FCC CFR47 PART 15 SUBPART C CERTIFICATION

TEST REPORT

FOR

TABLET PC WITH INTEL WIRELESS MODULE

MODEL NUMBER: LT20

FCC ID: BEJTBLT20A

REPORT NUMBER: 05I3251-1

ISSUE DATE: FEBRUARY 28, 2005

Prepared for
LG ELECTRONICS INC.
19-1, CHEONGHO-RI, JINWUY-MYUN,
PYUNGTAIK-SHI, KYUNGGI-DO, 451-713 KOREA

Prepared by
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LAB CODE:200065-0

Revision History

Rev.	Revisions	Revised By

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS INC. 19-1, CHEONGHO-RI, JINWUY-MYUN, PYUNGTAIK-SHI, KYUNGGI-DO, 451-713 KOREA
EUT DESCRIPTION:	TABLET PC WITH INTEL WIRELESS MODULE
MODEL:	LT20
SERIAL NUMBER:	311K1202434
DATE TESTED:	FEBRUARY 14 – 28, 2005

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.

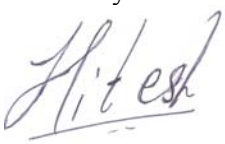
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. 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.

Note: The 5.8 and 2.4 GHz DTS bands of 802.11 a/g mode are applicable to this report; another band of operation (5.2 GHz UNII) is documented in a separate report.

Approved & Released For CCS By:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



HITESH H. SOLANKI
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 EUT is a TABLET PC with a wireless module, an 802.11a/b/g transceiver (model no.: WM3B2915ABG).

The radio module is manufactured by INTEL and has a modular approval from the FCC (FCC ID: PD9WM3B2915ABG).

The conducted power levels were adjusted to match the power levels specified in the approval and hence only radiated tests were performed on the EUT.

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

2400 to 2483.5 MHz Authorized Band			
Frequency Range (MHz)	**Mode**	**Output Power (dBm)**	**Output Power (mW)**
2412 - 2462	802.11b	19.20	83.18
2412 - 2462	802.11g	24.00	251.19
5725 to 5850 MHz Authorized Band			
Frequency Range (MHz)	**Mode**	**Output Power (dBm)**	**Output Power (mW)**
5745 - 5825	802.11a	23.20	208.93

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two integral antennas for diversity, each with a maximum gain of –0.34 dBi in the 2400-2483.5 GHz range, and 2.22 dBi in the 5725-5850 GHz range.

5.3. SOFTWARE AND FIRMWARE

The EUT support driver software and hardware installed in the equipment during testing was Calexico II based NICs (config A1.6 QS), Windows XP w/ SP1, Firmware Version: 4.1.4.6

The test utility software used during testing was CRTU-ABG version 3.2.11.0000

5.4. WORST-CASE CONFIGURATION AND MODE

Since the EUT has more than one orientation in which it can be used. The worst-case position was determined by performing bandedge tests on all the orientations (viz., X-plane, Y-plane, Z-plane and Laptop orientation) and was found to be the laptop orientation. Thus all the radiated tests were performed with EUT in laptop orientation.

5.5. EUT MODIFICATIONS

The shield on the wireless radio card was making contact with antenna ports of the card due to which the emissions of the second harmonic of the fundamental frequency was exceeding the maximum strength allowed for the 802.11b mode. Thus an insulating tape was used to prevent the contact and as a result the emissions were found to be under the limits.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC ADAPTER	LG	HP-OK065B13	H6040E51	N/A

