



FCC Test Report

Test report no.: EMC_856FCC15.247_2005_BT

FCC Part 15.247 for FHSS systems / CANADA RSS-210
Model: PCG-4E1L
FCC ID: AK8PCG4E1L
IC: 409B-PCG4E1L



TTI-P-G 081/94-A0

Accredited according to **ISO/IEC 17025**



**Bluetooth Qualification
Test Facility
(BQTF)**



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

Table of Contents

1	General information
1.1	Notes
1.2	Testing laboratory
1.3	Details of applicant
1.4	Application details
1.5	Test item
1.6	Test standards
2	Technical test
2.1	Summary of test results
2.2	Test report
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: Neelesh Raj****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 : SONY CORPORATION
Street : 6-7-35, Kitashinagawa, Shinagawa-Ku
City / Zip Code : Tokyo 141-0001
Country : Japan
Contact : Takumi Ozawa
Telephone : +81-3-5795-8716
Fax : +81-3-5795-8981
e-mail : ozawa@sm.sony.co.jp

1.4 Application details

Date of receipt test item : 2005-02-22
Date of test : 2005-02-22/23/24/25, 2005-03-03

1.5 Test item

Marketing Name : PCG-4E1L
Model No. : PCG-4E1L
Description : [Laptop computer with GSM, WLAN & BT radios.](#)
HW / SW version : FP1 / P1A41
FCC-ID : AK8PCG4E1L
IC ID : 409B-PCG4E1L

Additional information

Frequency : 2402-2480MHz
Type of modulation : 2402MHz – 2480MHz
Number of channels : GFSK
Antenna : External
Power supply : via host Tablet PC
Output power : -0.3dBm (0.933mW) conducted peak power

1.6 Test standards: FCC Part 15 §15.247 (DA00-705) / RSS 210

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

**The EUT (model# PCG-4E1L) carries pre-certified BT module with FCC ID: CWTUGPZ5
This test report covers full radiated testing as per FCC 15.247 on Laptop with BT module. All conducted measurements are covered under test report# 24FE0040-H0-1**

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:

2005-03-09 EMC & Radio

Lothar Schmidt
(EMC Manager)



Date

Section

Name

Signature

Responsible for test report and project leader:

2005-03-09 EMC & Radio

Neelesh Raj
(EMC Engineer)



Date

Section

Name

Signature

2.2 Test report

TEST REPORT

Test report no.: EMC_856_FCC15.247_2005_BT

TEST REPORT REFERENCE

LIST OF MEASUREMENTS		PAGE
MAXIMUM PEAK OUTPUT POWER	§15.247 (b) (3)	7
BAND EDGE COMPLIANCE	§15.247 (d)	11
EMISSION LIMITATIONS	§15.247 (d)	15
RECEIVER SPURIOUS RADIATION	§ 15.209	29
TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS		36

**MAXIMUM PEAK OUTPUT POWER
(RADIATED)****§15.247 (b) (3)****EIRP:**

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (dBm)		
		2402	2441	2480
T_{nom} (23)°C	V_{nom}	4.1	3.97	1.91
Measurement uncertainty		±0.5dBm		
Substitution Method				

RBW/VBW: 3 MHz

LIMIT**SUBCLAUSE §15.247 (b) (3)**

Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt

PEAK OUTPUT POWER (RADIATED)

§15.247 (b) (3)

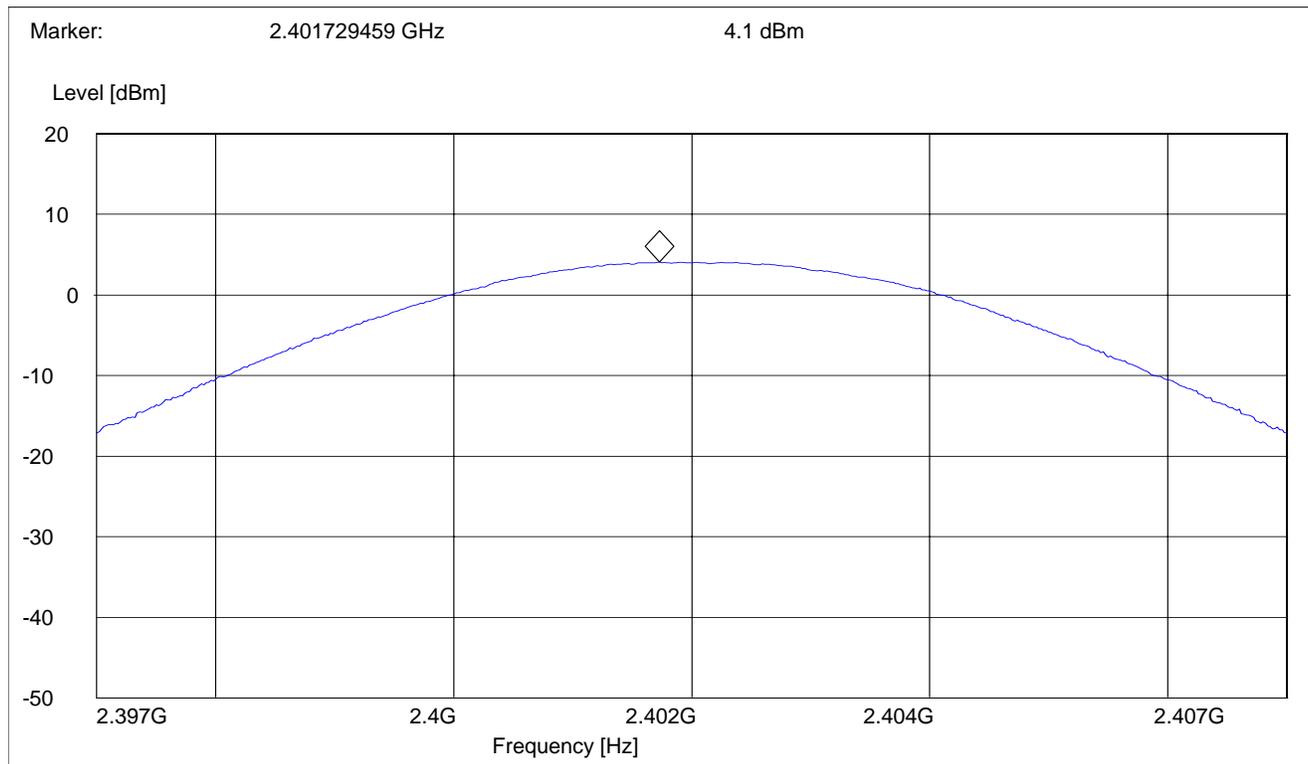
Lowest Channel: 2402 MHz

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2402MHz
 Antenna: H (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: EIRP
 S/N: 23

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	Max Peak	Coupled	3 MHz



PEAK OUTPUT POWER (RADIATED)

§15.247 (b) (3)

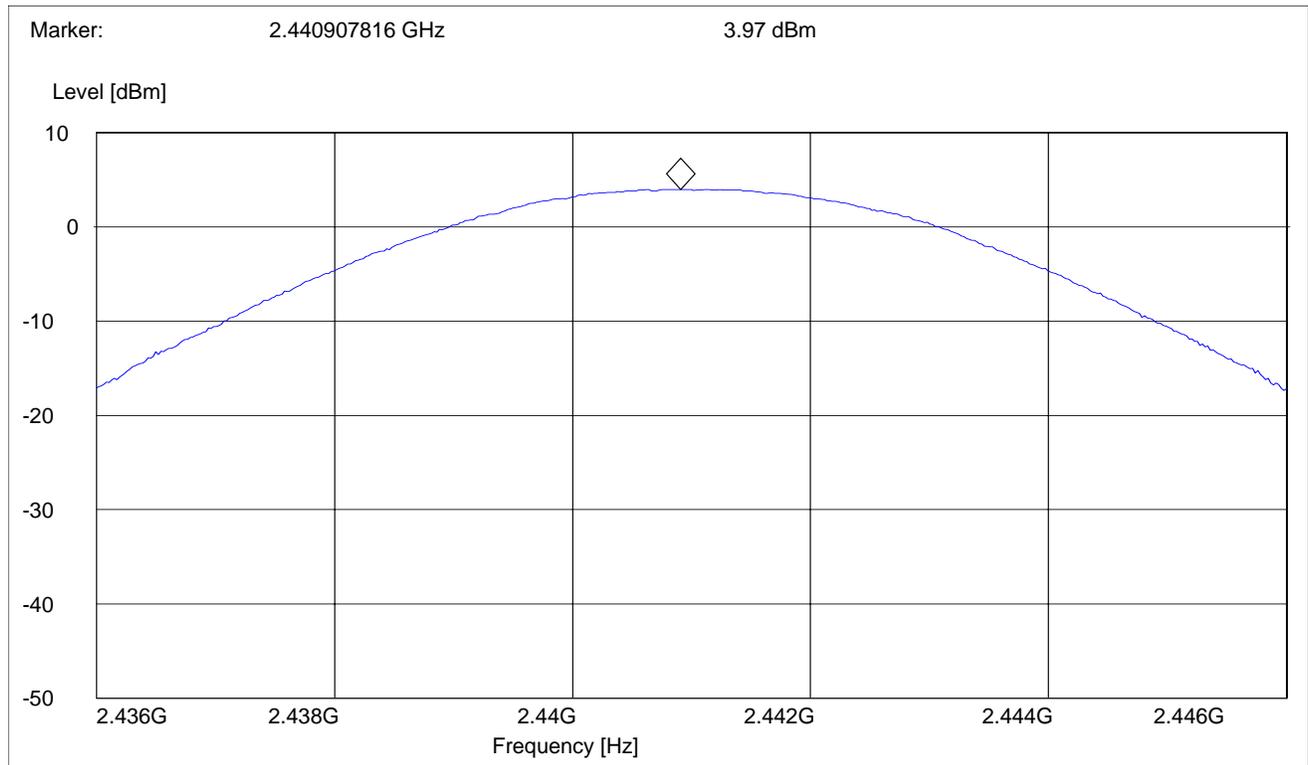
Mid Channel: 2441 MHz

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: H (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: EIRP
 S/N: 23

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	Max Peak	Coupled	3 MHz



PEAK OUTPUT POWER (RADIATED)

§15.247 (b) (3)

