



**FCC CFR47 PART 15 SUBPART C
CLASS II PERMISSIVE CHANGE**

**CERTIFICATION
TEST REPORT**

FOR

CSR V2.0 - BC04

MODEL NUMBER: PA3418U-1BTM

FCC ID: CJ6UPA3418BT

REPORT NUMBER: 06U10706-1

ISSUE DATE: NOVEMBER 20, 2006

Prepared for
TOSHIBA CORPORATION DIGITAL MEDIA NETWORK COMPANY
2-9 SUEHIRO-CHO, OME
TOKYO, 198-8710, JAPAN

Prepared by
COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD
MORGAN HILL, CA 95037, USA
TEL: (408) 463-0885
FAX: (408) 463-0888

NVLAP[®]
LAB CODE:200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	11/20/06	Initial Issue	Thu

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY.....	5
4.1. MEASURING INSTRUMENT CALIBRATION	5
4.2. MEASUREMENT UNCERTAINTY.....	5
5. EQUIPMENT UNDER TEST.....	6
5.1. DESCRIPTION OF EUT	6
5.2. CLASS II PERMISSIVE CHANGE DESCRIPTION	6
5.3. MAXIMUM OUTPUT POWER	6
5.4. DESCRIPTION OF AVAILABLE ANTENNAS	6
5.5. SOFTWARE AND FIRMWARE	6
5.6. WORST-CASE CONFIGURATION AND MODE.....	7
5.7. DESCRIPTION OF TEST SETUP	7
6. TEST AND MEASUREMENT EQUIPMENT	9
7. LIMITS AND RESULTS	10
7.1. ANTENNA PORT CHANNEL TESTS	10
7.1.1. PEAK OUTPUT POWER	10
7.1.2. MAXIMUM PERMISSIBLE EXPOSURE.....	14
7.2. RADIATED EMISSIONS.....	17
7.2.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS	17
7.2.2. TRANSMITTER RADIATED EMISSIONS ABOVE 1 GHZ	20
7.2.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz	29
7.3. POWERLINE CONDUCTED EMISSIONS	33
8. SETUP PHOTOS	37

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: TOSHIBA CORPORATION DIGITAL MEDIA NETWORK COMPANY
2-9 SUEHIRO-CHO, OME
TOKYO, 198-8710, JAPAN

EUT DESCRIPTION: CSR V2.0 - BC04

MODEL: PA3418U-1BTM

SERIAL NUMBER: 00037AF6B2CF

DATE TESTED: NOVEMBER 14-15, 2006

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

CHIN PANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2 and FCC CFR 47 Part 15.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The Toshiba Bluetooth module is a wireless Frequency Hopping Spread Spectrum that operates on the 2400-2483.5 MHz band. It is designed to be installed in the host system. This unit provides a power output of +1.614 dBm (1.45mw).

5.2. CLASS II PERMISSIVE CHANGE DESCRIPTION

The EUT was originally tested and reported under CCS project number 05U3286, and granted by TCB on February 28, 2005. The major changes filed under this application are as follows:

Full Modular Approval tested with TBN002 antennas.

Additional tests were conducted on radiated emissions and AC power line conducted emissions, while conducted data remains the same as what was performed under CCS project no.: 05U3286

5.3. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

2400 to 2483.5 MHz Authorized Band

Frequency Range (MHz)	Output Power (dBm)	Output Power (mW)
2402 - 2480	1.61	1.45

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Monopole with parasitic element antenna, with a maximum gain of 1.55 dBi.

5.5. SOFTWARE AND FIRMWARE

The EUT driver software installed in the Toshiba Laptop equipment during testing was CSR-BC01
The test utility software used during testing was Bluetest rev. 1.20

5.6. WORST-CASE CONFIGURATION AND MODE

In our opinion the worst-case channel is determined as the channel with the highest output power. The highest measured output power was at 2480 MHz.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Toshiba	Protégé R	76019899J	DoC
AC Adapter	Toshiba	PA3282U-2ACA	G71C0002SC10	DoC
Blue Tooth Test Card	Toshiba	W03483	KP-2159	NA

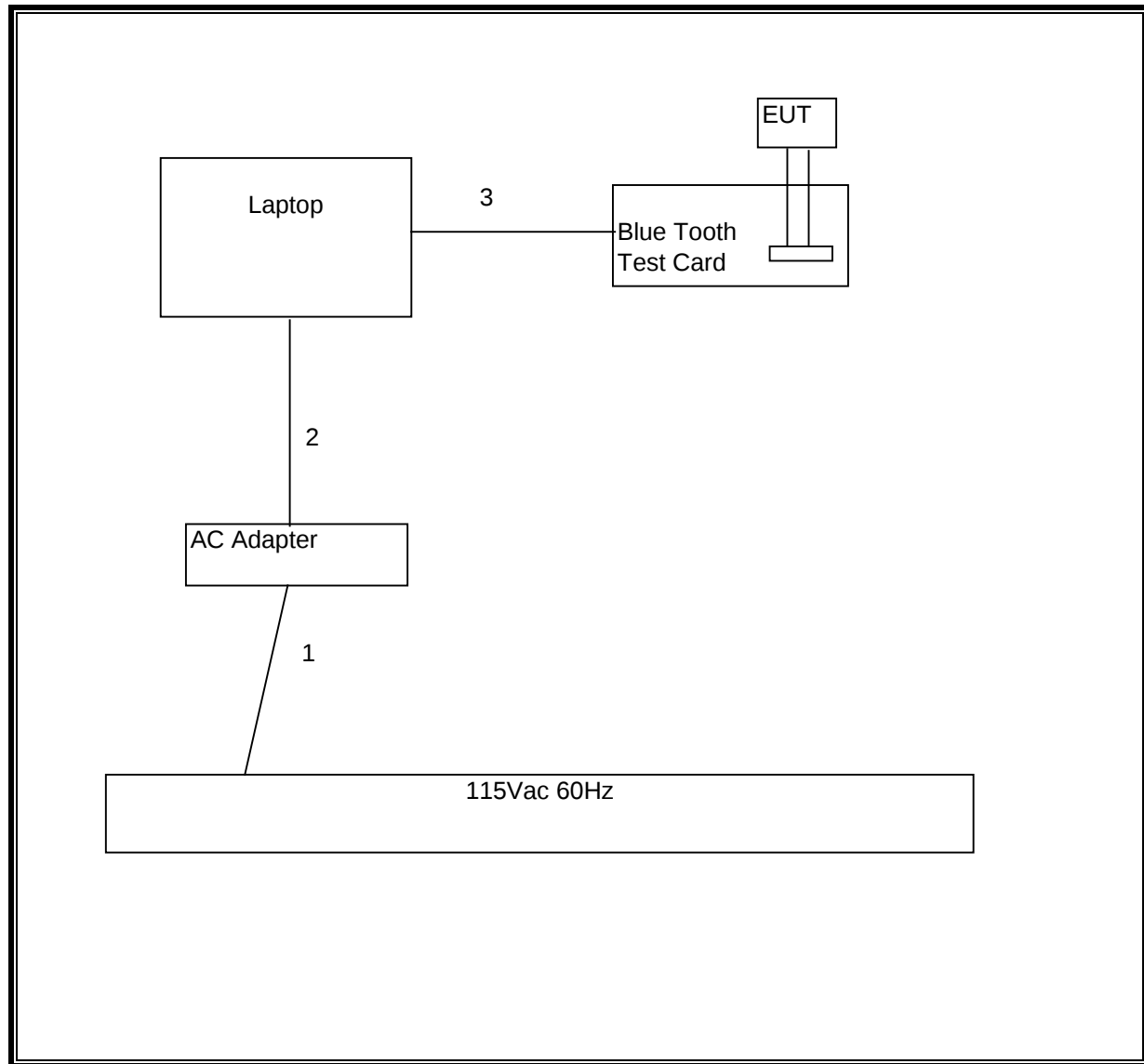
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	NA
2	AC	1	US 115V	Un-shielded	2m	NA
3	USB	1	USB	Un-shielded	2m	NA