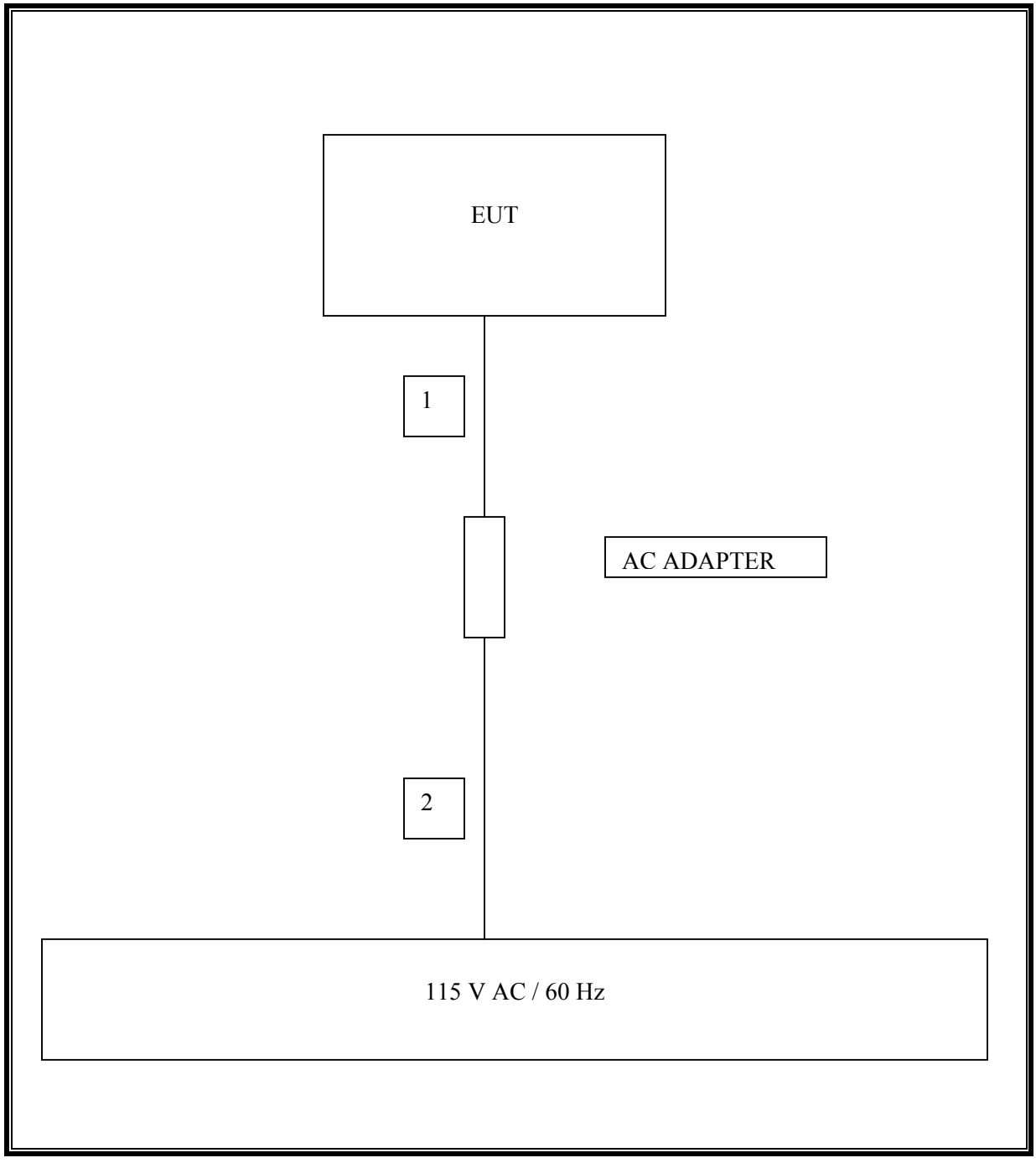
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	DC	Unshielded	1.5m	
2	AC	1	AC	Unshielded	1m	

TEST SETUP

The EUT is a Tablet PC. It has the wireless module installed within which has already obtained a modular approval. Therefore only radiated tests were performed on this EUT.
The EUT was operated using the s/w installed on it CRTU-ABG for continuous transmit/receive on specified channels

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Description	Manufacturer	Model	Serial Number	Cal Due
EMI Test Receiver	R & S	ESHS 20	827129/006	10/22/2005
Site A Line Stabilizer / Conditioner	Tripplite	LC-1800a	A0051681	CNR
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/2005
LISN, 10 kHz ~ 30 MHz	Solar	8012-50-R-24-BNC	8379443	10/21/2005
Spectrum Analyzer	HP	E4446A	US42510266	8/25/2005
Antenna, Horn 1 ~ 18 GHz	EMCO	3117	29310	9/12/2005
Preamplifier, 1 ~ 26.5 GHz	HP	8449B	3008A00369	8/17/2005
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	29800	5/13/2005
Peak Power Meter	Agilent	E4416A	GB41291160	2/9/2006
SA Display Section 2	HP	85662A	2816A16696	5/24/2005
Quasi-Peak Adaptor	HP	85650A	2811A01155	5/24/2005
Spectrum Analyzer	HP	8568B		5/25/2005
30MHz---- 2Ghz	Sunol Sciences	JB1 Antenna	A121003	9/22/2005
4.0 High Pass Filter	Micro Tronics	HPM13351	3	N/A
2.4 - 2.5 Reject Filter	Micro Tronics	BRM50702	3	N/A
5.75 - 5.8 Reject Filter	Micro Tronics	BRC13192	2	N/A