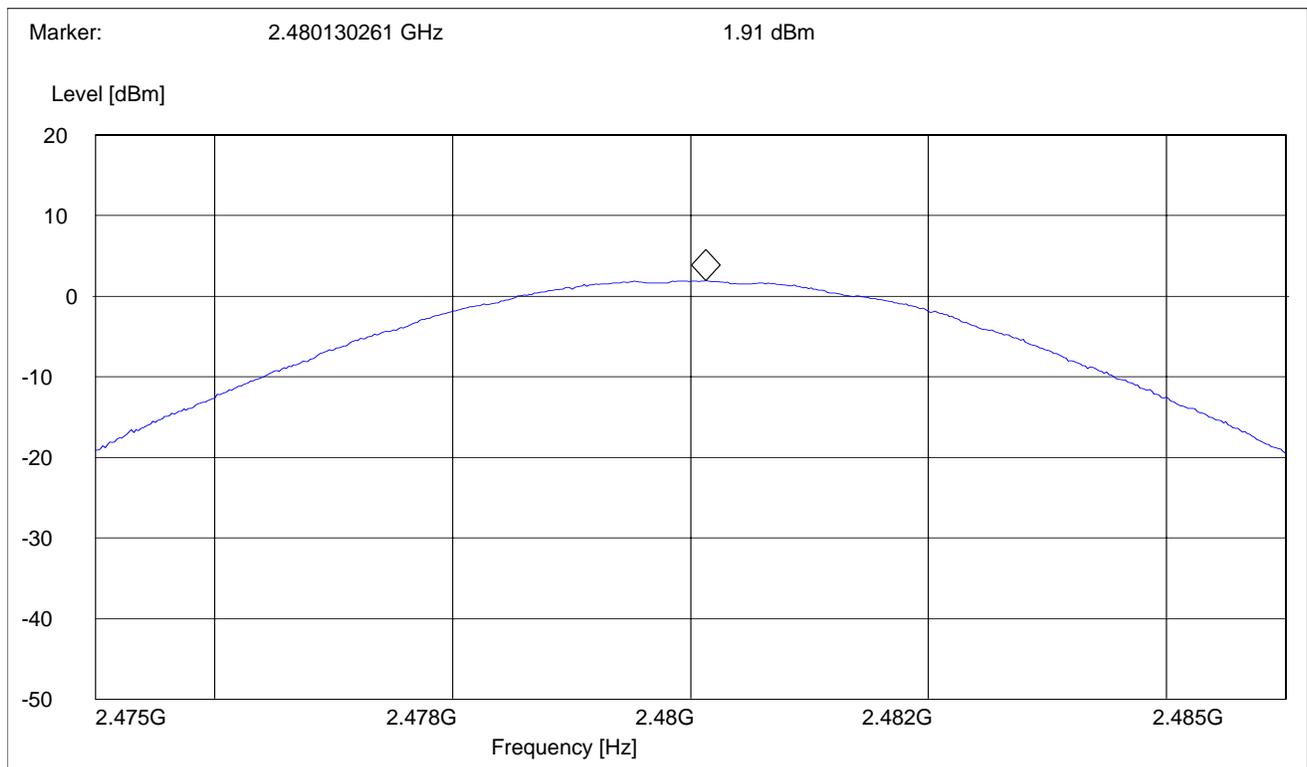
Highest Channel: 2480 MHz

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2480MHz
 Antenna: H (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: EIRP
 S/N: 23

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	Max Peak	Coupled	3 MHz



BAND EDGE COMPLIANCE

§15.247 (d)

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

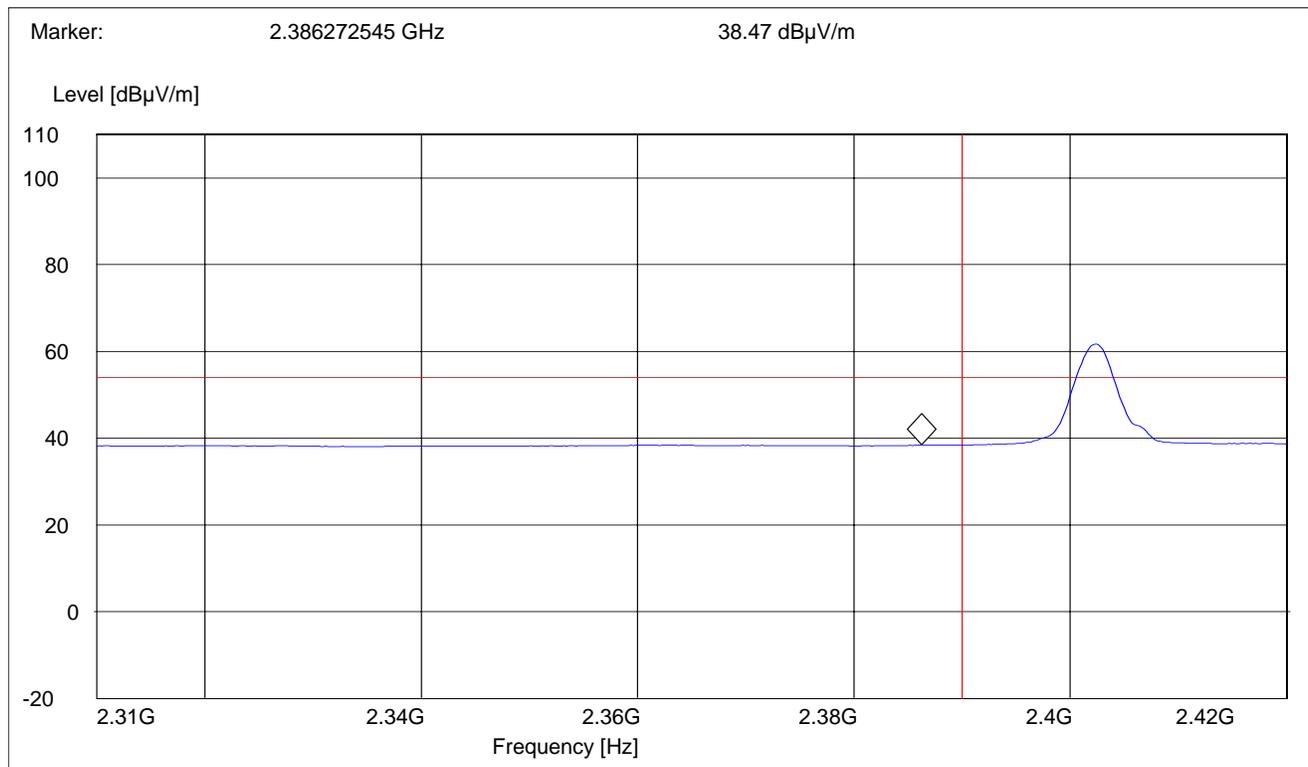
Average Measurement

(This plot is valid for both Hopping ON & OFF)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2402 MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: BANDEDGE AVG.
 S/N: 23

SWEEP TABLE: "FCC15.247 LBE_AVG"
 Short Description: FCC15.247 BT Low-band-edge
 Limit Line: 54dB μ V

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



BAND EDGE COMPLIANCE

§15.247 (d)

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

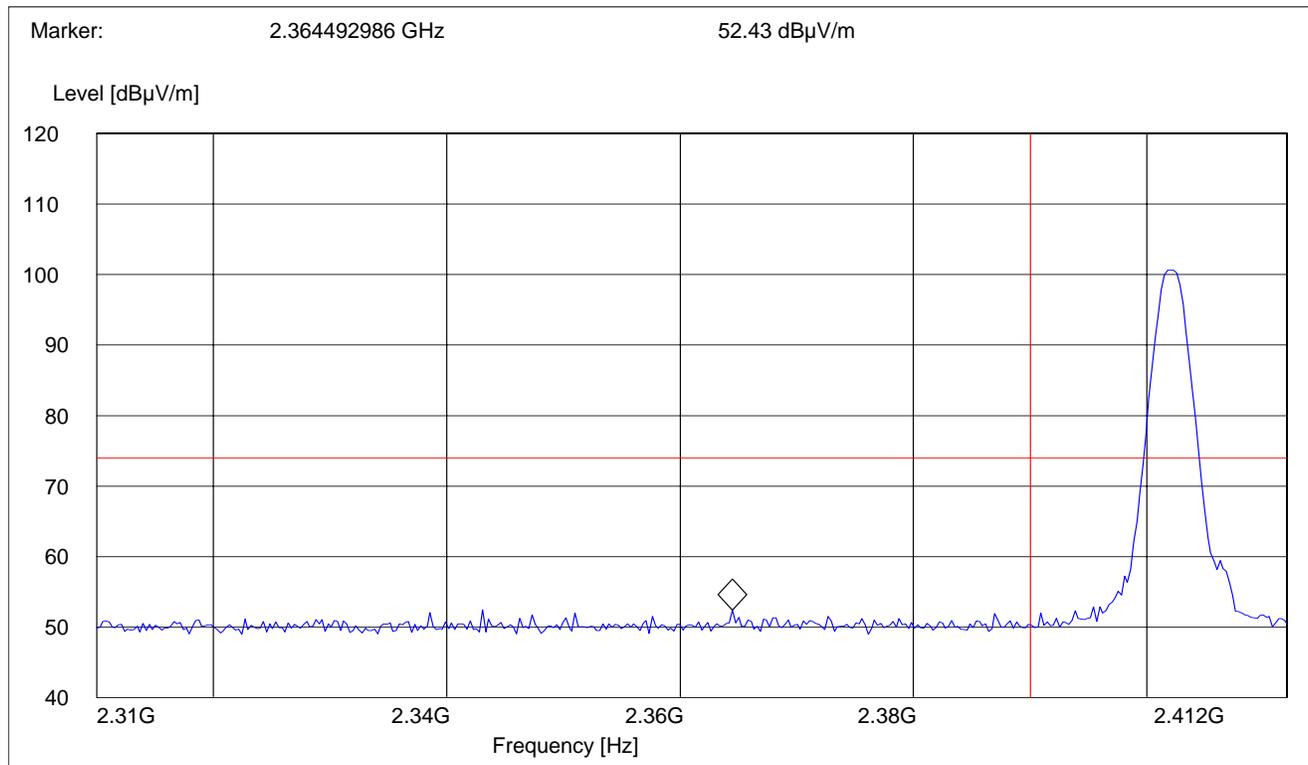
Peak Measurement

(This plot is valid for both Hopping ON & OFF)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2402 MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: BANDEDGE PEAK
 S/N: 23

SWEEP TABLE: "FCC15.247 LBE_Pk"
 Short Description: FCC15.247 BT Low-band-edge
 Limit Line: 74dBµV

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
2.31 GHz	2.412 GHz	Max Peak	Coupled	1 MHz	1 MHz	#326 horn (dBi)



BAND EDGE COMPLIANCE

§15.247 (d)

