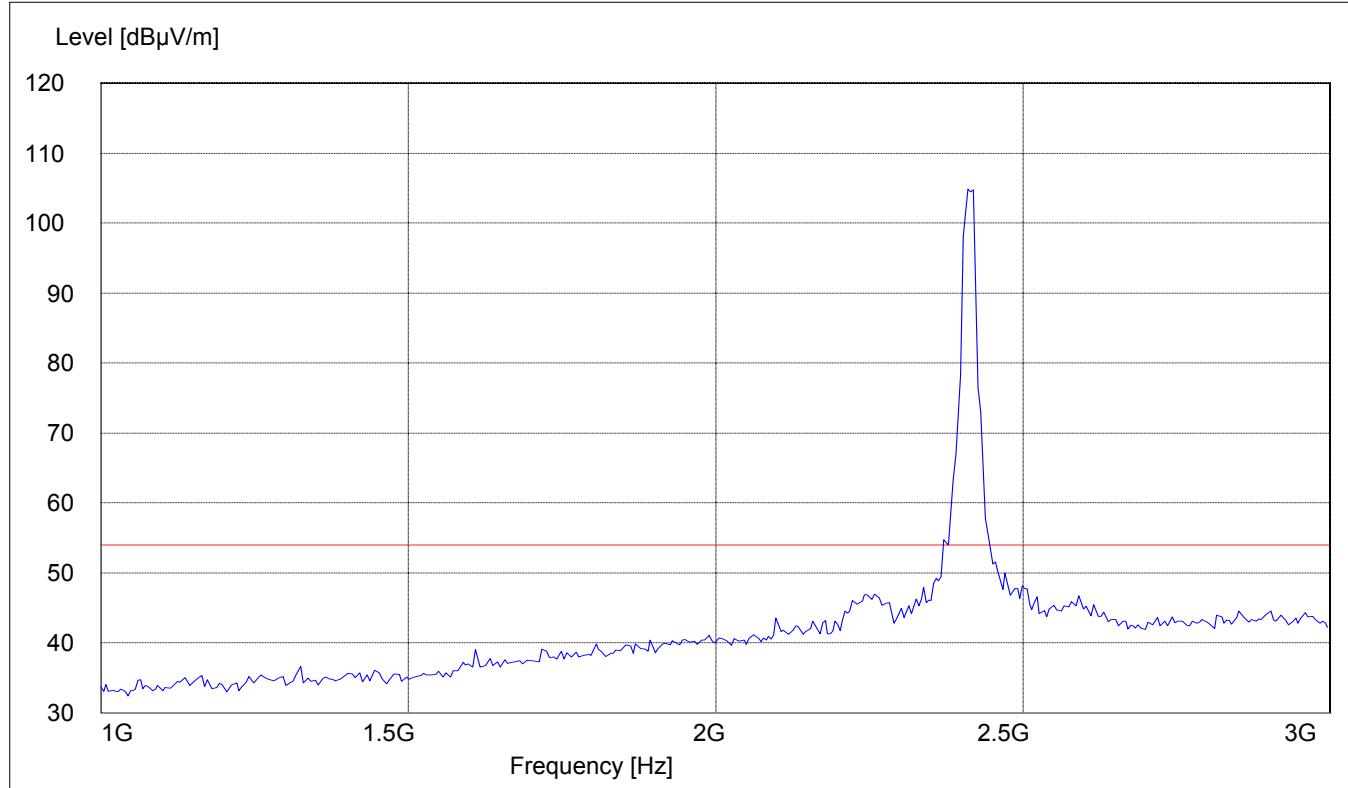
SWEEP TABLE: "WLAN Spuri hi 30-1G"

Start Frequency	Stop Frequency	Detector	Meas.	RBW	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****Antenna:** Horizontal**EUT plane:** Horizontal with screen vertical @ 90°**Note: The peak above the limit line is the carrier freq.****SWEEP TABLE: "WLAN Spuri hi 1-3G"**

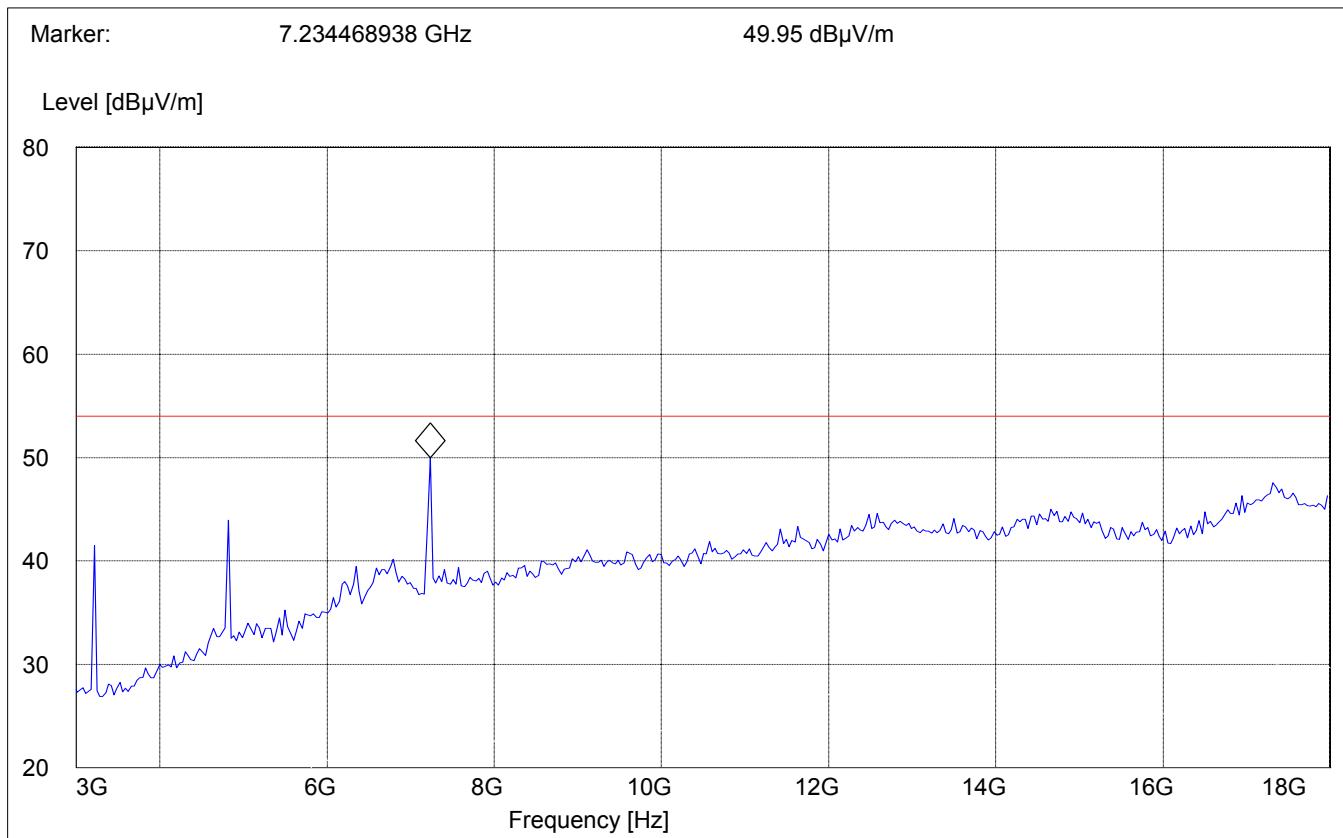
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1 MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Lowest Channel (2412MHz): 3GHz – 18GHz****Antenna:** **Horizontal****EUT plane:** **Horizontal with screen vertical @ 90°**