7. LIMITS AND RESULTS

7.1. CHANNEL TESTS FOR THE 2400 TO 2483.5 MHz BAND

7.1.1. AVERAGE POWER

AVERAGE POWER LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.
Since power levels from the modular approval were used as a reference, only the average power levels were measured for channel tests under this band.

RESULTS

No non-compliance noted:

The cable assembly insertion loss of 11.42 dB (including 10 dB pad and 1.42 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

802.11b Mode		
Channel	**Frequency (MHz)**	**Power (dBm)**
Low	2412	15.00
Middle	2437	17.00
High	2462	17.10

802.11g Mode		
Channel	**Frequency (MHz)**	**Power (dBm)**
Low	2412	15.40
Middle	2437	15.30
High	2462	15.25

7.2. CHANNEL TESTS FOR THE 5725 TO 5850 MHz BAND

7.2.1. AVERAGE POWER

AVERAGE POWER LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.
Since power levels from the modular approval were used as a reference, only the average power levels were measured for channel tests under this band.

RESULTS

No non-compliance noted:

The cable assembly insertion loss of 11.92 dB (including 10 dB pad and 1.92 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

802.11a Mode

Channel	Frequency (MHz)	Average Power (dBm)
Low	5745	17.30
Middle	5785	17.30
High	5825	17.00

7.3. RADIATED EMISSIONS

7.3.1. 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.

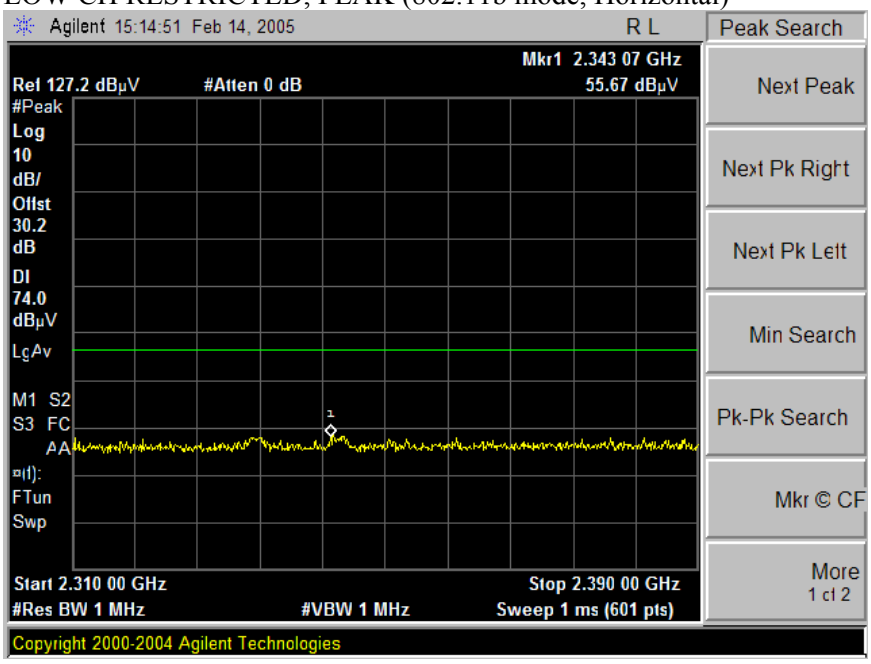
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each 5 GHz band.

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.