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

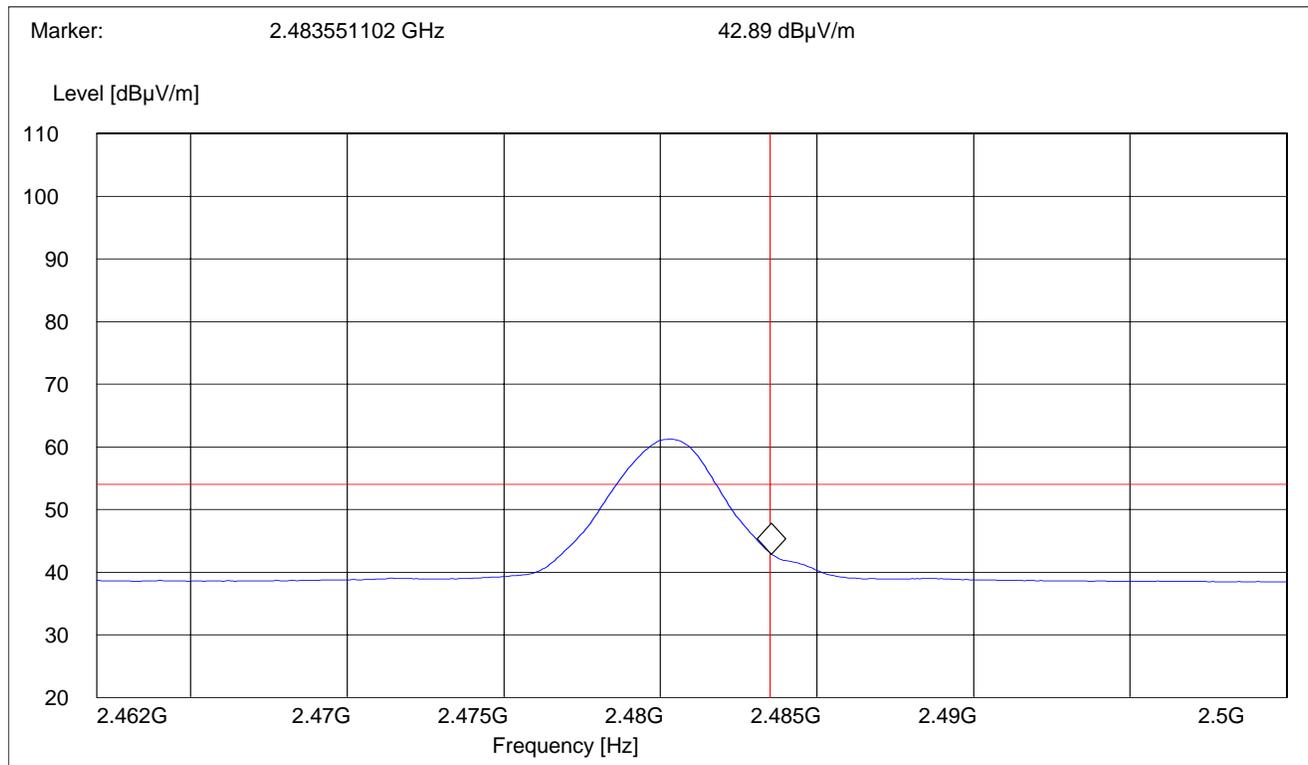
Average Measurement

(This plot is valid for both Hopping ON & OFF)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2480 MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: BANDEDGE Avg.
 S/N: 23

SWEEP TABLE: "FCC15.247 HBE_AVG"
 Short Description: FCC15.247 BT High-band-edge
 Limit Line: 54dBμV

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



BAND EDGE COMPLIANCE

§15.247 (d)

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

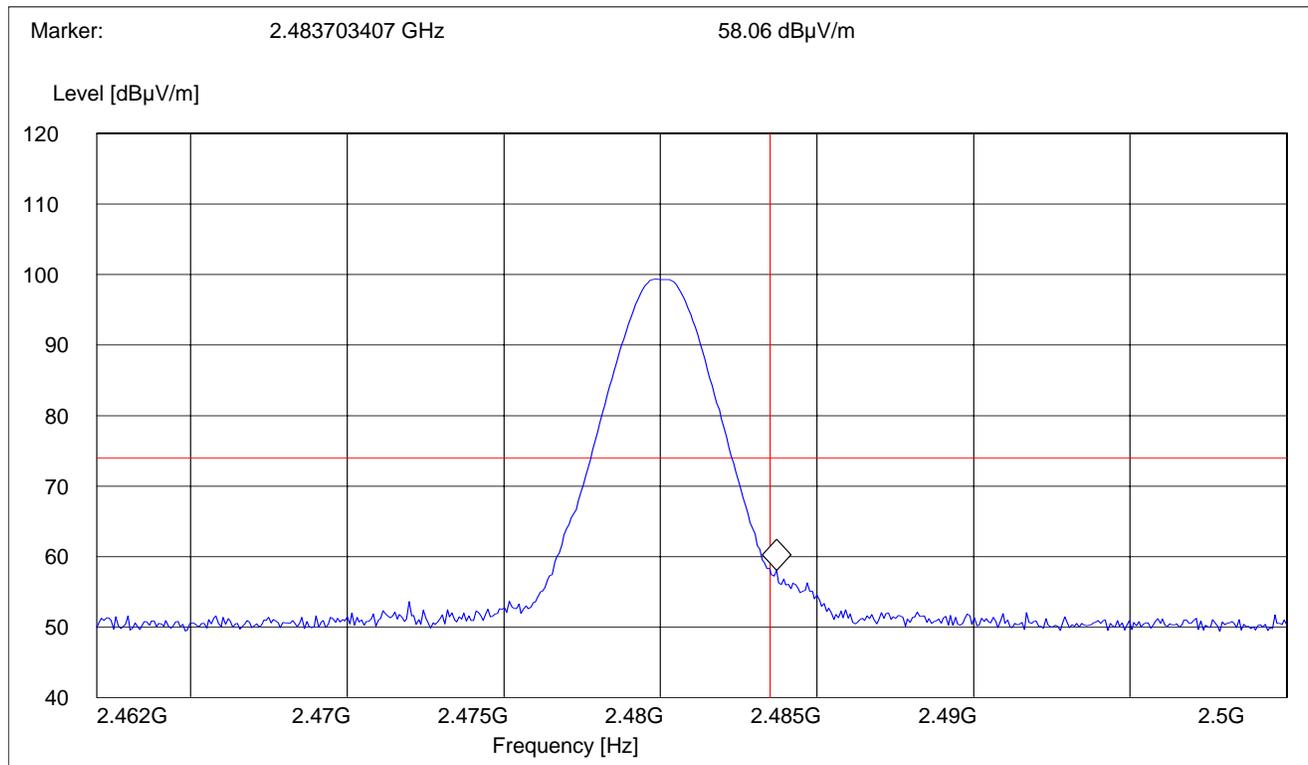
Peak Measurement

(This plot is valid for both Hopping ON & OFF)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2480 MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: BANDEDGE PEAK
 S/N: 23

SWEEP TABLE: "FCC15.247 HBE_PK"
 Short Description: FCC15.247 BT High-band-edge
 Limit Line: 74dBµV

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
2.462 GHz	2.5 GHz	Max Peak	Coupled	1 MHz	1 MHz	#326 horn (dBi)



EMISSION LIMITATIONS
Transmitter (Radiated)

§15.247 (d)

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 that 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 26.5 GHz very short cable connections to the antenna was used to minimize the noise level.
2. Frequency resolution is not fine enough to show the exact frequency of the carrier, refer to plots under EIRP.
3. All measurements are done in peak mode unless specified with 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 (d)

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

Transmit at Lowest channel Frequency 2402MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
4781.5	68.94		45.59
7200.4	68.61		45.84
9619.2	47.9		32.45
Transmit at Middle channel Frequency 2441MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
4883.7	73.36		49.58
7302.6	72.7		50.24
9755.5	46.31		31.38
Transmit at Highest channel Frequency 2480MHz			
Frequency (MHz)	Level (dBµV/m)		
	Peak	Quasi-Peak	Average
4951.9	68.58		46.16
7438.8	66.27		40.12
9925.8	43.59		29.12

EMISSION LIMITATIONS - Radiated (Transmitter)

§15.247 (d)

30MHz – 1GHz

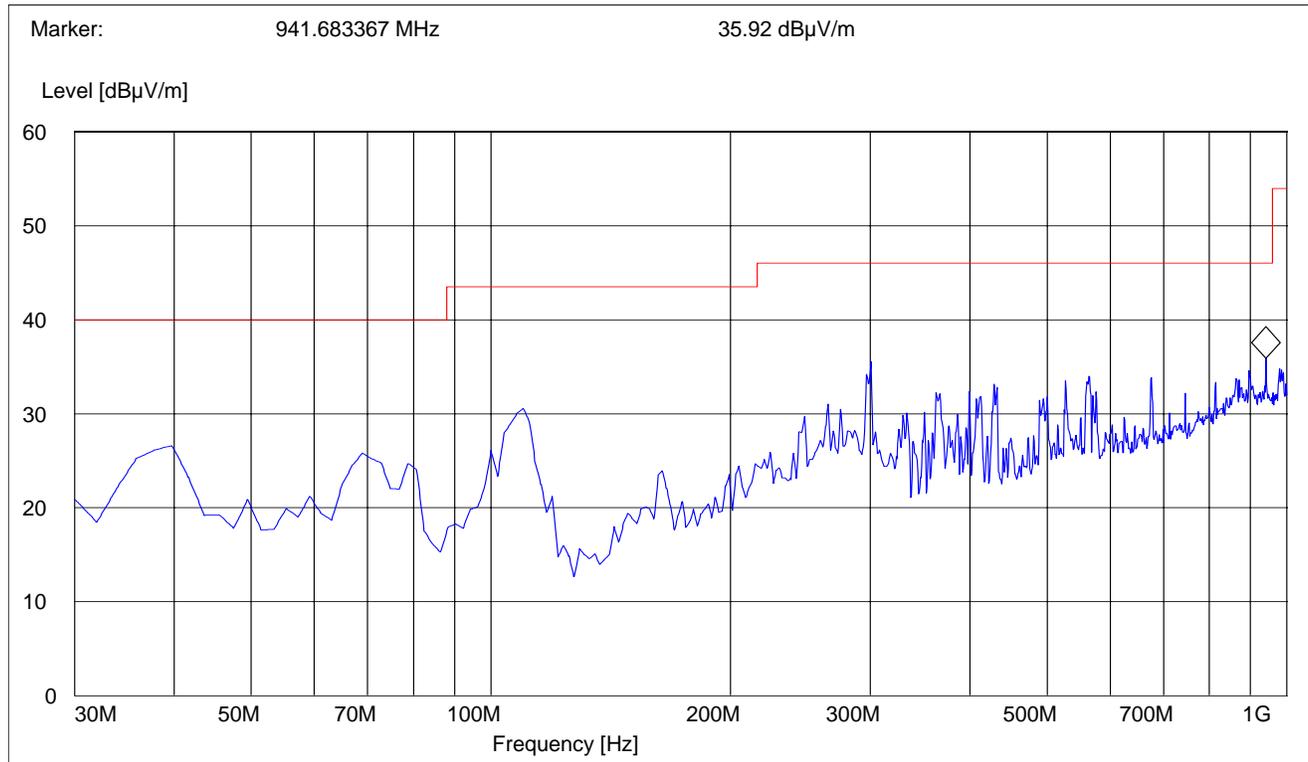
Antenna: vertical

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

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: V
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 30MHz-1GHz PEAK VERTICAL
 S/N: 23

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	Max Peak	Coupled	100 kHz	3141-#1186



EMISSION LIMITATIONS - Radiated (Transmitter)

§15.247 (d)