TEST SETUP

The EUT connected to host laptop computer during the tests via USB cable. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	Cal Due
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	9/3/07
EMI Receiver, 9 kHz ~ 2.9 GHz	Agilent / HP	8542E	3942A00286	2/4/07
RF Filter Section	Agilent / HP	85420E	3705A00256	2/4/07
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	8/17/07
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	MY43360112	5/3/07
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/07
EMI Test Receiver	R & S	ESHS 20	827129/006	1/27/08
Peak / Average Power Sensor	Agilent	E9327A	US40440755	12/2/07
Peak Power Meter	Agilent / HP	E4416A	GB41291160	12/2/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	2238	4/22/07
2.4 - 2.5 Reject Filter	Micro Tronics	BRM50702	1	N/A

7. LIMITS AND RESULTS

7.1. ANTENNA PORT CHANNEL TESTS

7.1.1. PEAK OUTPUT POWER

PEAK POWER LIMIT

§15.247 (b) The maximum peak output power of the intentional radiator shall not exceed the following:

§15.247 (b) (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1 watt.

§15.247 (b) (4) Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The maximum antenna gain is 1.55 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

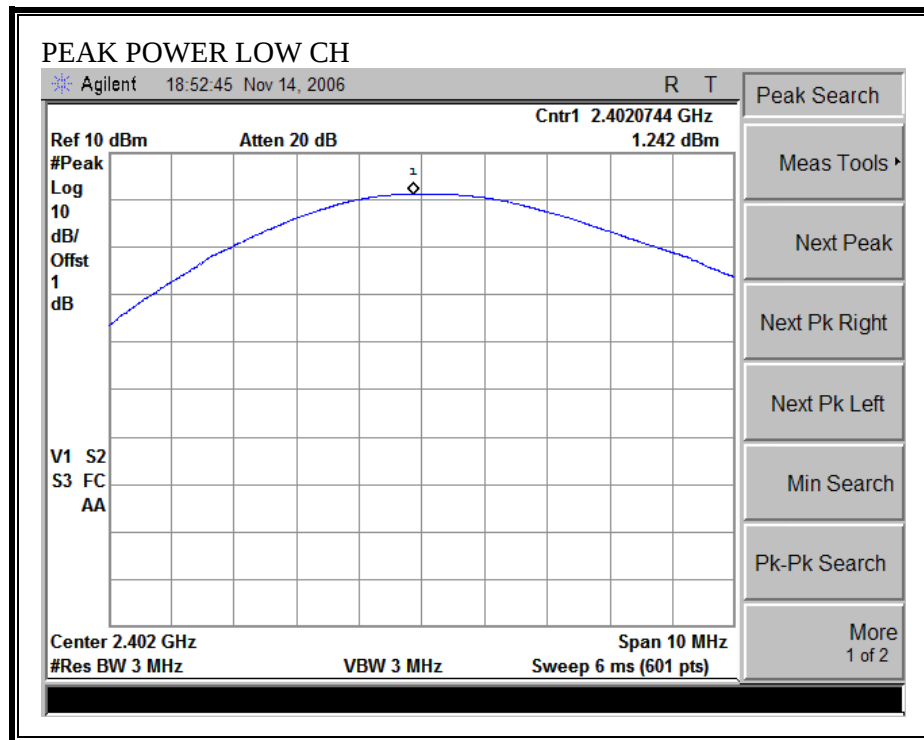
The transmitter output is connected to a spectrum analyzer and the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