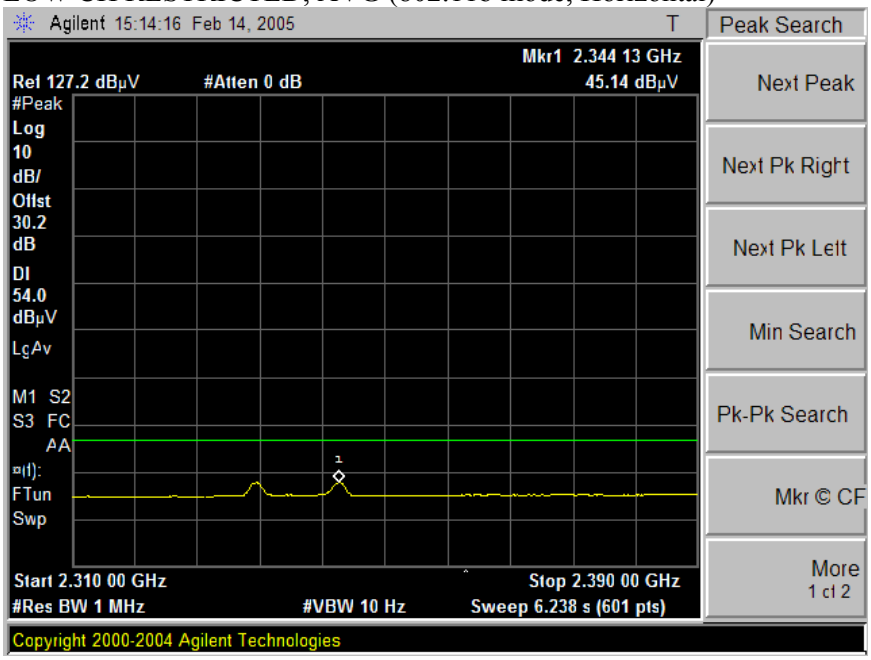
7.3.2. TRANSMITTER ABOVE 1 GHz FOR 2400 TO 2483.5 MHz BAND

RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, HORIZONTAL)

LOW CH RESTRICTED, PEAK (802.11b mode, Horizontal)

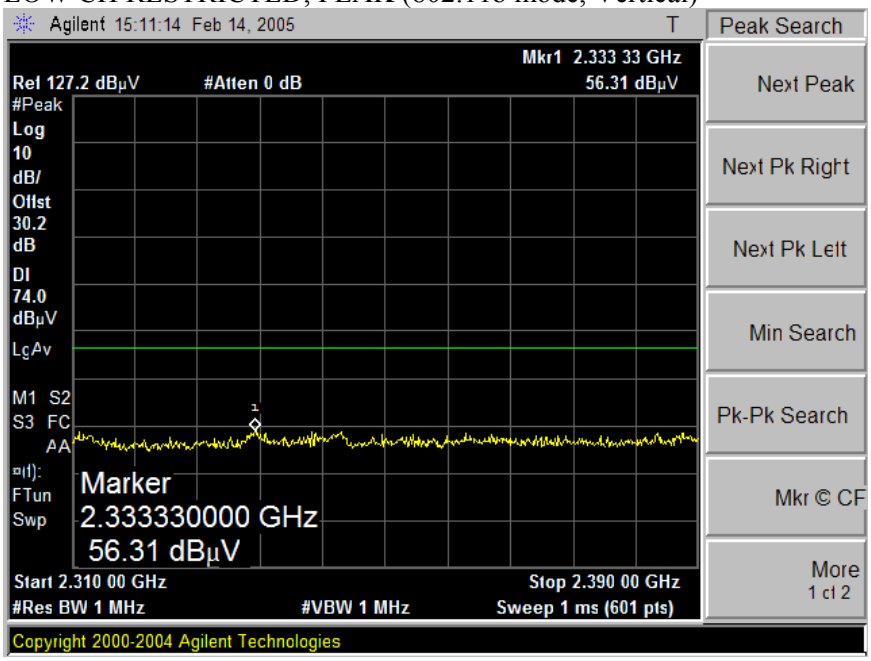


LOW CH RESTRICTED, AVG (802.11b mode, Horizontal)