30MHz – 1GHz

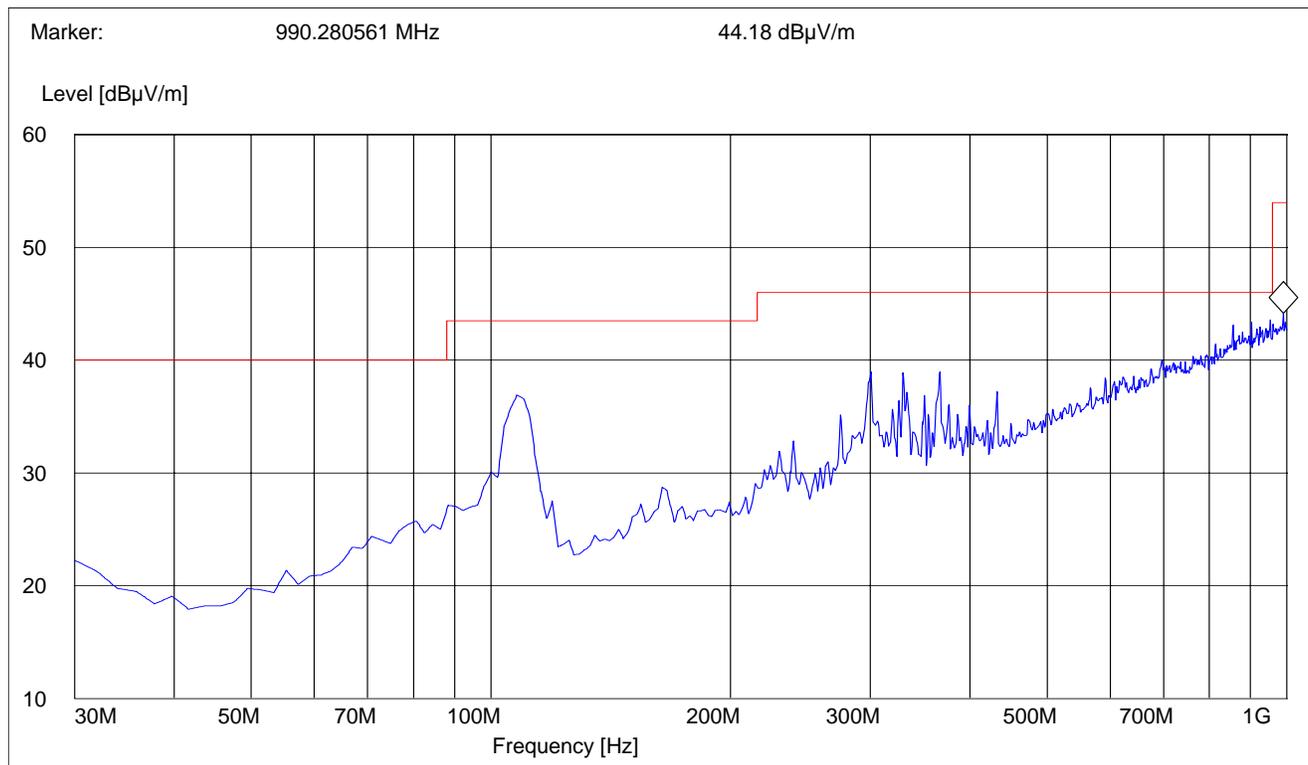
Antenna: horizontal

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

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: H
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 30MHz-1GHz PEAK HORIZONTAL
 S/N: 23

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	Max Peak	Coupled	100 kHz	3141-#1186



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

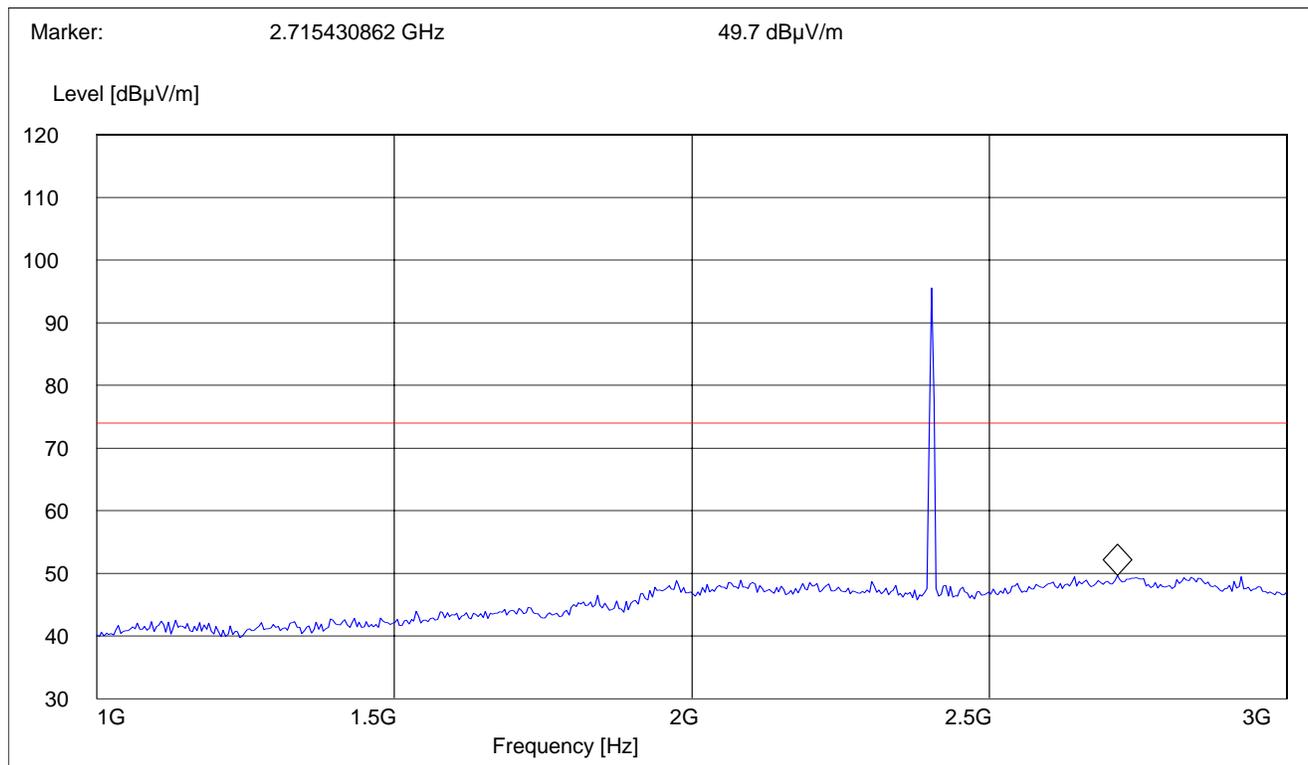
§15.247 (d)

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

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2402MHz
 Antenna: H (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: 1-3GHz
 S/N: 23

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

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



EMISSION LIMITATIONS - Radiated (Transmitter)
Lowest Channel (2402 MHz): 3GHz – 18GHz
PEAK

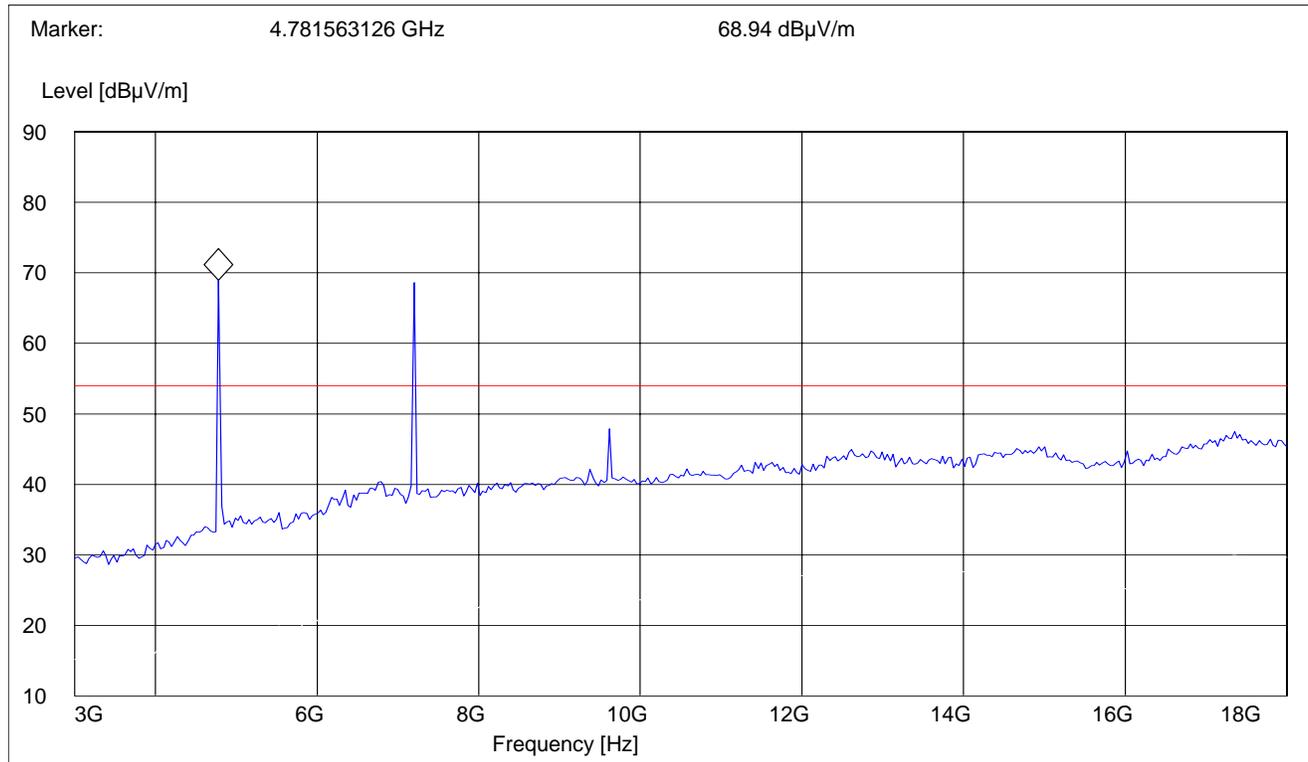
§15.247 (d)

NOTE: Peak readings compared to average limit. See next page for average readings.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2402MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz PEAK
 S/N: 23

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

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



EMISSION LIMITATIONS - Radiated (Transmitter)
Lowest Channel (2402 MHz): 3GHz – 18GHz
AVERAGE

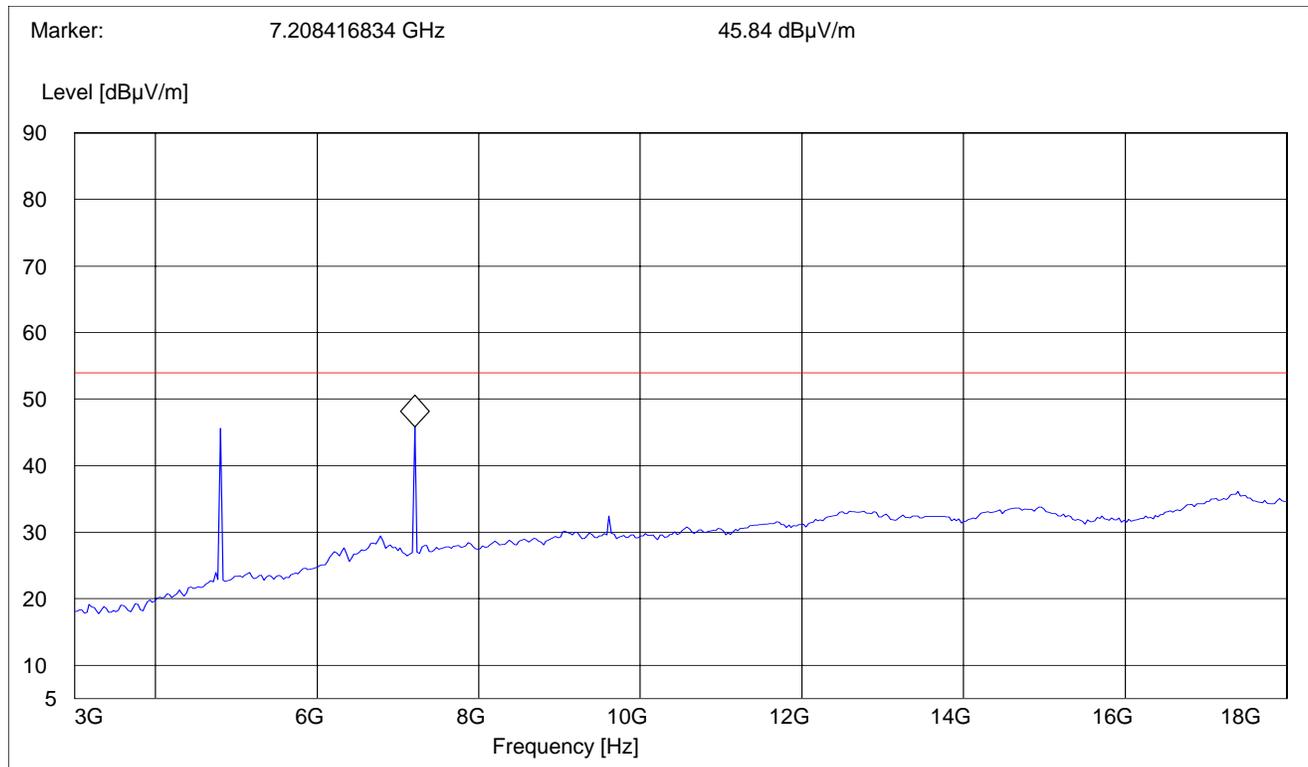
§15.247 (d)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2402MHz
 Antenna: V(worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz AVERAGE
 S/N: 23