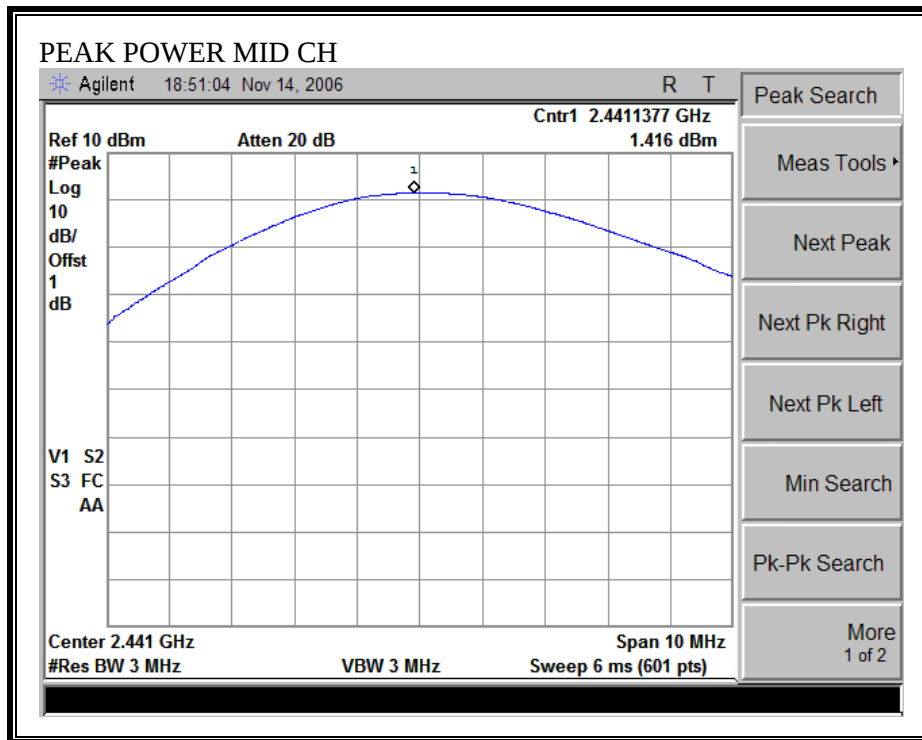
RESULTS

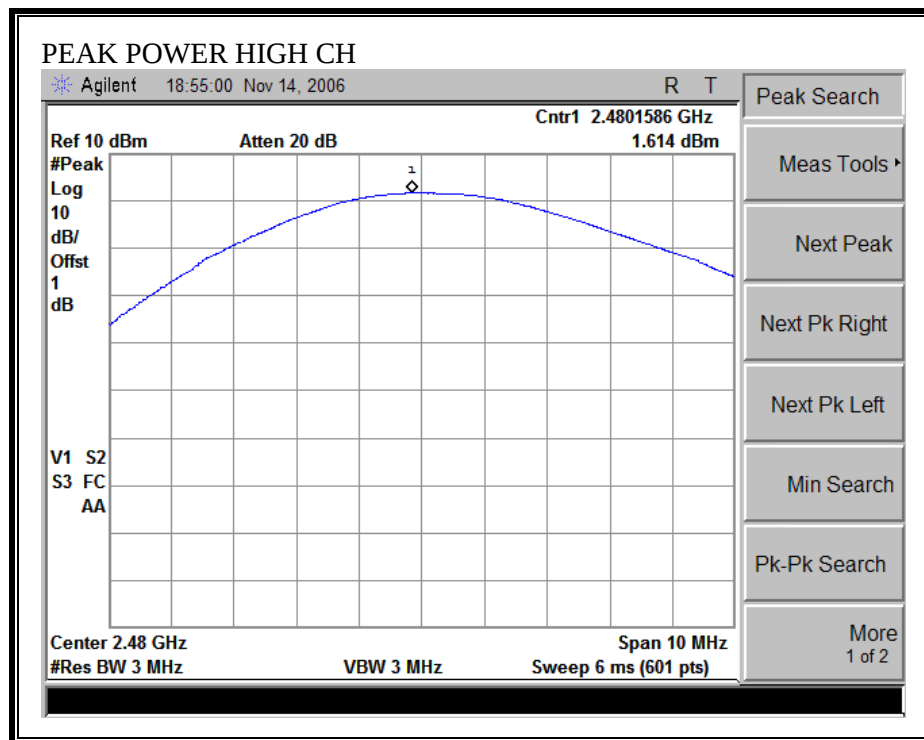
No non-compliance noted:

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	1.24	30	-28.76
Middle	2441	1.42	30	-28.58
High	2480	1.61	30	-28.39

OUTPUT POWER







7.1.2. MAXIMUM PERMISSIBLE EXPOSURE

LIMITS

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

CALCULATIONS

Given

$$E = \sqrt{(30 * P * G) / d}$$

and

$$S = E^2 / 3770$$

where

E = Field Strength in Volts/meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power Density in milliwatts/square centimeter

Combining equations and rearranging the terms to express the distance as a function of the remaining variables yields:

$$d = \sqrt{((30 * P * G) / (3770 * S))}$$

Changing to units of Power to mW and Distance to cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = 100 * d \text{ (m)}$$

yields

$$d = 100 * \sqrt{((30 * (P / 1000) * G) / (3770 * S))}$$

$$d = 0.282 * \sqrt{(P * G / S)}$$

where

d = distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power Density in mW/cm²

Substituting the logarithmic form of power and gain using:

$$P \text{ (mW)} = 10^{(P \text{ (dBm)} / 10)} \text{ and}$$

$$G \text{ (numeric)} = 10^{(G \text{ (dBi)} / 10)}$$

yields

$$d = 0.282 * 10^{((P + G) / 20)} / \sqrt{S}$$

where

d = MPE distance in cm

P = Power in dBm

G = Antenna Gain in dBi

S = Power Density Limit in mW/cm²

Rearranging terms to calculate the power density at a specific distance yields

$$S = 0.0795 * 10^{((P + G) / 10)} / (d^2)$$

LIMITS

From §1.1310 Table 1 (B), the maximum value of $S = 1.0 \text{ mW/cm}^2$

RESULTS

Power Density Limit (mW/cm²)	Output Power (dBm)	Antenna Gain (dBi)	MPE Distance (cm)
1.0	1.61	1.55	0.41

NOTE: For mobile or fixed location transmitters, the minimum separation distance is 20 cm, even if calculations indicate that the MPE distance would be less.