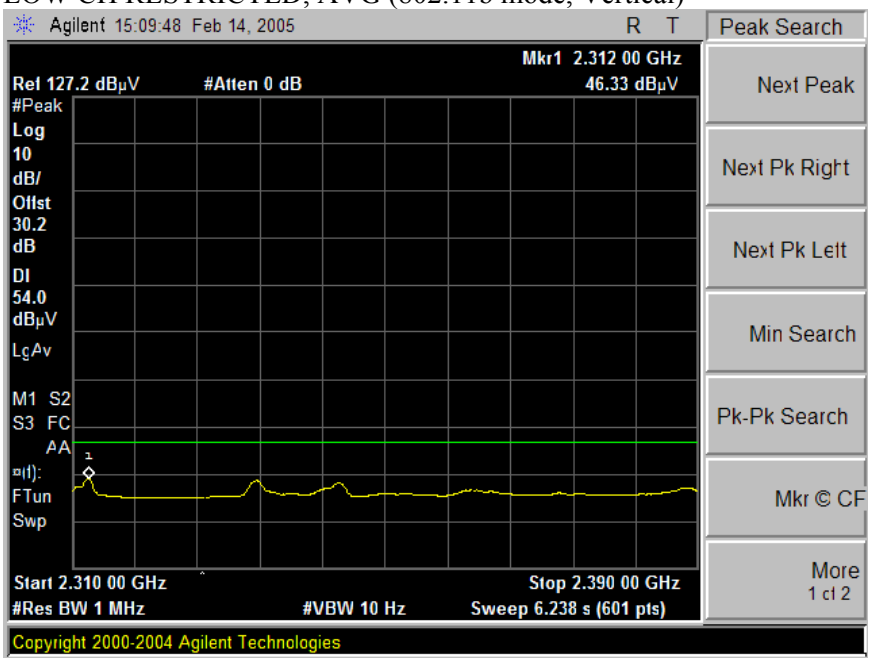


RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, VERTICAL)

LOW CH RESTRICTED, PEAK (802.11b mode, Vertical)

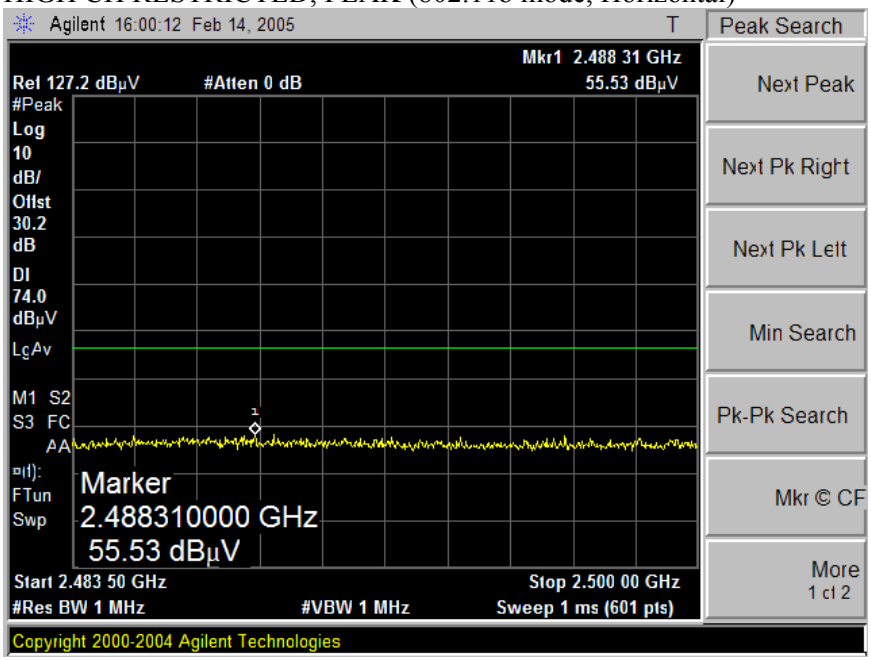


LOW CH RESTRICTED, AVG (802.11b mode, Vertical)