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

Short Description: Bluetooth Spurious 3-18 GHz

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
3.0 GHz	18.0 GHz	Max Peak	Coupled	1 MHz	10 Hz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter)
Middle Channel (2441 MHz): 1GHz – 3GHz
PEAK

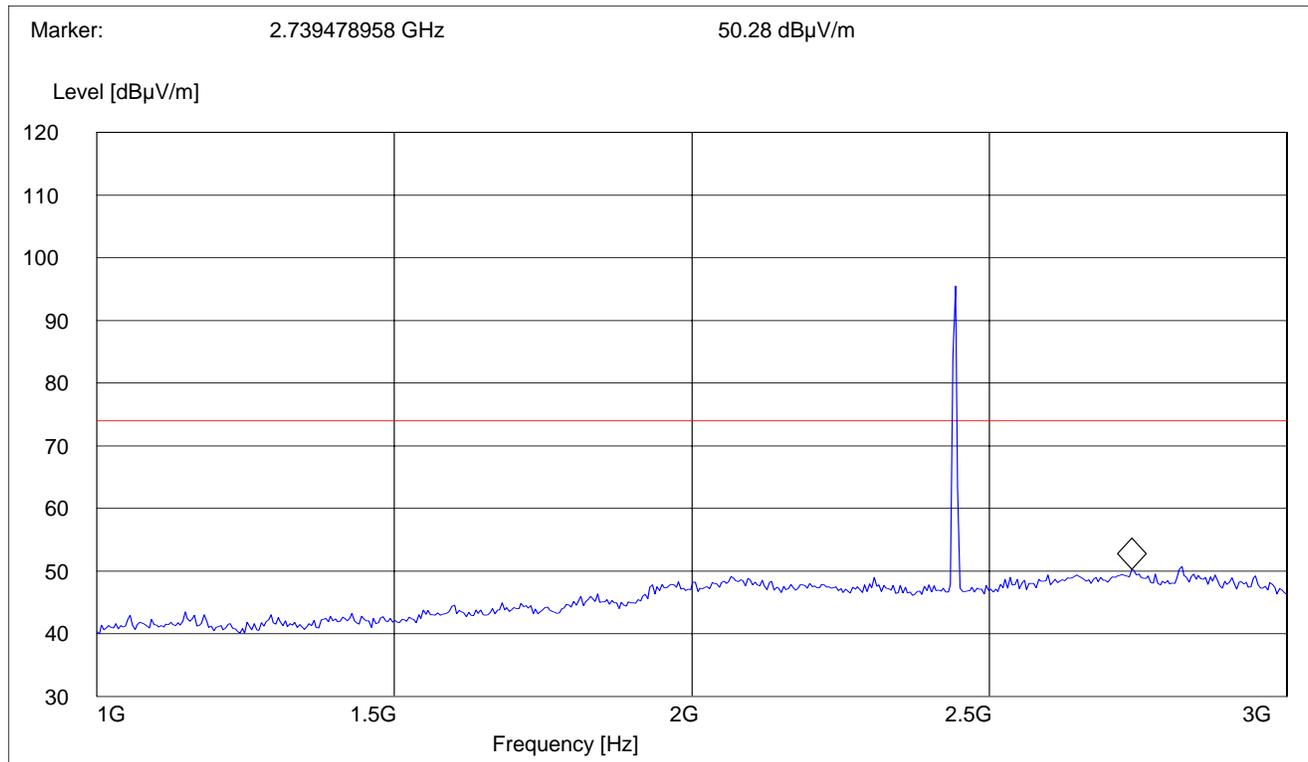
§15.247 (d)

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

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: H (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: 1-3GHz
 S/N: 23

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

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



EMISSION LIMITATIONS - Radiated (Transmitter)
Middle Channel (2441 MHz): 3GHz – 18GHz
PEAK

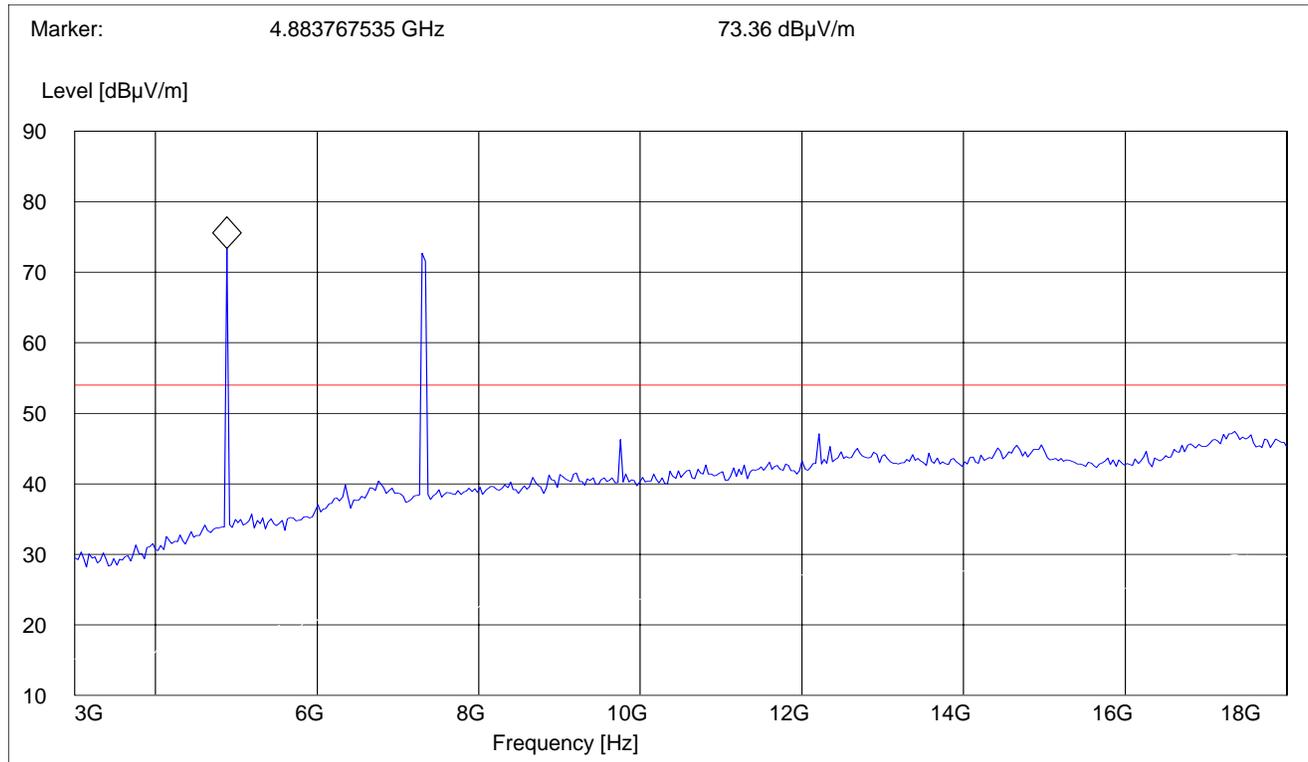
§15.247 (d)

NOTE: Peak readings compared to average limit. See next page for average readings.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz PEAK
 S/N: 23

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

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



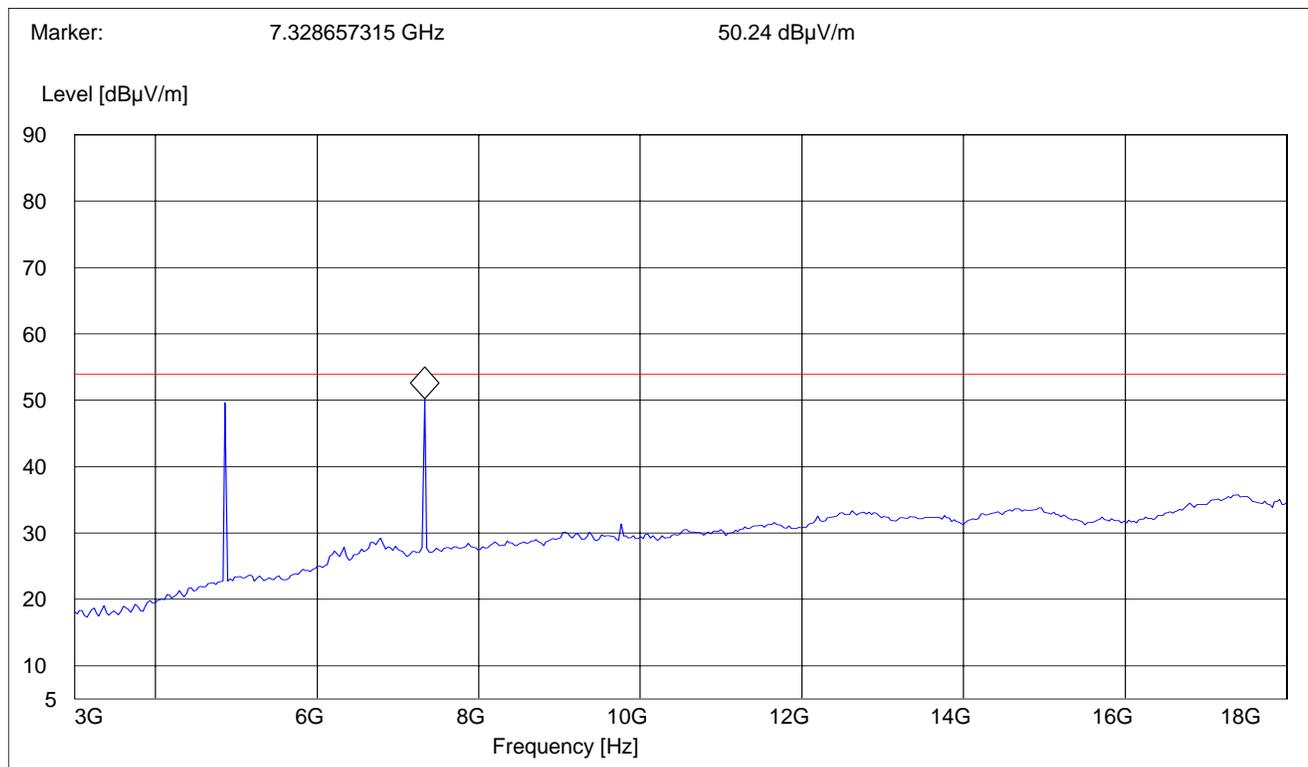
EMISSION LIMITATIONS - Radiated (Transmitter)
Middle Channel (2441 MHz): 3GHz – 18GHz
AVERAGE