7.2. RADIATED EMISSIONS

7.2.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS

LIMITS

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

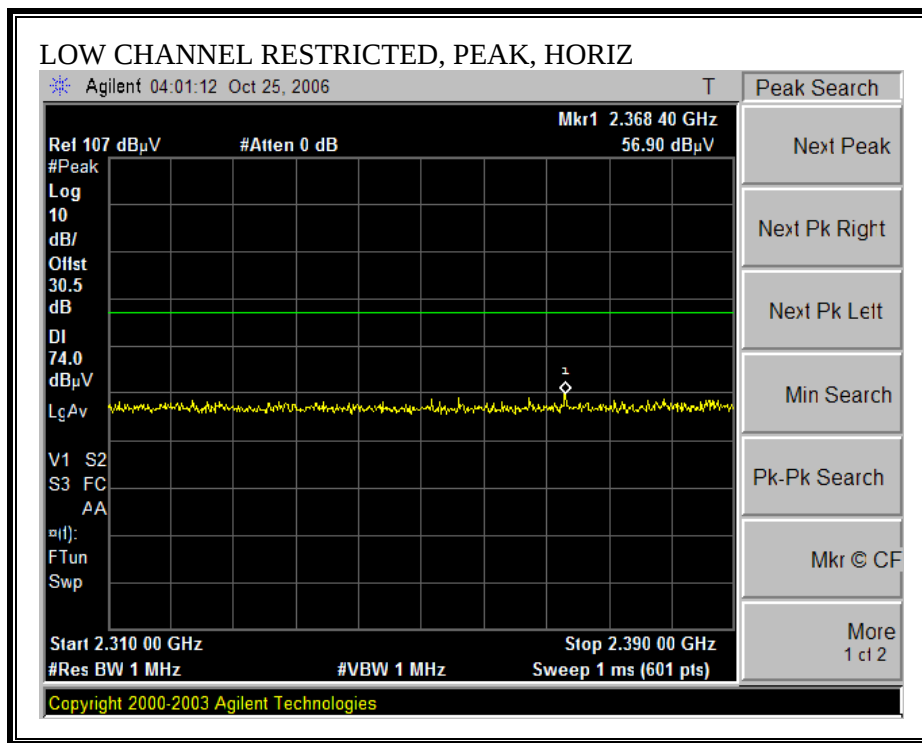
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

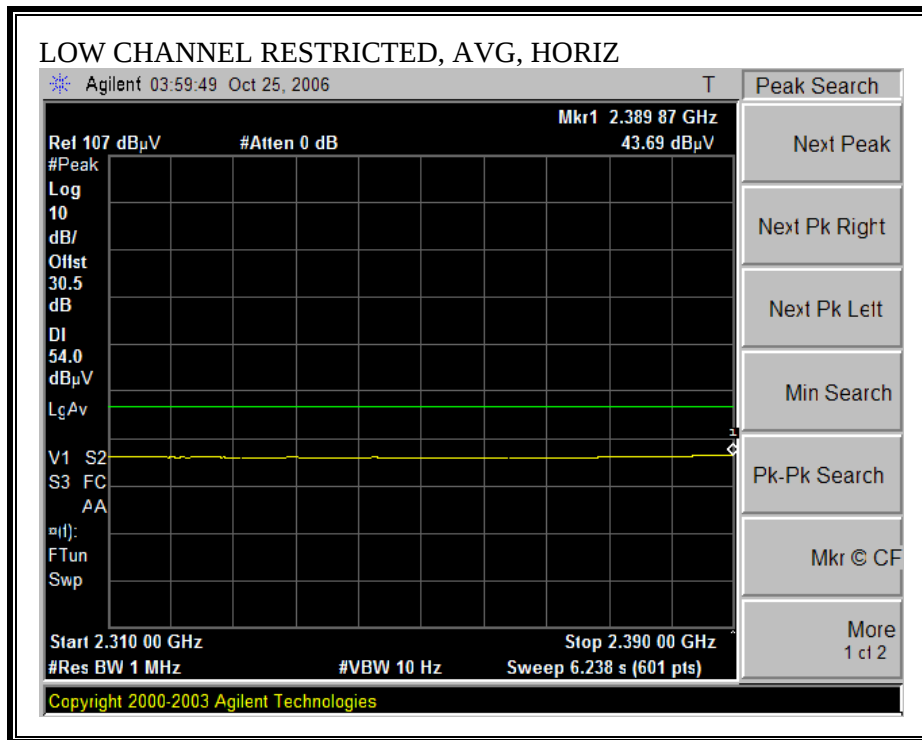
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each 5 GHz band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

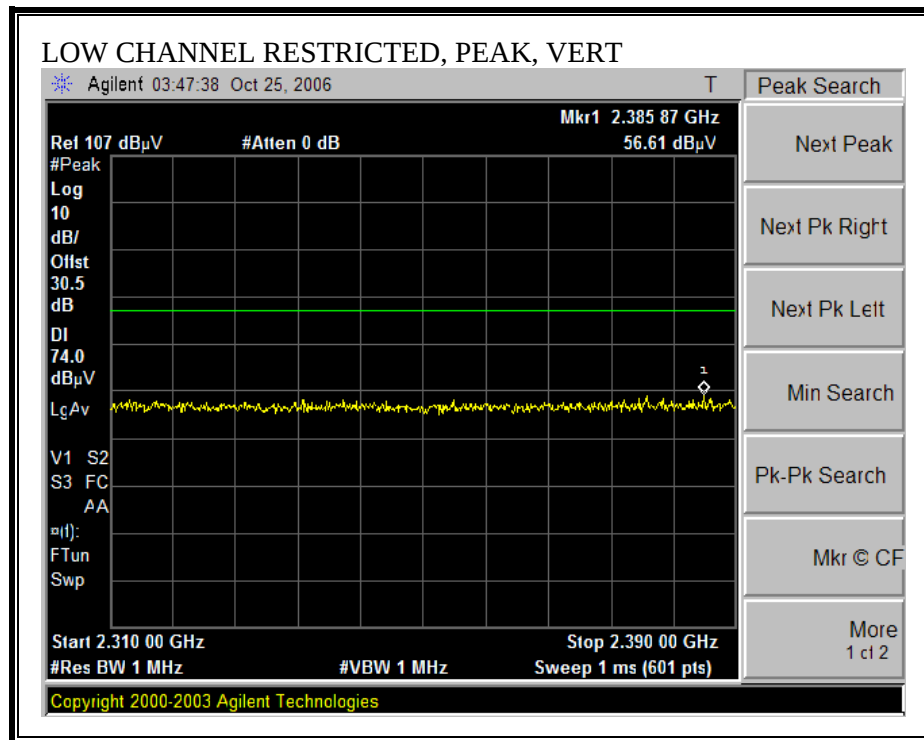
7.2.2. TRANSMITTER RADIATED EMISSIONS ABOVE 1 GHZ