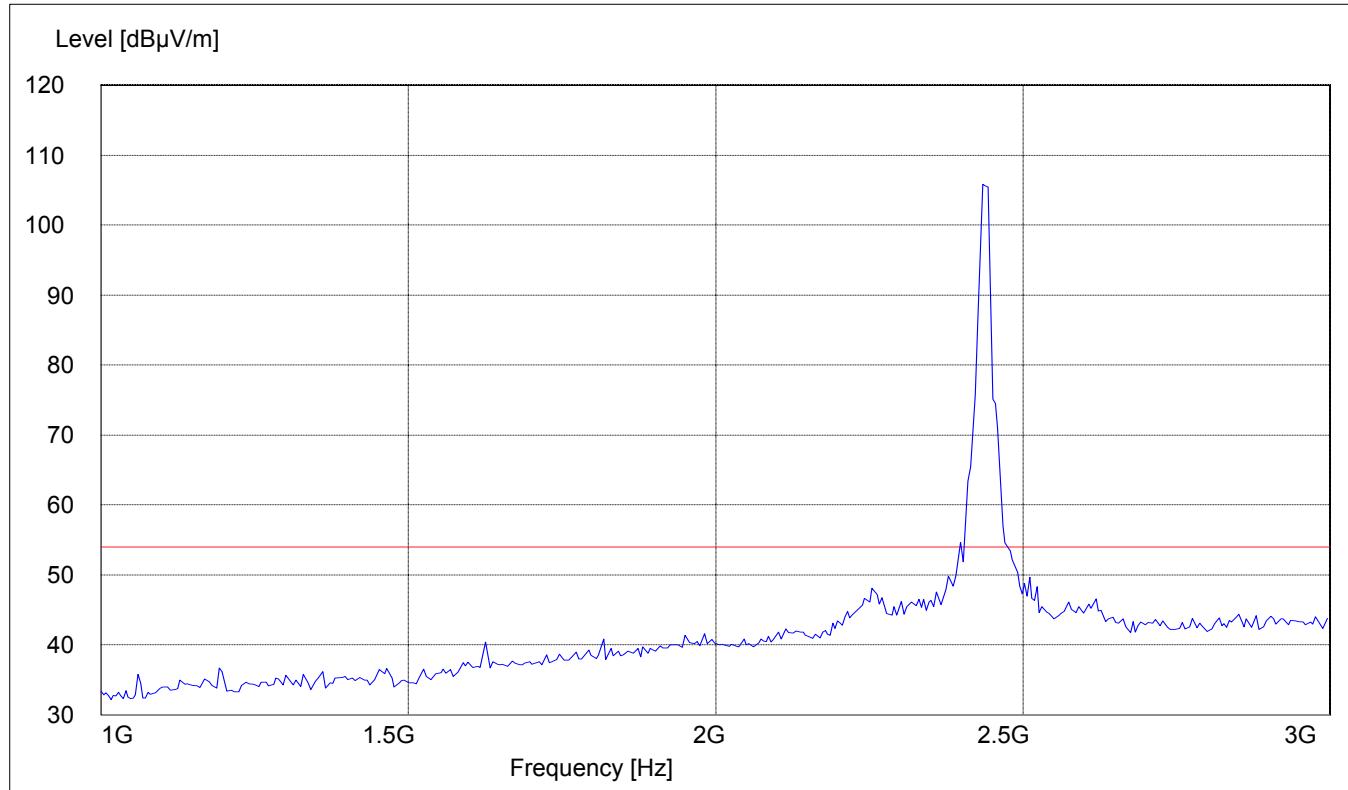
SWEEP TABLE: " WLAN Spuri hi 3-18G"

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



EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Mid Channel (2437MHz): 1GHz – 3GHz****Antenna:** **Horizontal****EUT plane:** **Horizontal with screen vertical @ 90°****Note: The peak above the limit line is the carrier freq.****SWEEP TABLE: " WLAN Spuri hi 1-3G"**