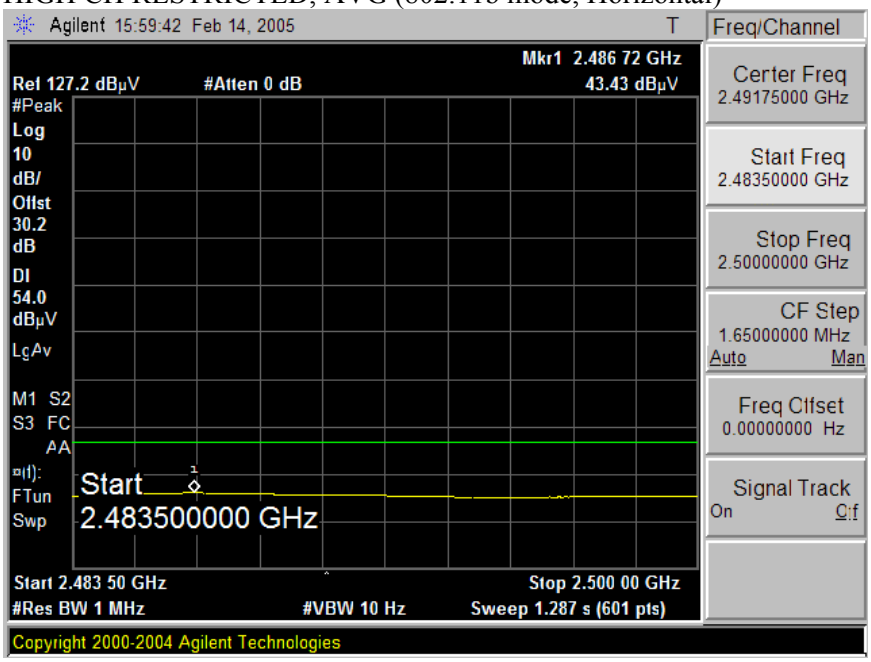


RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)

HIGH CH RESTRICTED, PEAK (802.11b mode, Horizontal)

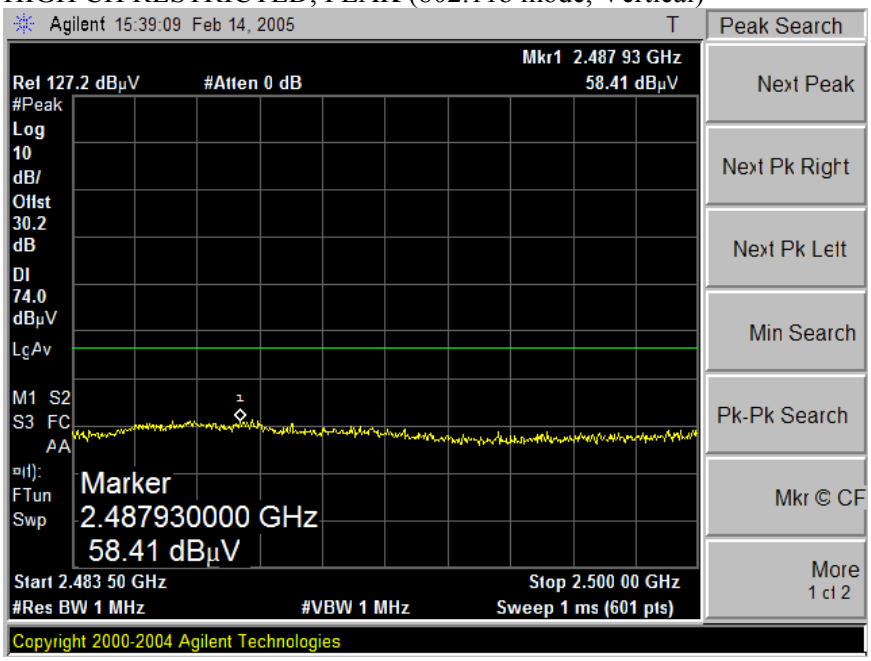


HIGH CH RESTRICTED, AVG (802.11b mode, Horizontal)

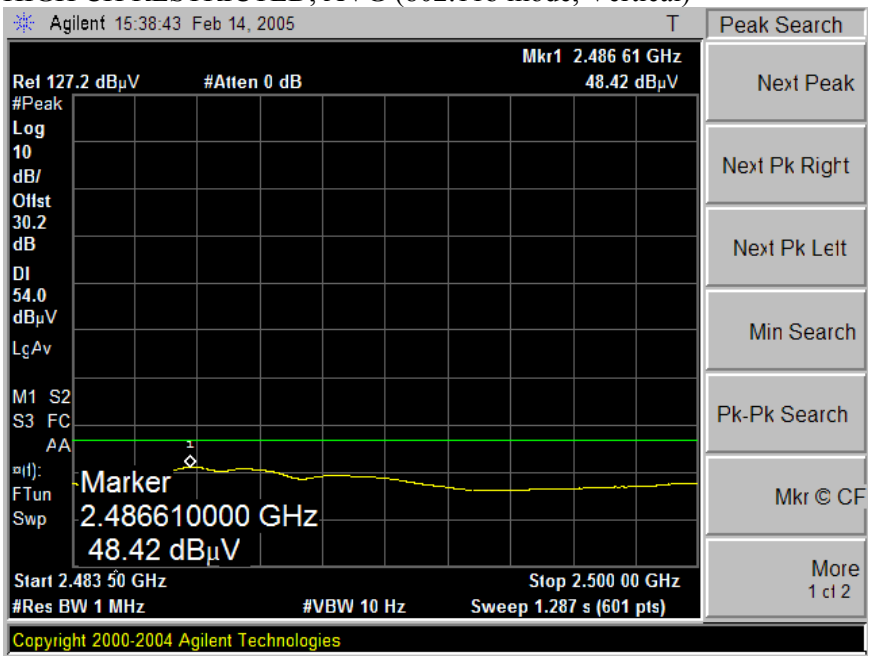


RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, VERTICAL)