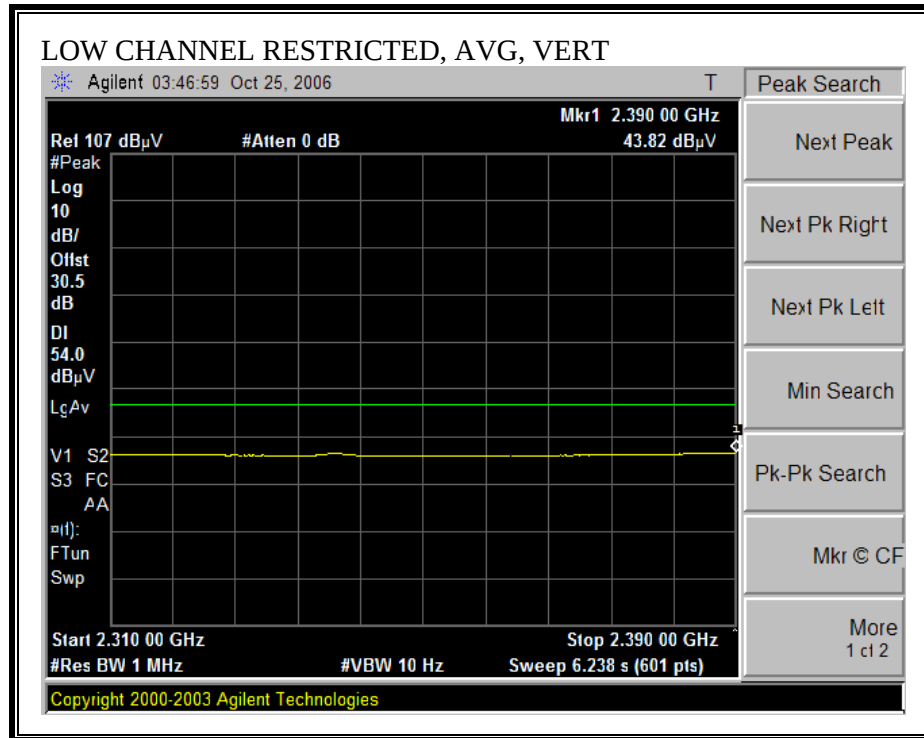
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



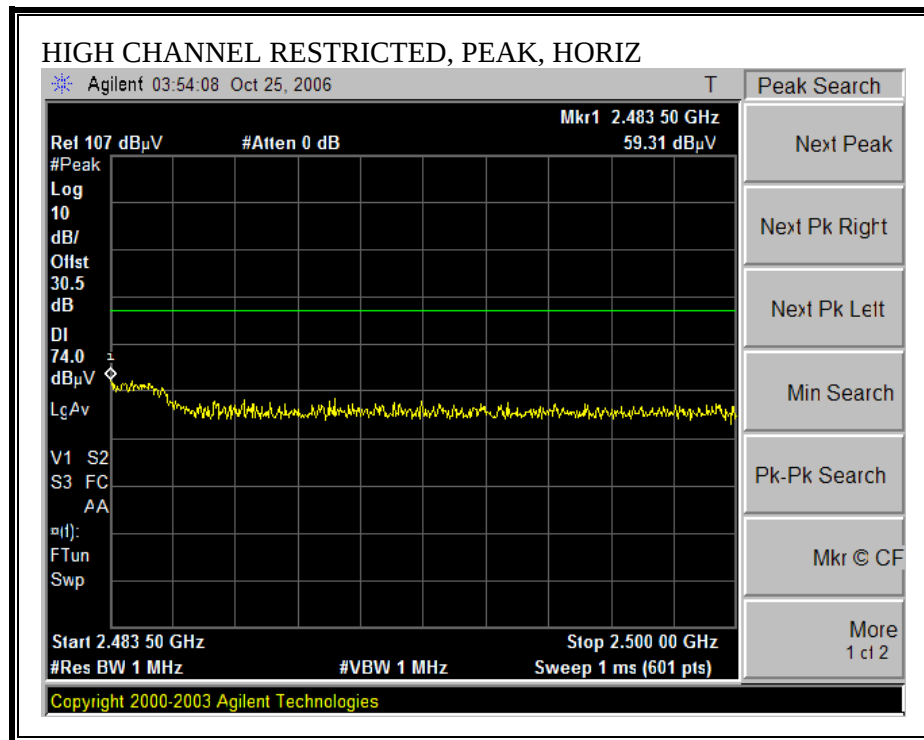


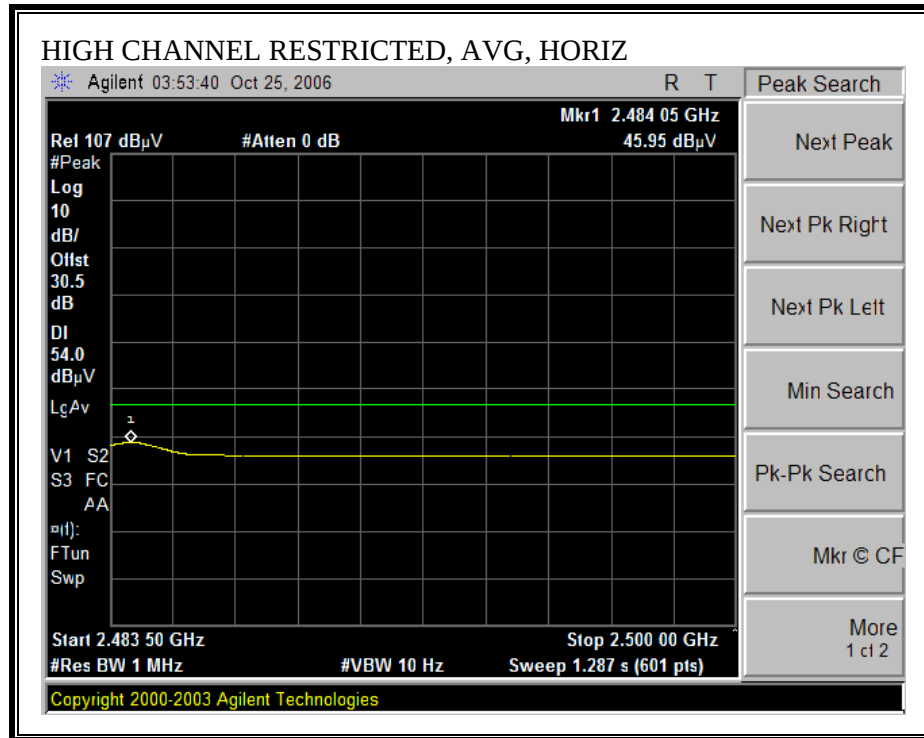
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