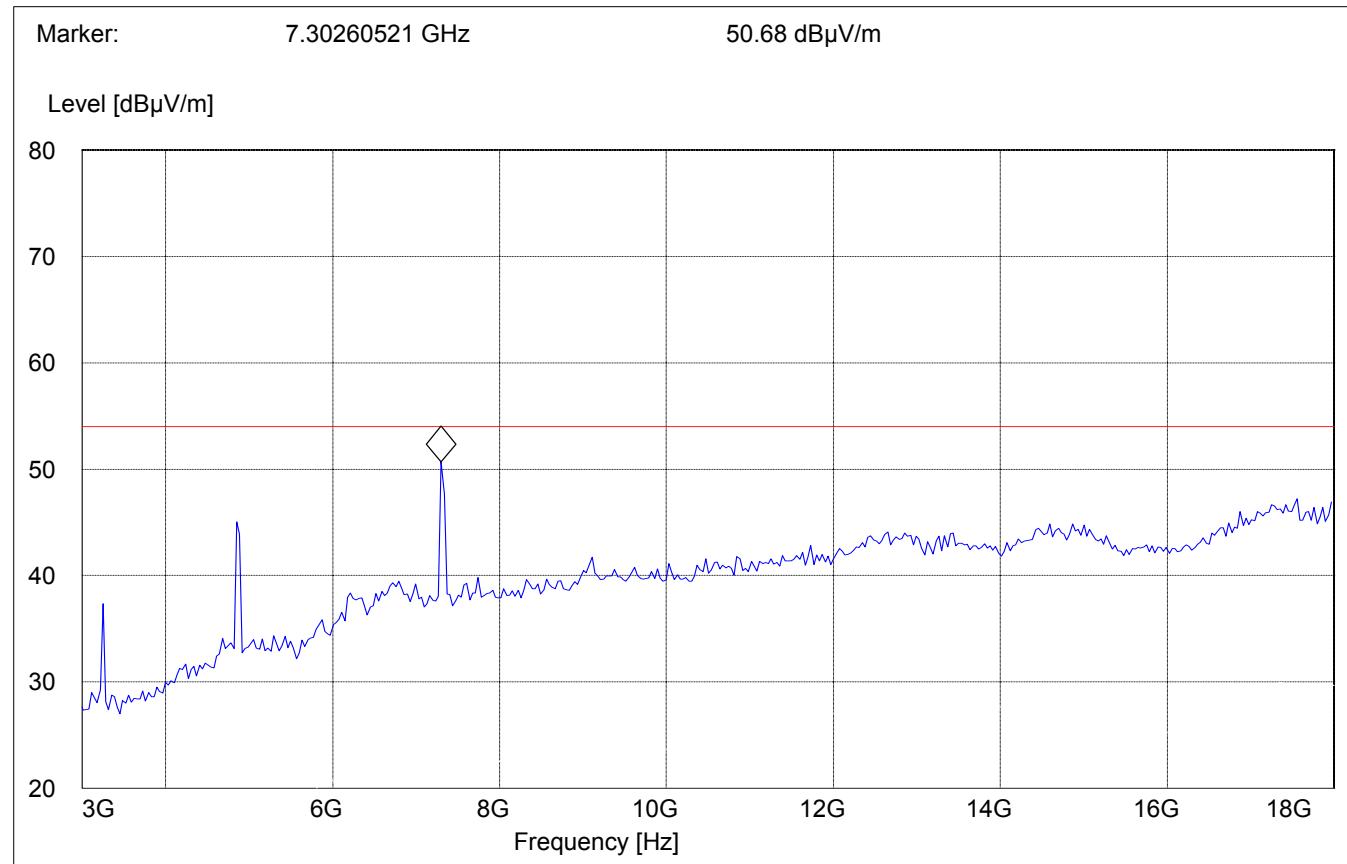
Start Frequency	Stop Frequency	Detector Time	Meas. Bandw.	RBW	VBW	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	1MHz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Mid Channel (2437MHz): 3GHz – 18GHz****Antenna:** **Horizontal****EUT plane:** **Horizontal with screen vertical @ 90°**

SWEEP TABLE: " WLAN 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	1 MHz	#326 horn (dBi)

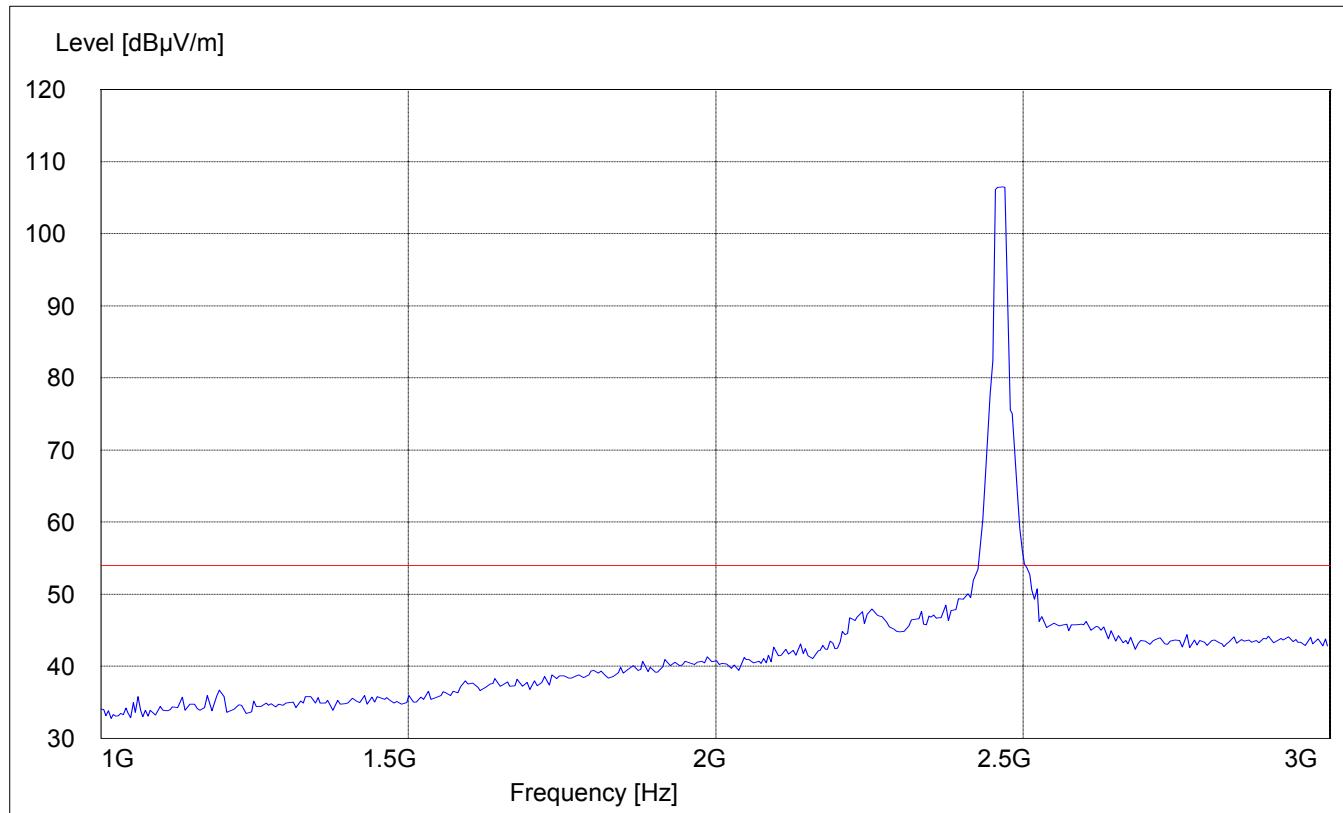


EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Highest Channel (2462MHz): 1GHz – 3GHz**