HIGH CH RESTRICTED, PEAK (802.11b mode, Vertical)



HIGH CH RESTRICTED, AVG (802.11b mode, Vertical)



HARMONICS AND SPURIOUS EMISSIONS (b MODE)

02/14/05 **High Frequency Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: HITESH H. SOLANKI
Project #: 05I3251
Company: LG ELECTRONICS INC.
EUT Descrip.: TABLET PC with INTEL MINIPCI WIRELESS MODULE
EUT M/N: LT20(with INTEL MiniPCI MODEL : WM3B2915ABG CARD # E4ED6
Test Target: FCC CLASS B
Mode Oper: TRANSMIT ON SPECIFIED CHANNELS; 802.11 b mode

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Pre-amplifer 1-26GHz: T86 Miteq 924341
Pre-amplifer 26-40GHz:
Horn > 18GHz:

Hi Frequency Cables
2 foot cable:
3 foot cable:
4 foot cable: 4_Hitesh
12 foot cable: 12_Hitesh
HPF: HPF_4.0GHz
Reject Filter: R_002

Peak Measurements
RBW=VBW=1MHz

Average Measurements
RBW=1MHz ; VBW=10Hz

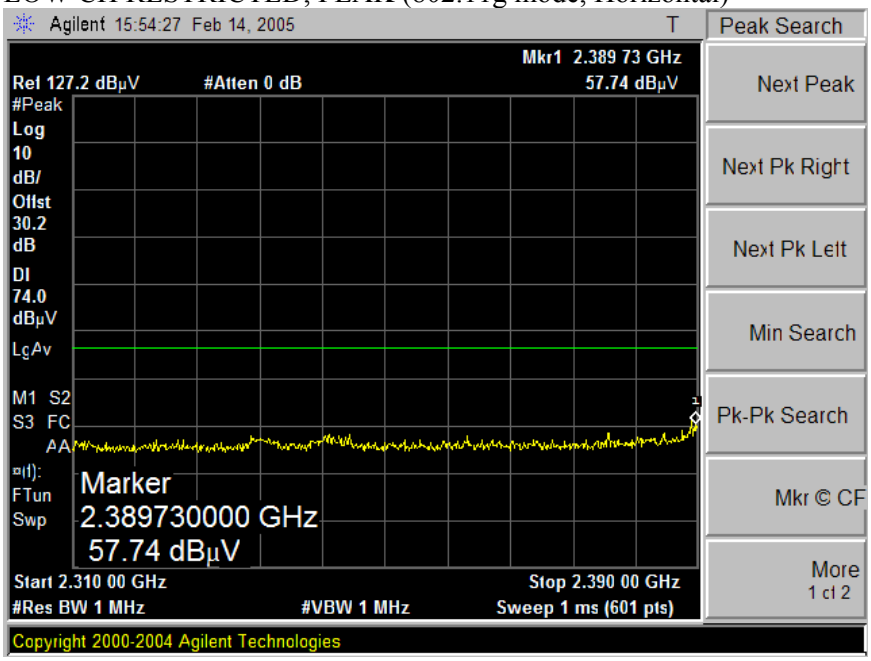
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
LOW CHANNEL 2412 MHz															
4.824	3.0	51.9	41.3	33.0	4.5	-44.0	0.0	0.6	45.9	35.3	74	54	-28.1	-18.7	V
7.236	3.0	54.0	43.9	35.8	6.2	-45.0	0.0	0.6	51.6	41.5	74	54	-22.4	-12.5	V
9.648	3.0	50.7	37.2	38.2	7.7	-43.4	0.0	0.8	53.9	40.4	74	54	-20.1	-13.6	V
MIDDLE CHANNEL 2437 MHz															
4.874	3.0	59.3	55.0	33.0	4.5	-44.1	0.0	0.6	53.3	49.0	74	54	-20.7	-5.0	V
7.311	3.0	55.4	46.8	35.9	6.2	-45.0	0.0	0.6	53.1	44.5	74	54	-20.9	-9.5	V
9.748	3.0	50.1	37.4	38.2	7.7	-43.4	0.0	0.8	53.5	40.8	74	54	-20.5	-13.2	V
HIGH CHANNEL 2462 MHz															
4.924	3.0	61.9	59.2	33.0	4.5	-44.2	0.0	0.6	55.9	53.2	74	54	-18.1	-0.8	V
7.386	3.0	56.4	47.6	36.0	6.3	-45.0	0.0	0.6	54.3	45.5	74	54	-19.7	-8.5	V
9.848	3.0	49.8	37.5	38.3	7.7	-43.3	0.0	0.8	53.4	41.1	74	54	-20.6	-12.9	V
LOW CHANNEL 2412 MHz															
4.824	3.0	51.9	40.5	33.0	4.5	-44.0	0.0	0.6	45.9	34.5	74	54	-28.1	-19.5	H
7.236	3.0	53.3	39.7	35.8	6.2	-45.0	0.0	0.6	50.9	37.3	74	54	-23.1	-16.7	H
9.648	3.0	50.1	38.2	38.2	7.7	-43.4	0.0	0.8	53.3	41.4	74	54	-20.7	-12.6	H
MIDDLE CHANNEL 2437 MHz															
4.874	3.0	60.6	56.9	33.0	4.5	-44.1	0.0	0.6	54.6	51.0	74	54	-19.4	-3.0	H
7.311	3.0	54.2	41.7	35.9	6.2	-45.0	0.0	0.6	51.9	39.4	74	54	-22.1	-14.6	H
9.748	3.0	49.9	37.6	38.2	7.7	-43.4	0.0	0.8	53.3	41.0	74	54	-20.7	-13.0	H
HIGH CHANNEL 2462 MHz															
4.924	3.0	60.6	57.5	33.0	4.5	-44.2	0.0	0.6	54.6	51.5	74	54	-19.4	-2.5	H
7.386	3.0	52.8	40.3	36.0	6.3	-45.0	0.0	0.6	50.7	38.2	74	54	-23.3	-15.8	H
9.848	3.0	49.5	37.0	38.3	7.7	-43.3	0.0	0.8	53.1	40.6	74	54	-20.9	-13.4	H