§15.247 (d)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: V(worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz AVERAGE
 S/N: 23

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

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
3.0 GHz	18.0 GHz	Max Peak	Coupled	1 MHz	10 Hz	#326 horn (dBi)



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

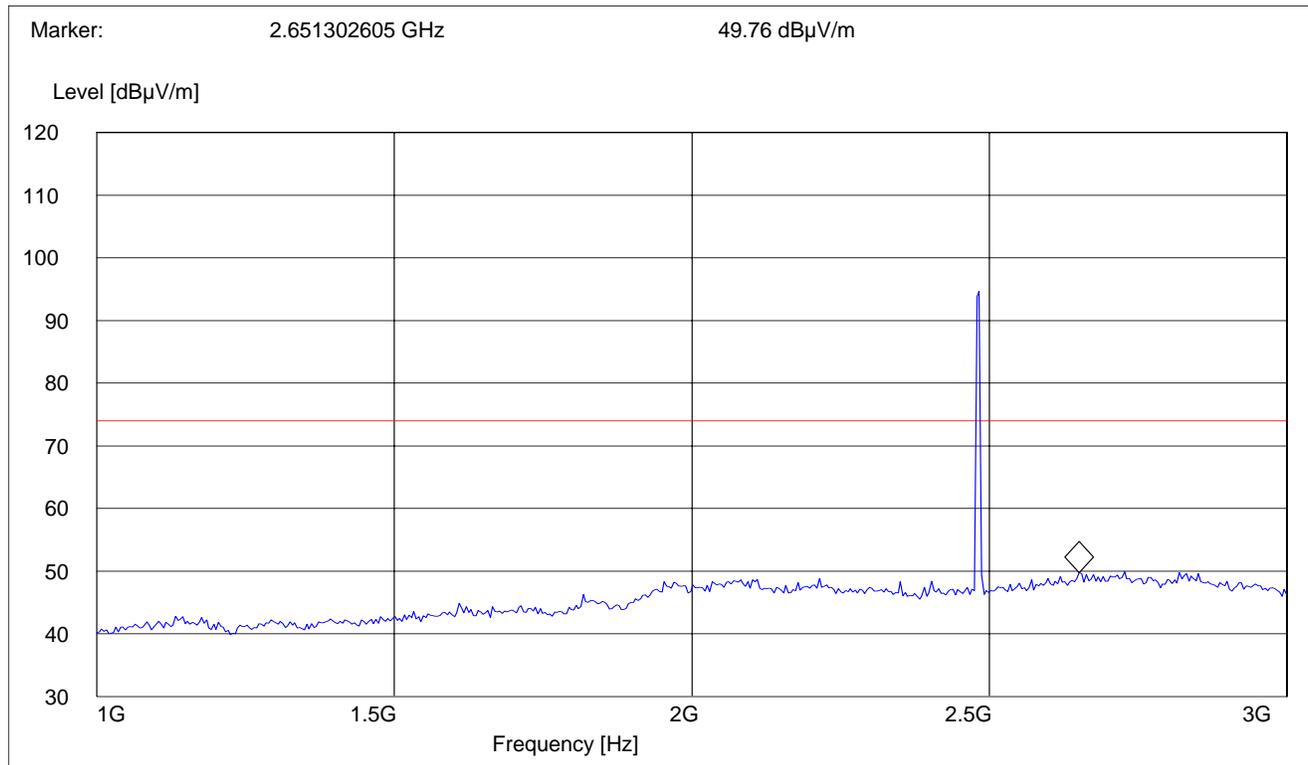
§15.247 (d)

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

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2480MHz
 Antenna: H (worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: 1-3GHz
 S/N: 23

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

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



EMISSION LIMITATIONS - Radiated (Transmitter)

§15.247 (d)

Highest Channel (2480 MHz): 3GHz – 18GHz

PEAK

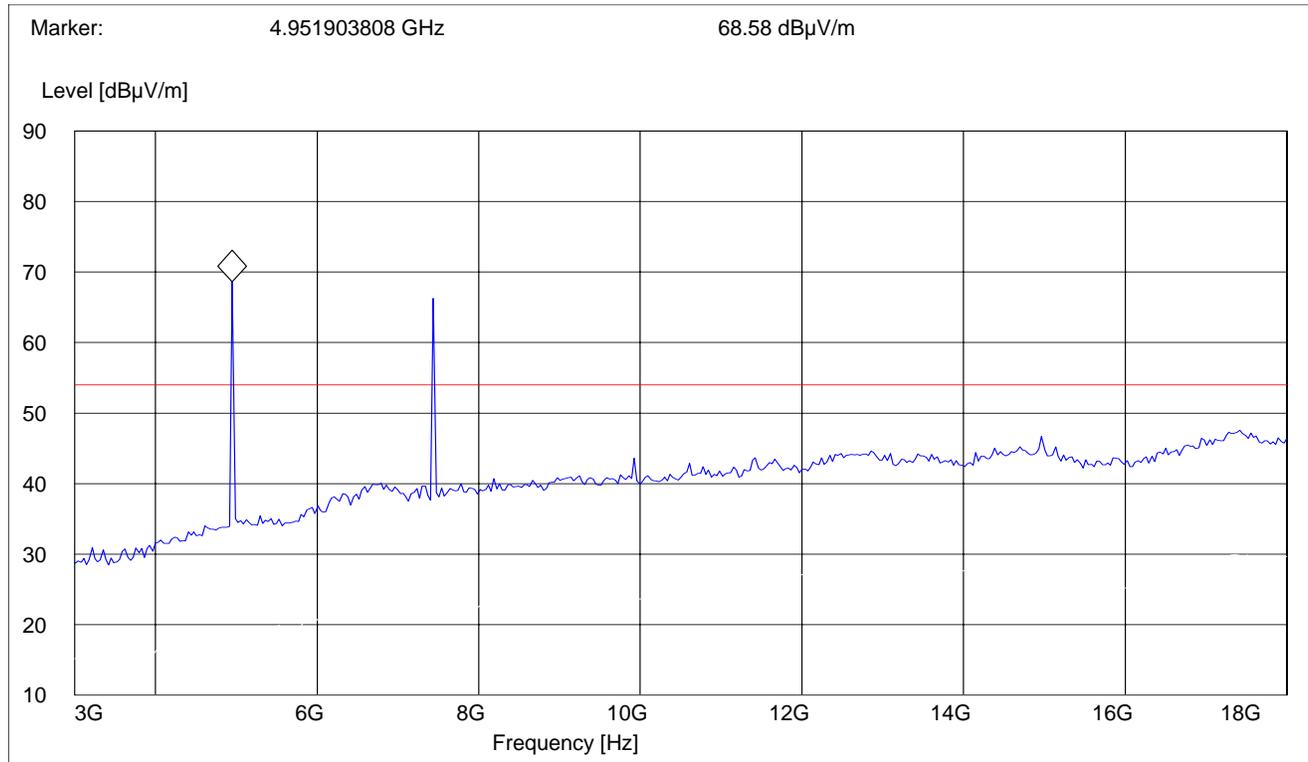
NOTE: Peak readings compared to average limit. See next page for average readings.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2480MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz PEAK
 S/N: 23

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

Short Description: Bluetooth Spurious 3-18 GHz

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



EMISSION LIMITATIONS - Radiated (Transmitter)
Highest Channel (2480 MHz): 3GHz – 18GHz
AVERAGE

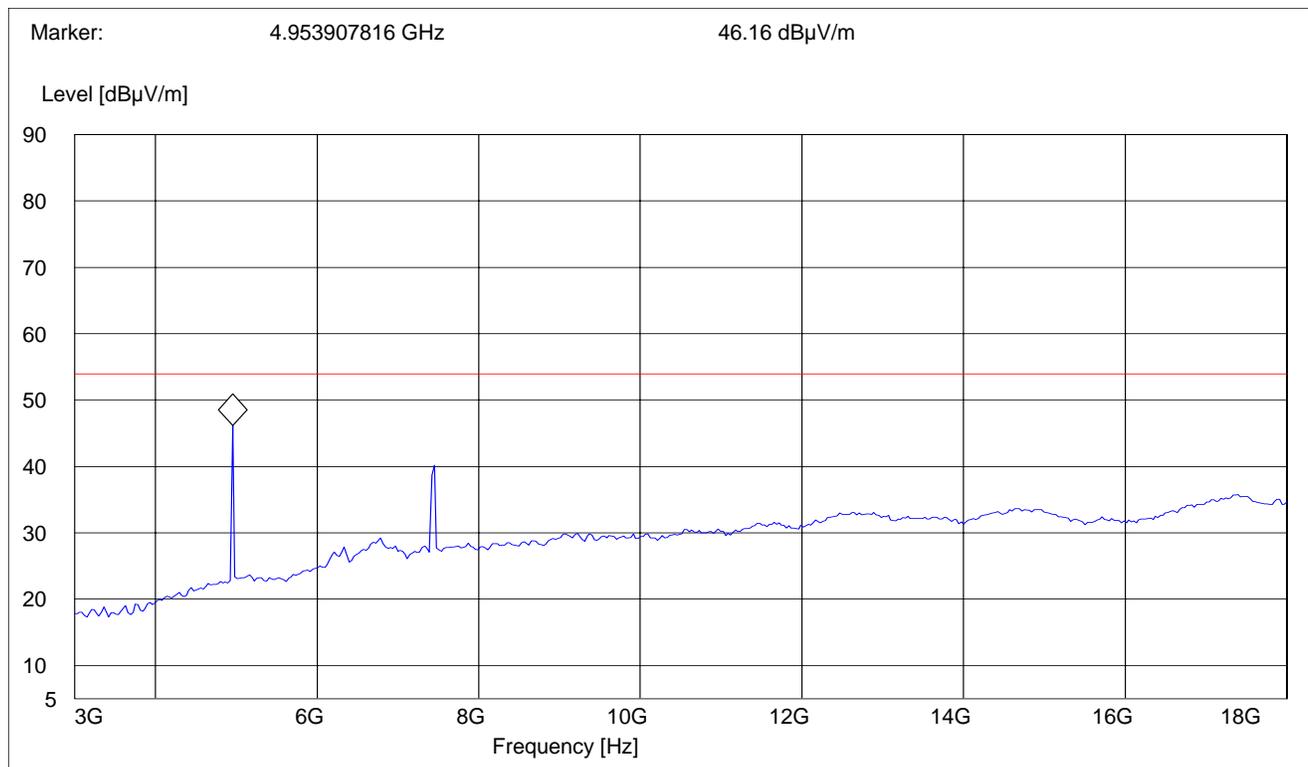
§15.247 (d)