Antenna: **Horizontal**
EUT plane: **Horizontal with screen vertical @ 90°**

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

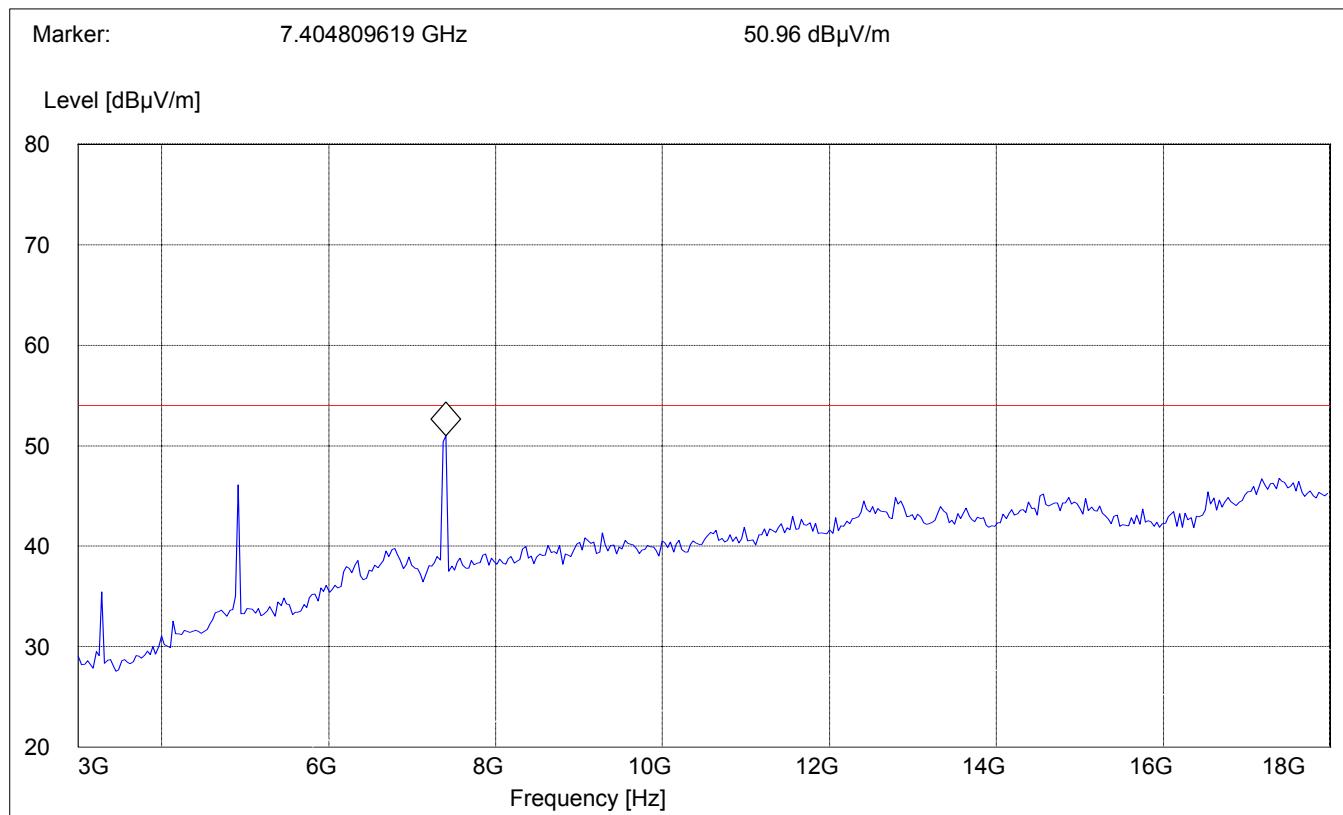
SWEEP TABLE: " WLAN Spuri hi 1-3G"
Start Stop Detector Meas. RBW Transducer
Frequency Frequency Time Bandw. Coupled 1 MHz 1MHz #326 horn (dBi)
1.0 GHz 3.0 GHz MaxPeak



EMISSION LIMITATIONS - Radiated (Transmitter)**§ 15.247 (c) (1)****Highest Channel (2462MHz): 3GHz – 18GHz****Antenna:** **Horizontal****EUT plane:** **Horizontal with screen vertical @ 90°**

SWEEP TABLE: " WLAN 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	1 MHz	#326 horn (dBi)



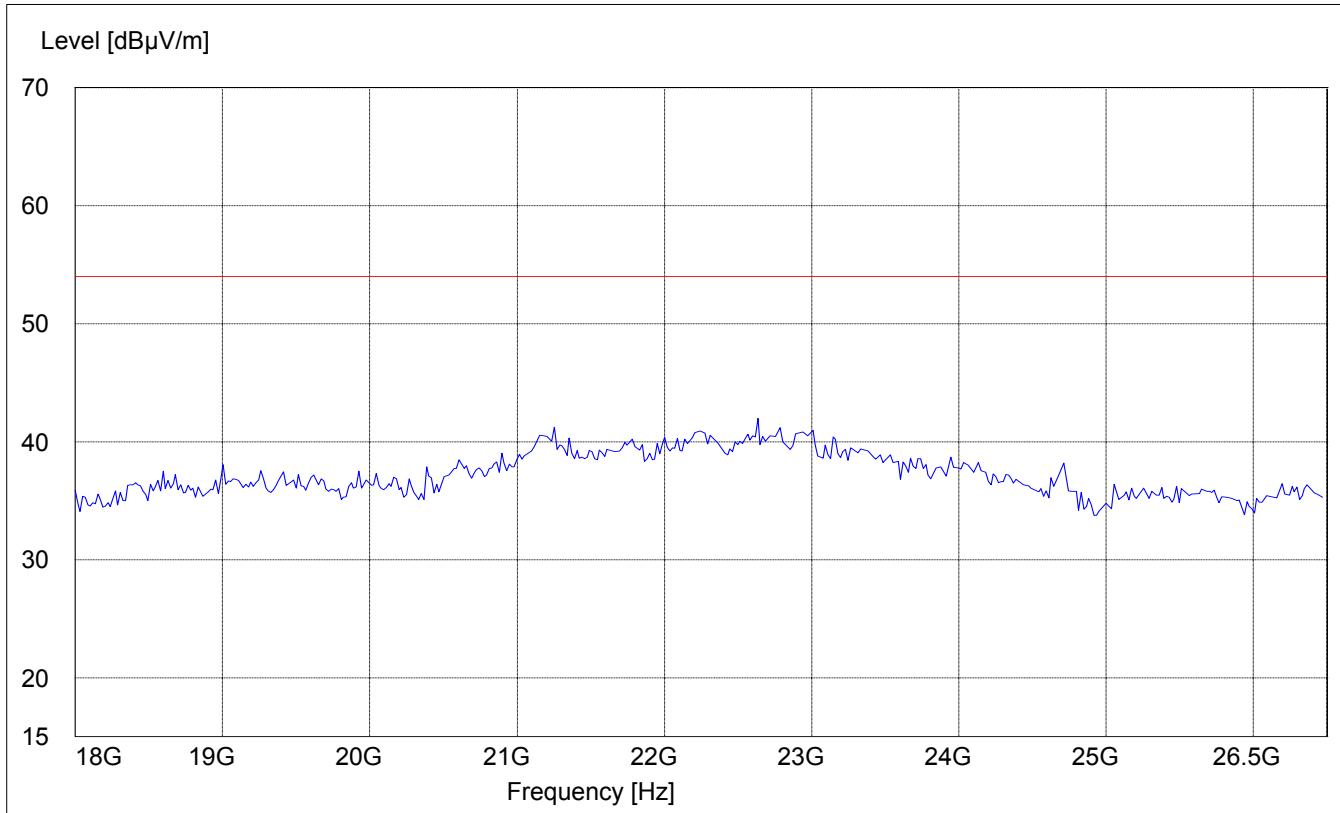
EMISSION LIMITATIONS - Radiated (Transmitter) **§ 15.247 (c) (1)**
18GHz – 25GHz