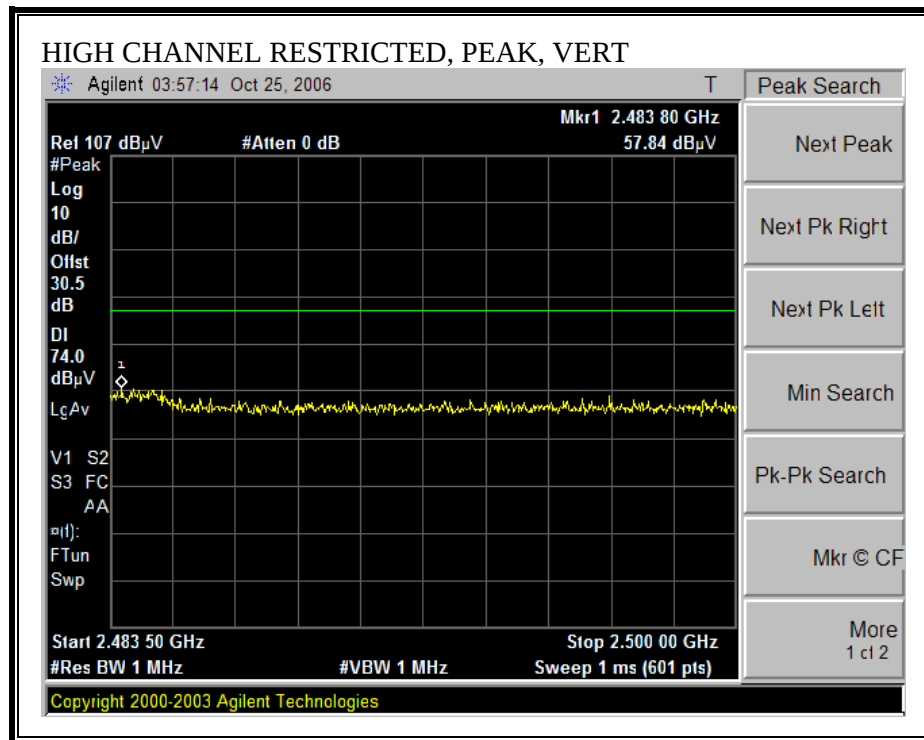


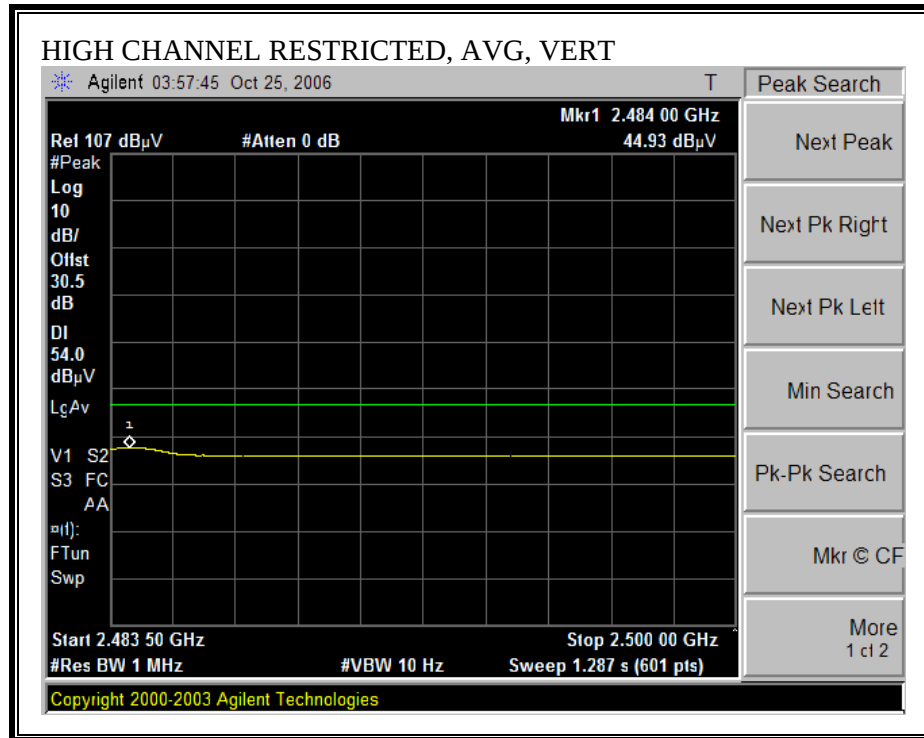
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement																
Compliance Certification Services, Morgan Hill Open Field Site																
Company: Toshiba America Information Systems, Inc.																
Project #: 06U10706																
Date: 11/14/2006																
Test Engineer: Chin Pang																
Configuration: EUT/TBN002 Antenna/Laptop																
Mode: TX																
Test Equipment:																
Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit								
T60; S/N: 2238 @3m		T34 HP 8449B						FCC 15.205								
Hi Frequency Cables																
2 foot cable		3 foot cable		12 foot cable		HPF		Reject Filter		Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz						
Chin 177079003				Chin 200354001				R_001								
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
Low Ch, 2402MHz																
4.804	3.0	49.5	36.3	33.0	3.3	-34.8	0.0	0.0	51.0	37.8	74	54	-23.0	-16.2	V	
4.804	3.0	49.0	36.0	33.0	3.3	-34.8	0.0	0.0	50.5	37.5	74	54	-23.5	-16.5	H	
Mid Ch, 2441MHz																
4.882	3.0	50.0	36.4	33.1	3.4	-34.8	0.0	0.0	51.6	38.0	74	54	-22.4	-16.0	V	
7.323	3.0	44.5	31.5	35.5	3.8	-34.1	0.0	0.0	49.7	36.7	74	54	-24.3	-17.3	V	
4.882	3.0	48.7	35.8	33.1	3.4	-34.8	0.0	0.0	50.3	37.4	74	54	-23.7	-16.6	H	
7.323	3.0	44.0	31.4	35.5	3.8	-34.1	0.0	0.0	49.2	36.6	74	54	-24.8	-17.4	H	
High Ch, 2480MHz																
4.960	3.0	50.6	36.8	33.1	3.4	-34.8	0.0	0.0	52.3	38.5	74	54	-21.7	-15.5	V	
7.440	3.0	43.8	31.2	35.6	3.8	-34.1	0.0	0.0	49.2	36.6	74	54	-24.8	-17.4	V	
4.960	3.0	48.6	35.8	33.1	3.4	-34.8	0.0	0.0	50.3	37.5	74	54	-23.7	-16.5	H	
7.440	3.0	43.6	31.0	35.6	3.8	-34.1	0.0	0.0	49.0	36.4	74	54	-25.0	-17.6	H	
Rev. 5.1.6																
Note: No other emissions were detected above the system noise floor.																
f	Measurement Frequency			Amp	Preamp Gain			Avg Lim	Average Field Strength Limit							
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Pk Lim	Peak Field Strength Limit							
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Avg Mar	Margin vs. Average Limit							
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Pk Mar	Margin vs. Peak Limit							
CL	Cable Loss			HPF	High Pass Filter											