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2480MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz AVG.
 S/N: 23

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

Short Description: Bluetooth Spurious 3-18 GHZ

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
3.0 GHz	18.0 GHz	Max Peak	Coupled	1 MHz	10 Hz	#326 horn (dBi)



EMISSION LIMITATIONS - Radiated (Transmitter)
18GHz – 26.5GHz

§15.247 (d)

PEAK

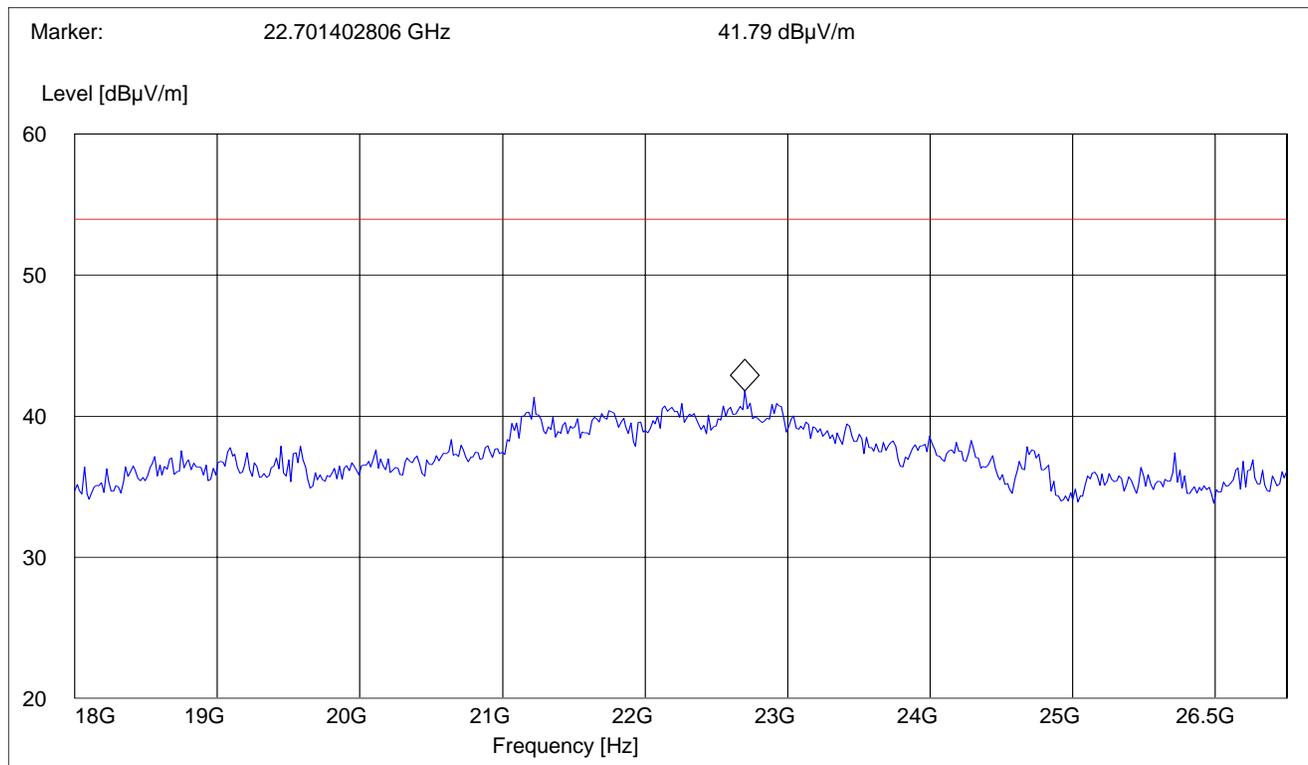
Note 1: This plot is valid for low, mid & high channels (worst-case plot)

NOTE 2: Peak readings compared to average limit.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: TX @ 2441MHz
 Antenna: V(worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 18-26.5GHz PEAK
 S/N: 23

SWEEP TABLE: "BT Spuri hi 18-26.5G"
 Short Description: Bluetooth Spurious 18-26.5GHz

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
18 GHz	26.5 GHz	Max Peak	Coupled	1 MHz	1 MHz	#141 horn (dBi)



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

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

NOTE:

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 26.5 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.

RECEIVER SPURIOUS RADIATION
30MHz – 1GHz

§ 15.209

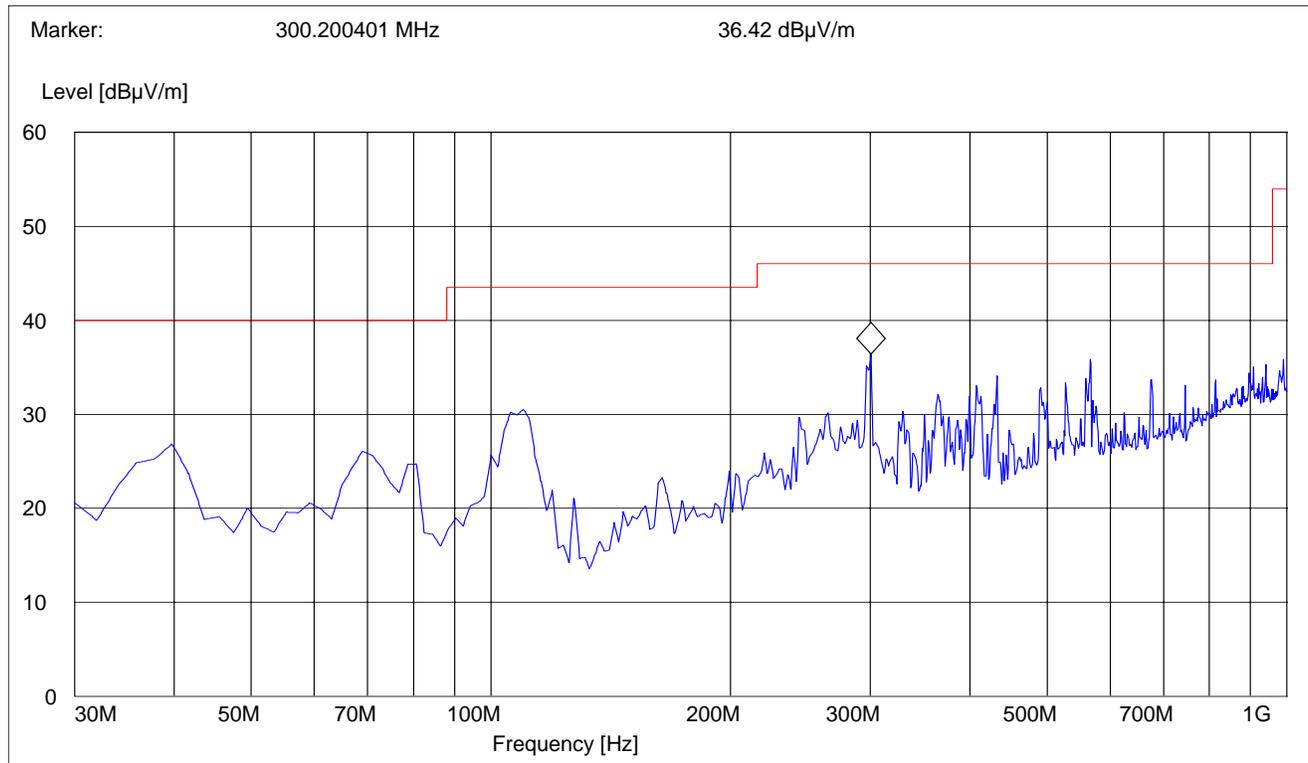
Antenna: vertical (worst-case plot)

NOTE: Peak readings compared to quasi-peak limit.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: RX @ 2441MHz
 Antenna: V
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 30MHz-1GHz PEAK VERTICAL
 S/N: 23

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	Max Peak	Coupled	100 kHz	3141-#1186



RECEIVER SPURIOUS RADIATION
30MHz – 1GHz

§ 15.209

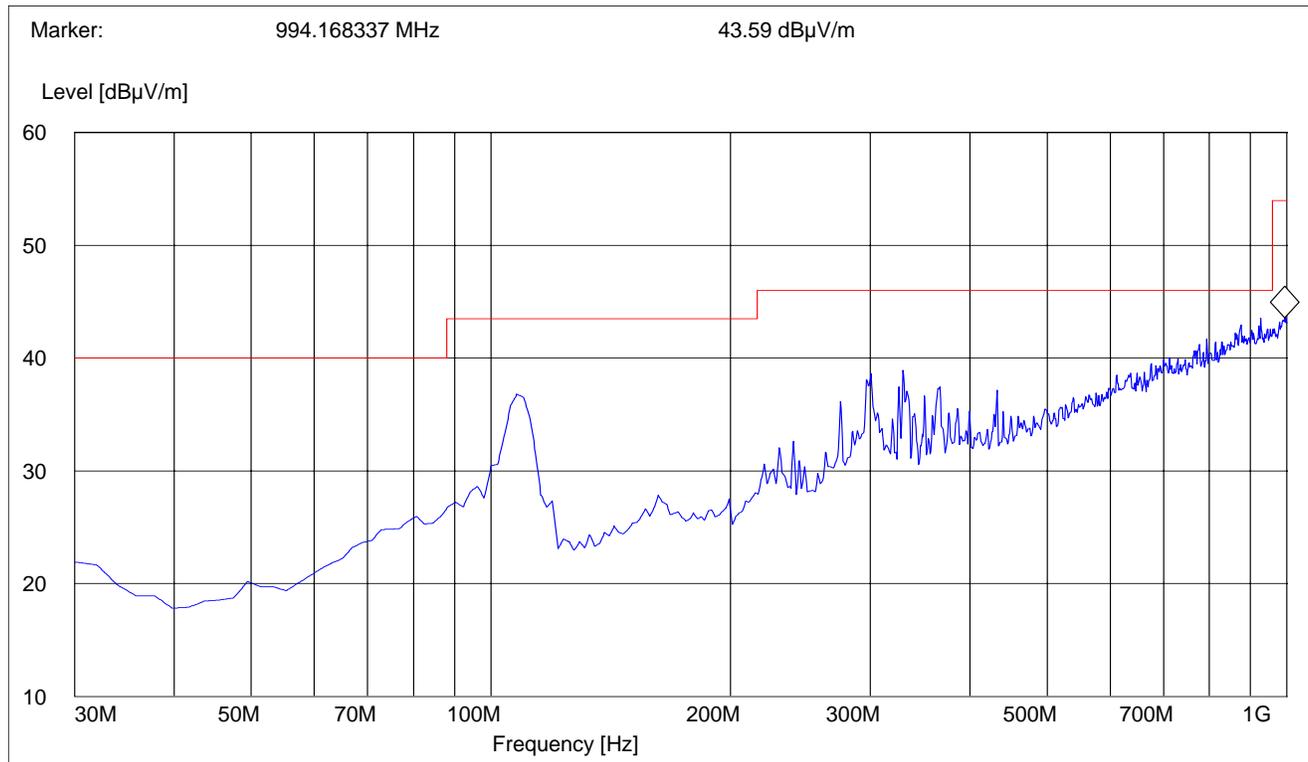
Antenna: horizontal (worst-case plot)

NOTE: Peak readings compared to quasi-peak limit.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: RX @ 2441MHz
 Antenna: H
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 30MHz-1GHz PEAK HORIZONTAL
 S/N: 23