Antenna: **Horizontal**
EUT plane: **Horizontal with screen vertical @ 90°**

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

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

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



CONDUCTED EMISSIONS
Measured with AC/DC power adapter**§ 15.107/207*****SWEEP TABLE: "55022 cond"***

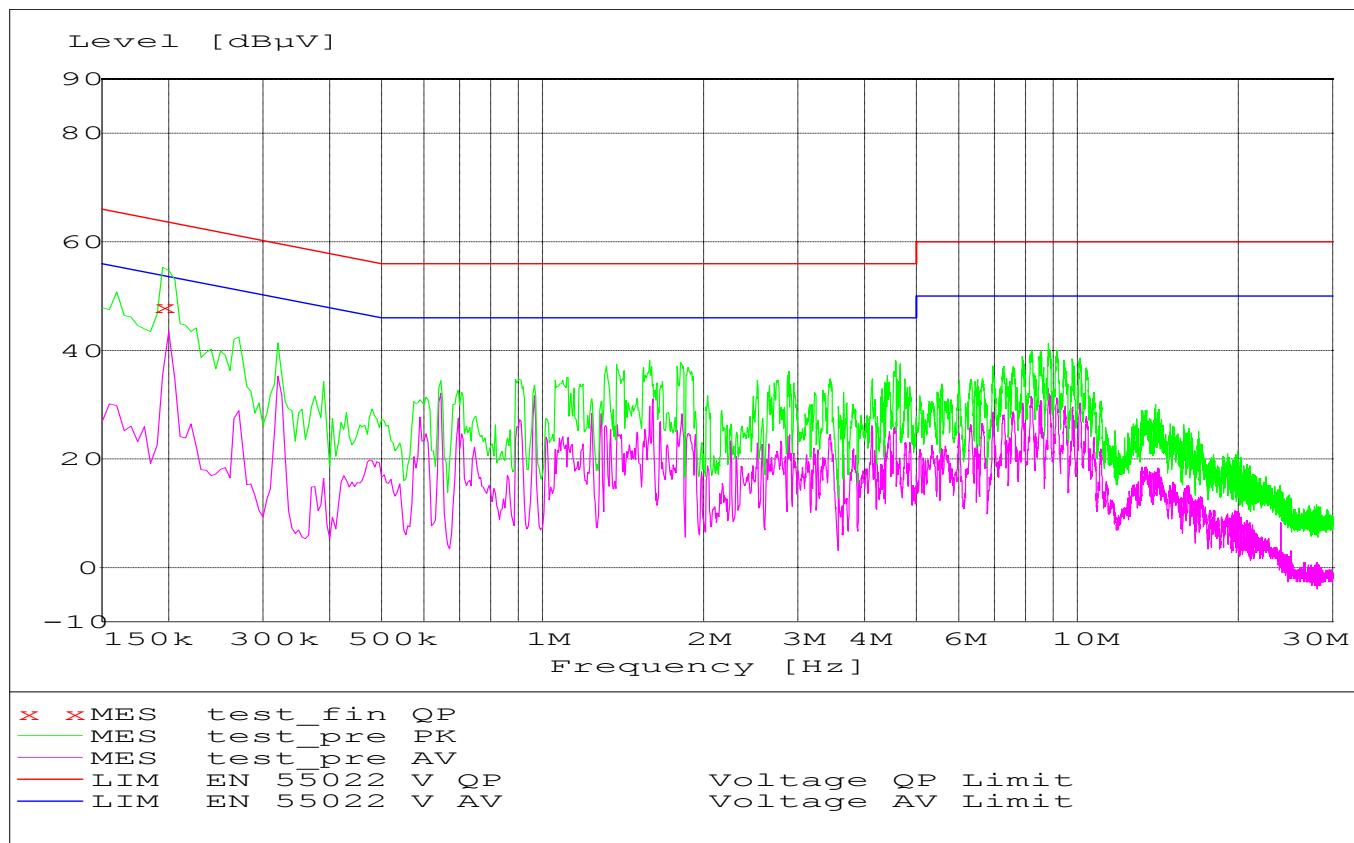
Short Description: EN 55022 for 150KHz-30MHz

Start Frequency	Stop Frequency	Detector	Meas	IF	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 (dB μ V)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

* Decreases with logarithm of the frequency

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

MEASUREMENT RESULT: "test_fin_QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dB μ V	dB	dB μ V	dB		
0.195000	48.00	0.0	64	15.9	N	GND

RECEIVER SPURIOUS RADIATION**§ 15.209****Limits**

Frequency (MHz)	Field strength (μ 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