7.2.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz

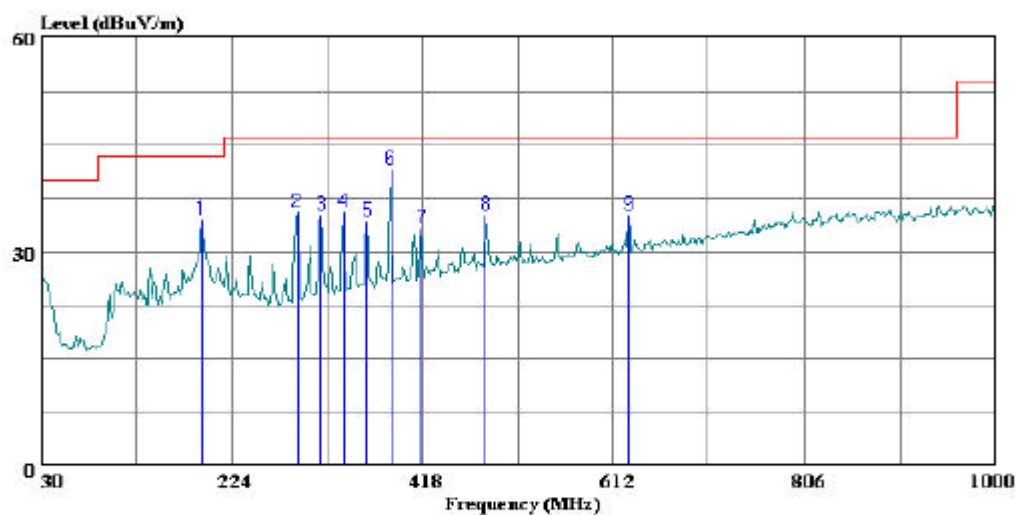
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 9 File#: 06U10706 emi.EMI Date: 11-14-2006 Time: 15:05:25



(Auxiliary ATC)

Trace: 8

Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator:: Chin Pang
Company: : Toshiba
Project #: : 06U10706
Configuration: BUT / TBN002 Antenna/Laptop
Mode of Oper.: TX
Target: : FCC Class B

HORIZONTAL DATA

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	193.930	20.96	13.56	34.52	43.50	-8.98	Peak
2	290.930	20.28	15.33	35.61	46.00	-10.39	Peak
3	315.180	19.00	16.08	35.08	46.00	-10.92	Peak
4	337.490	19.03	16.56	35.59	46.00	-10.41	Peak
5	361.740	17.12	17.20	34.32	46.00	-11.68	Peak
6	385.990	23.75	17.73	41.48	46.00	-4.52	Peak
7	417.030	14.77	18.47	33.24	46.00	-12.76	Peak
8	482.990	15.28	19.89	35.17	46.00	-10.83	Peak
9	628.490	13.04	22.00	35.04	46.00	-10.96	Peak

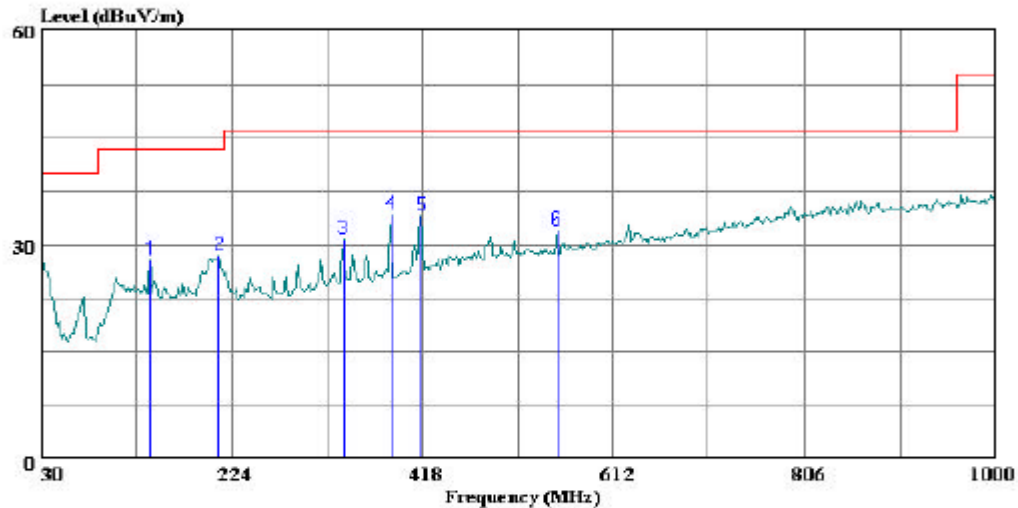
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 7 File#: 06U10706 emi.EMI Date: 11-14-2006 Time: 15:00:14