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	Max Peak	Coupled	100 kHz	3141-#1186



RECEIVER SPURIOUS RADIATION
1GHz – 3GHz
PEAK

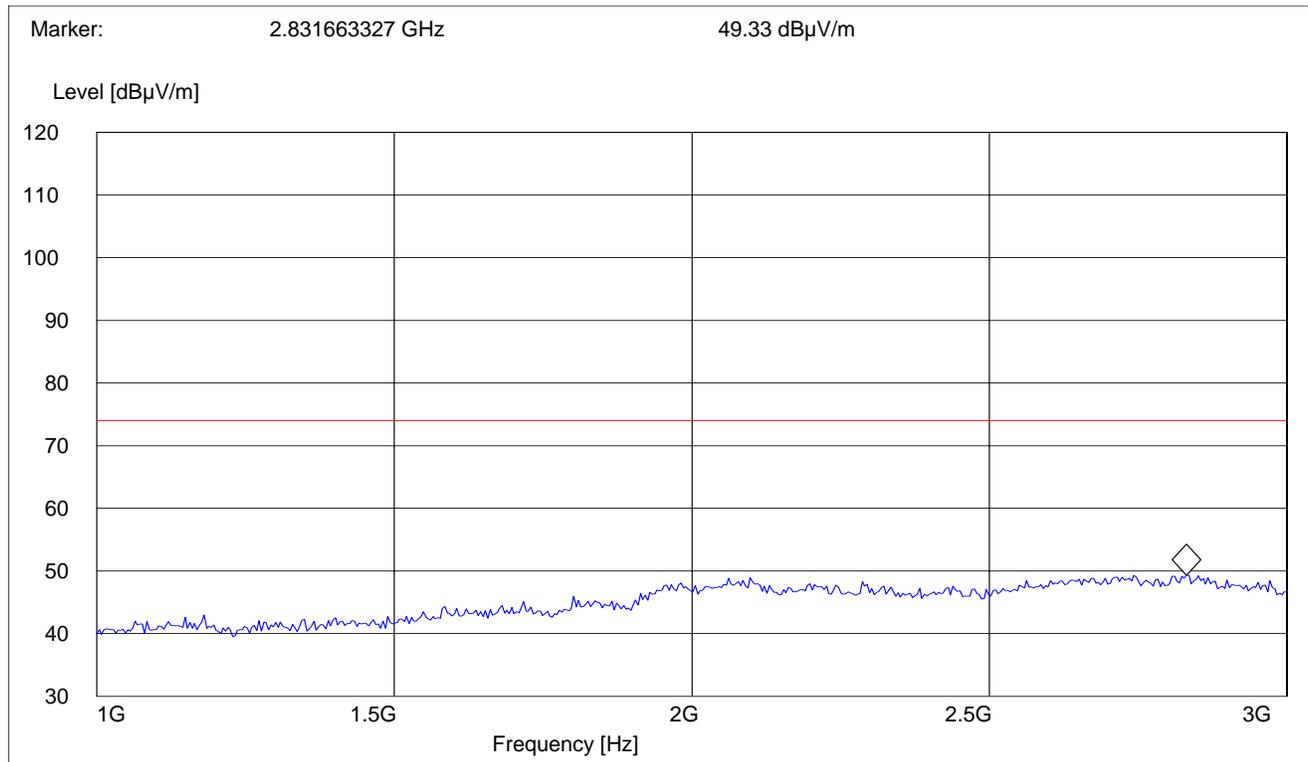
§ 15.209

NOTE: Peak readings compared to average limit.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: RX @ 2441MHz
 Antenna: H(worst case)
 EUT: 90 deg
 Test Engineer: Neelesh Raj
 Comment: 1-3GHz PEAK
 S/N: 23

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

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



RECEIVER SPURIOUS RADIATION
3GHz – 18GHz
PEAK

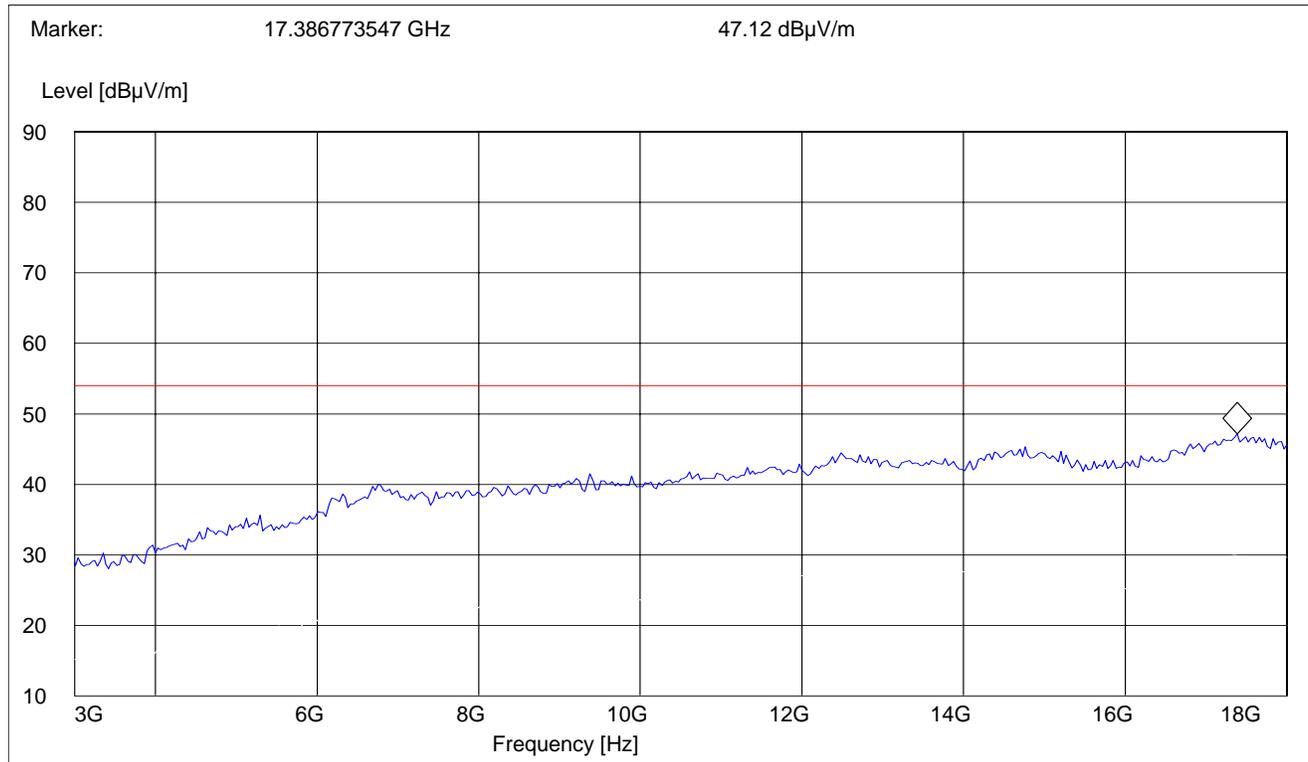
§ 15.209

NOTE: Peak readings compared to average limit.

EUT / Description: Personal Computer M/N: PCG-4E1L
 Customer: SONY
 Operating Mode: RX @ 2441MHz
 Antenna: V (worst case)
 EUT: 90 deg
 Test Engineer: NEELESH
 Comment: 3-18GHz PEAK
 S/N: 23

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

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



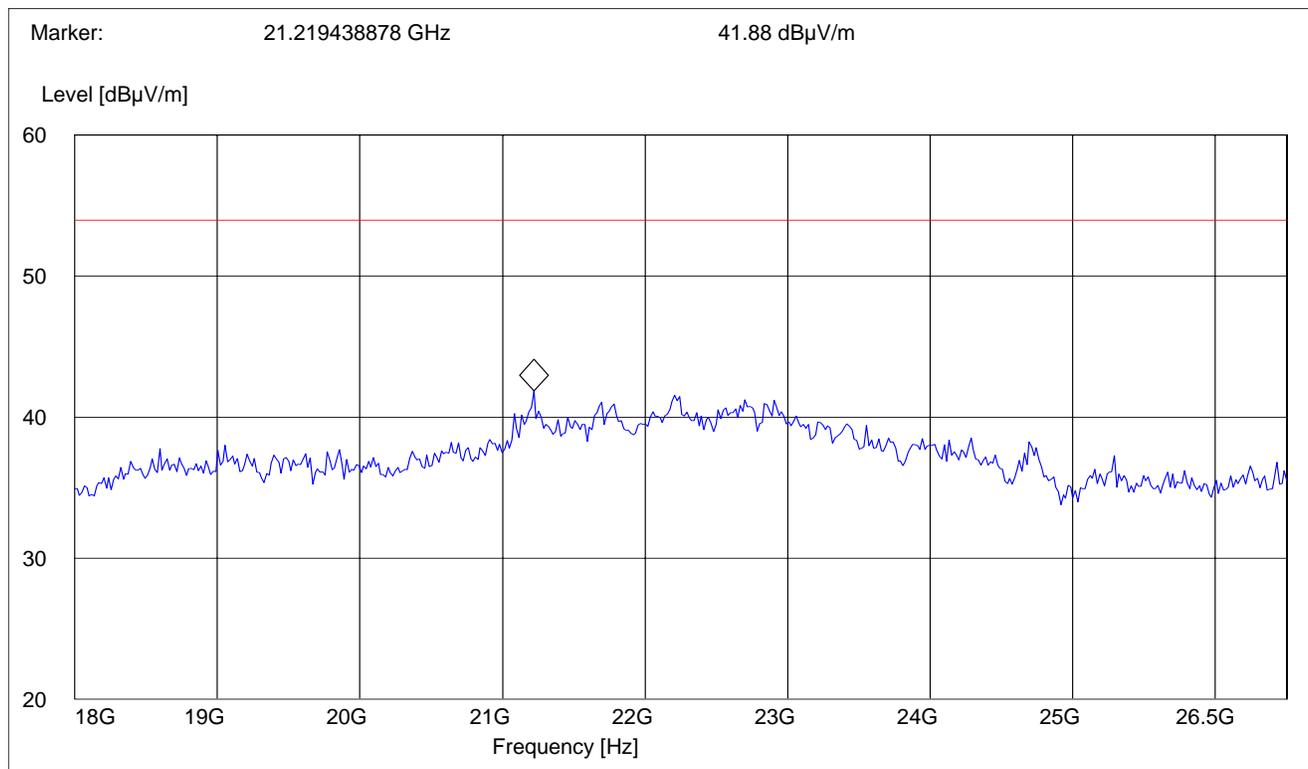
RECEIVER SPURIOUS RADIATION
18GHz – 26.5GHz
PEAK

§ 15.209

NOTE: Peak readings compared to average limit.

SWEEP TABLE: "BT Spuri hi 18-26.5G"
 Short Description: Bluetooth Spurious 18-26.5GHz

Start Frequency	Stop Frequency	Detector	Meas. Time	RBW	VBW	Transducer
18 GHz	26.5 GHz	Max Peak	Coupled	1 MHz	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	Pre-Amplifier	TS-ANA	Rohde & Schwarz	--
08	Pre-Amplifier	JS4-00102600	Miteq	00616

Radiated Testing

ANECHOIC CHAMBER