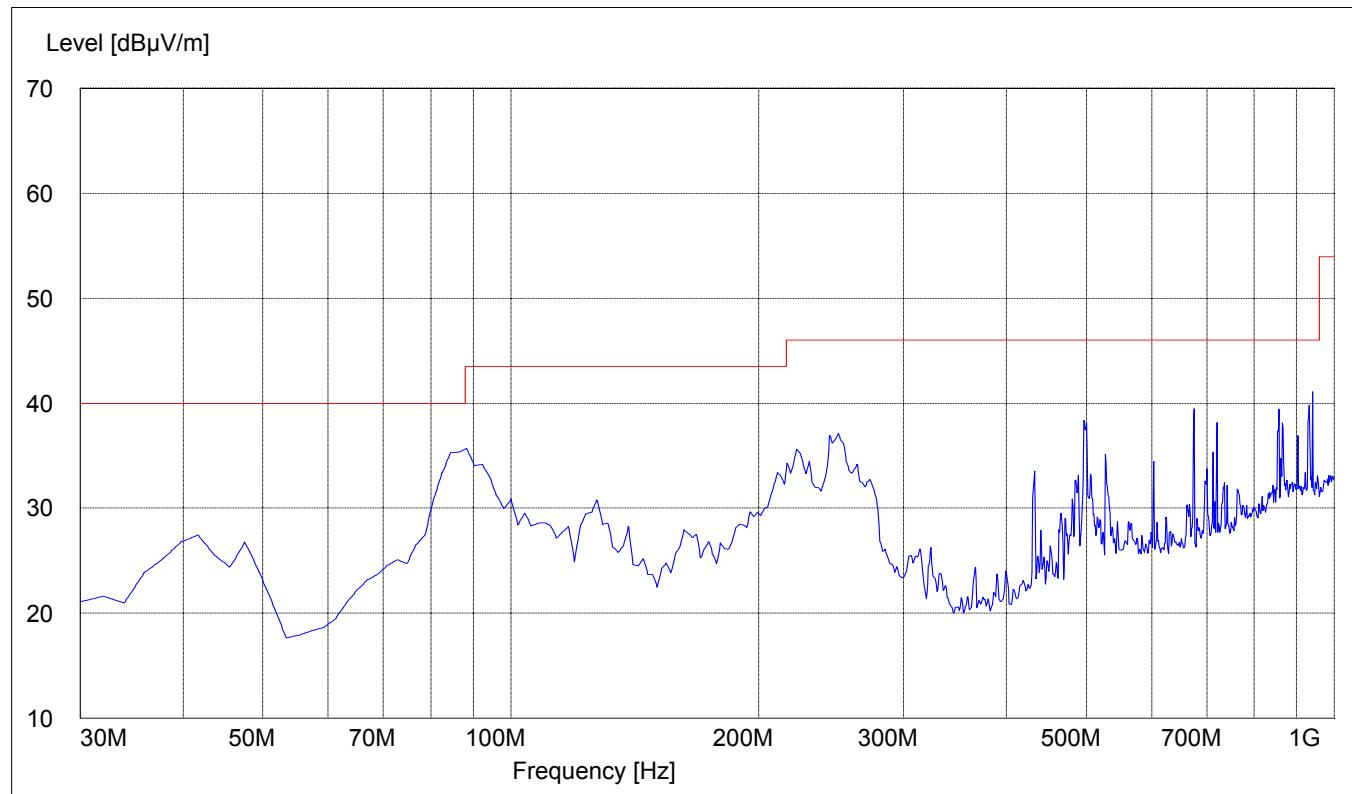
NOTE:

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 3 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.

**RECEIVER SPURIOUS RADIATION
30MHz – 1GHz****§ 15.209**

Antenna: Vertical
EUT plane: Horizontal with screen vertical @ 90°

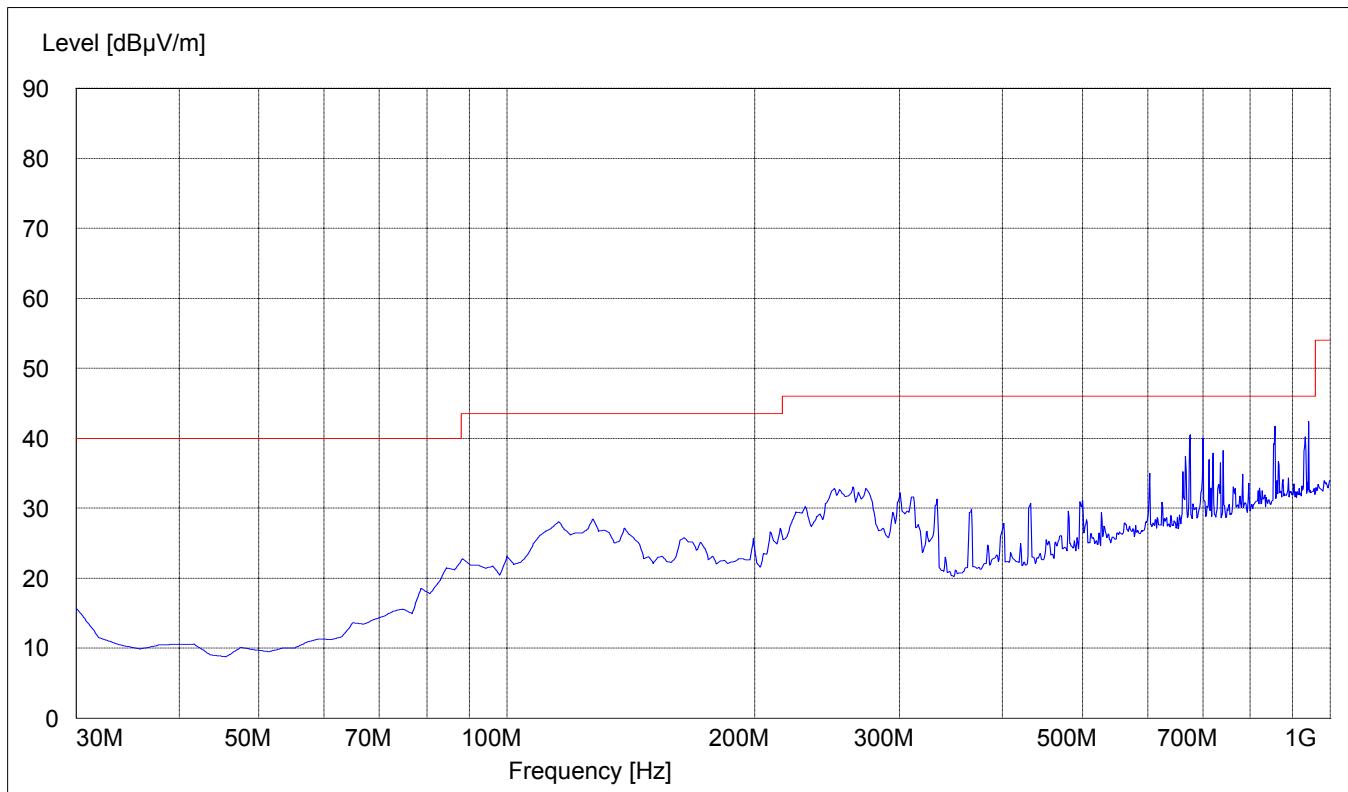
SWEEP TABLE: "WLAN Spuri hi 30-1G"
Start Stop Detector Meas. RBW Transducer
Frequency Frequency Time VBW
30.0 MHz 1.0 GHz MaxPeak Coupled 100 kHz 3141-#1186