(Auxiliary ATC)

Trace: 6

Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator:: Chin Pang
Company: : Toshiba
Project #: : 06U10706
Configuration: BUT / TBN002 Antenna/Laptop
Mode of Oper.: TX
Target: : FCC Class B

VERTICAL DATA

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	140.580	12.98	14.77	27.75	43.50	-15.75	Peak
2	211.390	15.50	12.92	28.42	43.50	-15.08	Peak
3	337.490	14.21	16.56	30.77	46.00	-15.23	Peak
4	385.990	16.62	17.73	34.35	46.00	-11.65	Peak
5	417.030	15.63	18.47	34.10	46.00	-11.90	Peak
6	555.740	11.02	20.95	31.97	46.00	-14.03	Peak

7.3. POWERLINE CONDUCTED EMISSIONS

LIMIT

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

No non-compliance noted:

6 WORST EMISSIONS

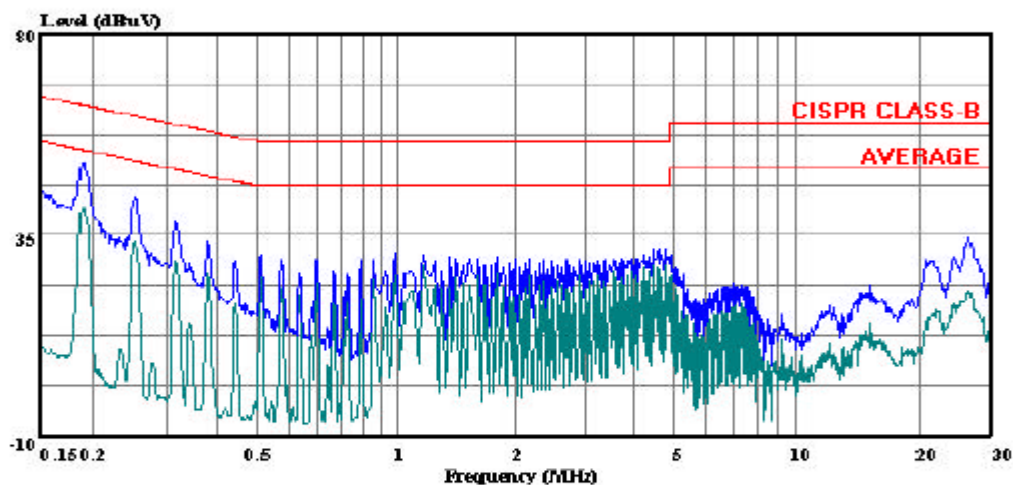
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.19	51.00	--	41.07	0.00	64.04	54.04	-13.04	-12.97	L1
0.25	43.47	--	33.55	0.00	61.66	51.66	-18.19	-18.11	L1
4.72	31.82	--	28.10	0.00	56.00	46.00	-24.18	-17.90	L1
0.19	46.72	--	37.75	0.00	64.04	54.04	-17.32	-16.29	L2
0.26	39.28	--	28.17	0.00	61.56	51.56	-22.28	-23.39	L2
4.70	28.58	--	24.75	0.00	56.00	46.00	-27.42	-21.25	L2
6 Worst Data									

LINE 1 RESULTS



Compliance Certification Services
561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 7 File#: 06u10706 LC.EMI Date: 11-14-2006 Time: 15:23:51



Trace: 5

Ref Trace:

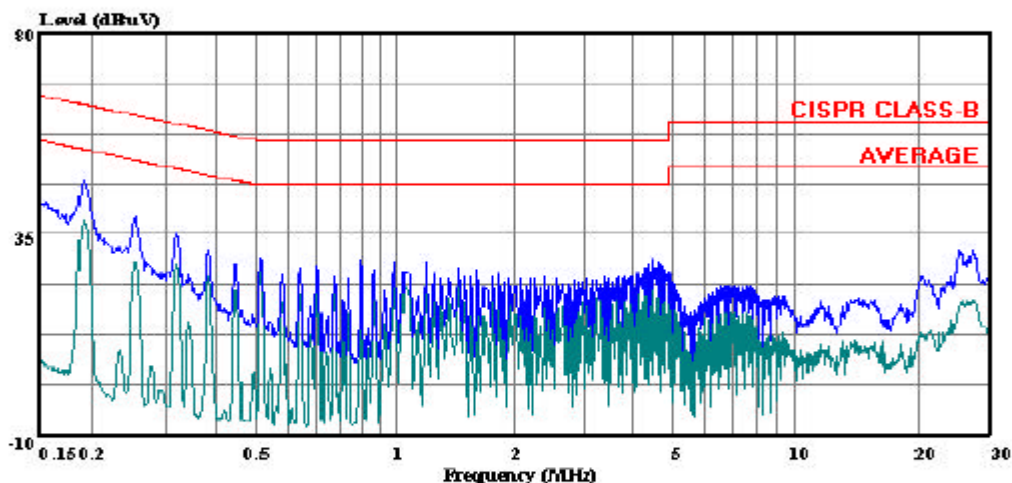
Condition: CISPR CLASS-B
Test Operator : Chin Pang
Project # : 06U10706
Company : Toshiba
EUT configuration: Laptop/EUT/TBN002 Antenna
Mode of operation: TX
Power Source : 115VAC / 60HZ
: L1: Peak (Blue), Avg (Green)

LINE 2 RESULTS



Compliance Certification Services
561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 14 File#: 06u10706 LC.EMI Date: 11-14-2006 Time: 15:40:15



Trace: 12

Ref Trace:

Condition: CISPR CLASS-B
Test Operator : Chin Pang
Project # : 06U10706
Company : Toshiba
EUT configuration: Laptop/EUT/TBN002 Antenna
Mode of operation: TX
Power Source : 115VAC / 60HZ
: L2: Peak (Blue), Avg (Green)