**RECEIVER SPURIOUS RADIATION
30MHz – 1GHz****§ 15.209**

Antenna: **Horizontal**
EUT plane: **Horizontal with screen vertical @ 90°**

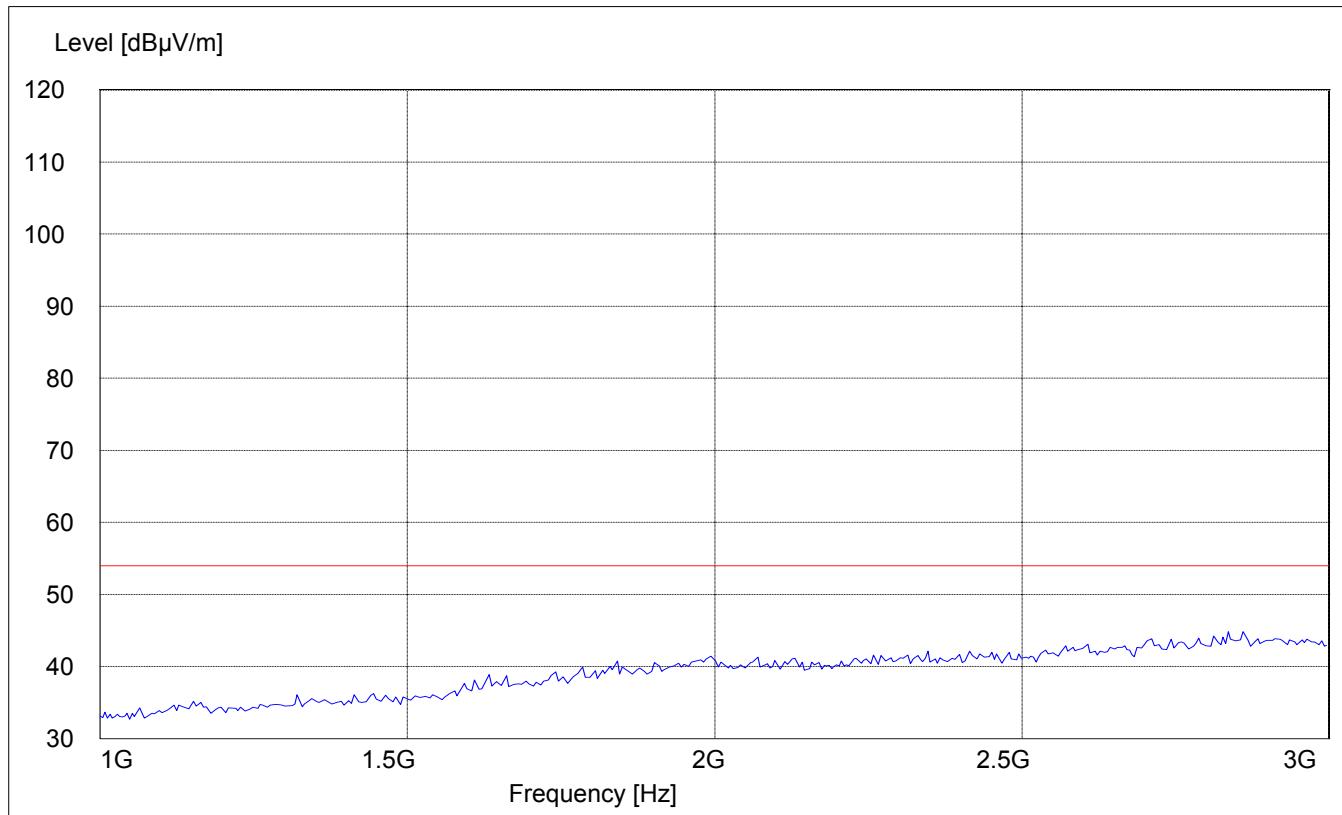
SWEEP TABLE: "WLAN Spuri hi 30-1G"
Start Stop Detector Meas. RBW Transducer
Frequency Frequency Time VBW
30.0 MHz 1.0 GHz MaxPeak Coupled 100 kHz 3141-#1186



RECEIVER SPURIOUS RADIATION
1GHz – 3GHz
Peak Measurement**§ 15.209**

Antenna: Horizontal
EUT plane: Horizontal with screen vertical @ 90°

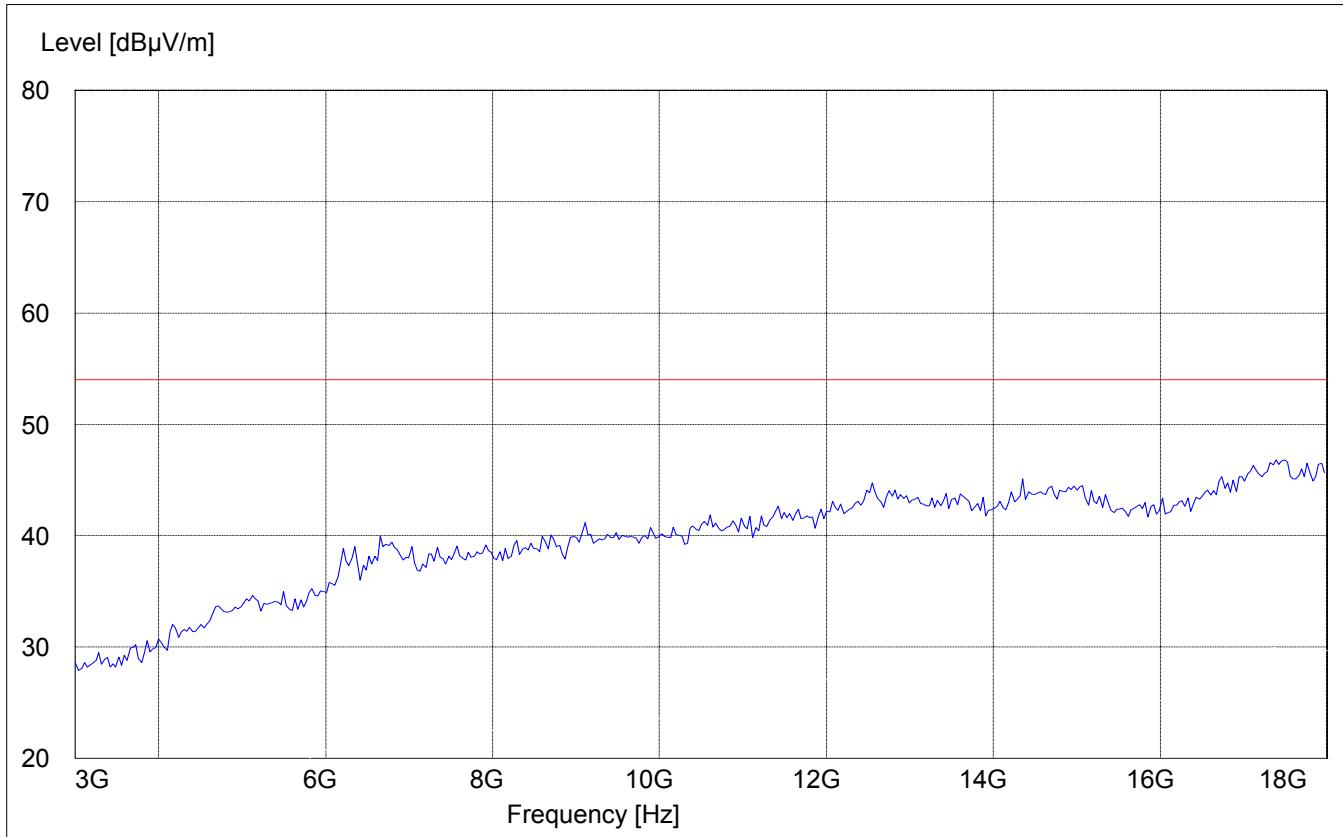
SWEEP TABLE: "WLAN Spuri hi 1-3G"
Start Stop Detector Meas. RBW Transducer
Frequency Frequency Time Bandw. VBW
1.0 GHz 3.0 GHz MaxPeak Coupled 1 MHz 1MHz #326 horn (dBi)



**RECEIVER SPURIOUS RADIATION
3GHz – 18GHz****§ 15.209**

Antenna: **Horizontal**
EUT plane: **Horizontal with screen vertical @ 90°**

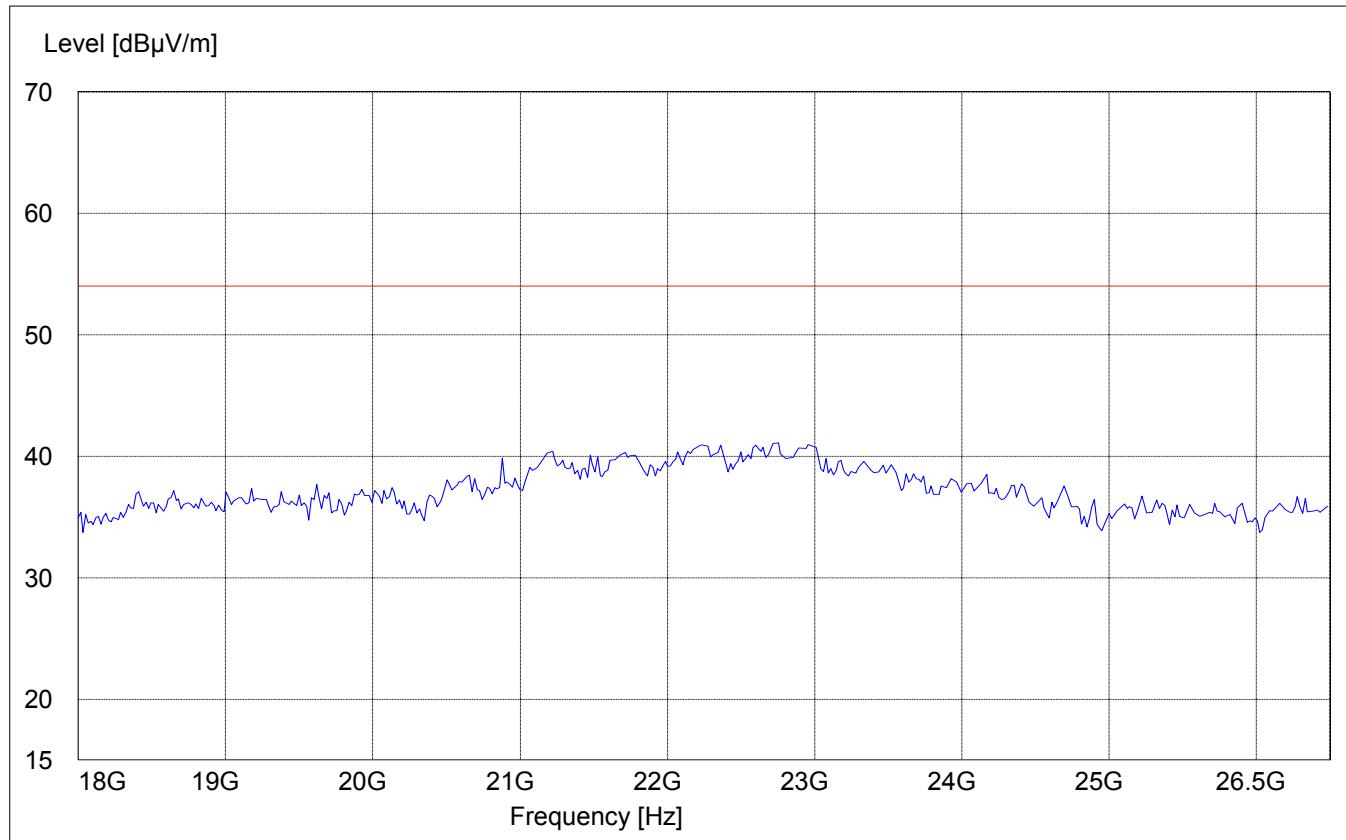
SWEEP TABLE: "WLAN Spuri hi 3-18G"
Start Stop Detector Meas. RBW Transducer
Frequency Frequency Time Bandw. VBW
3.0 GHz 18 GHz MaxPeak Coupled 1 MHz #326 horn (dBi)



**RECEIVER SPURIOUS RADIATION
18GHz – 25GHz****§ 15.209**

Antenna: **Horizontal**
EUT plane: **Horizontal with screen vertical @ 90°**

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

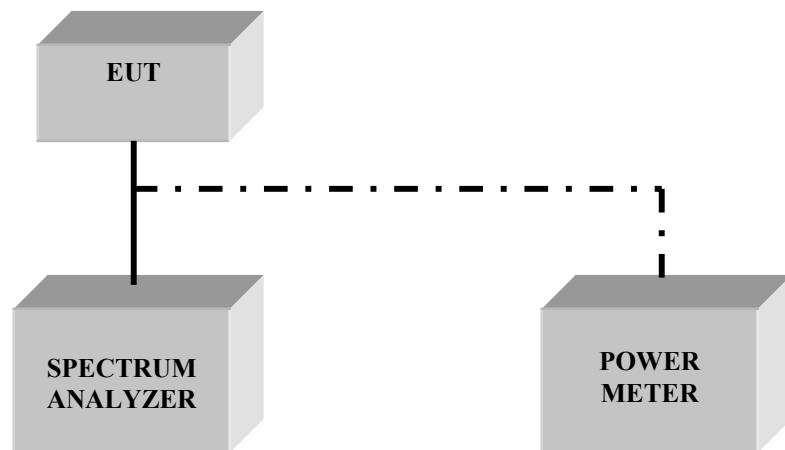


TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

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**ANECHOIC CHAMBER**