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		

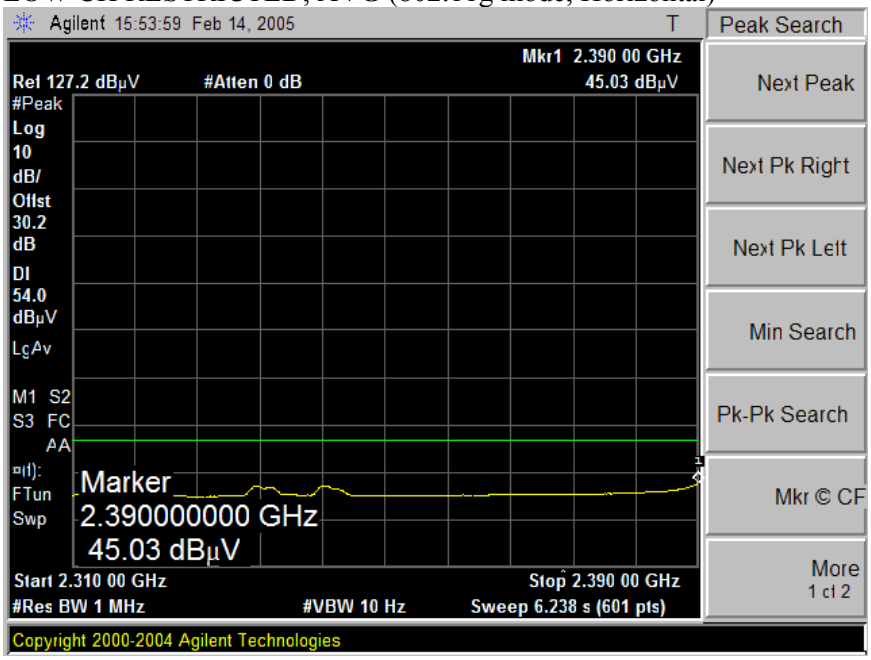
No other Emissions were found up to the 10th harmonic of the fundamental frequency.

RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, HORIZONTAL)

LOW CH RESTRICTED, PEAK (802.11g mode, Horizontal)

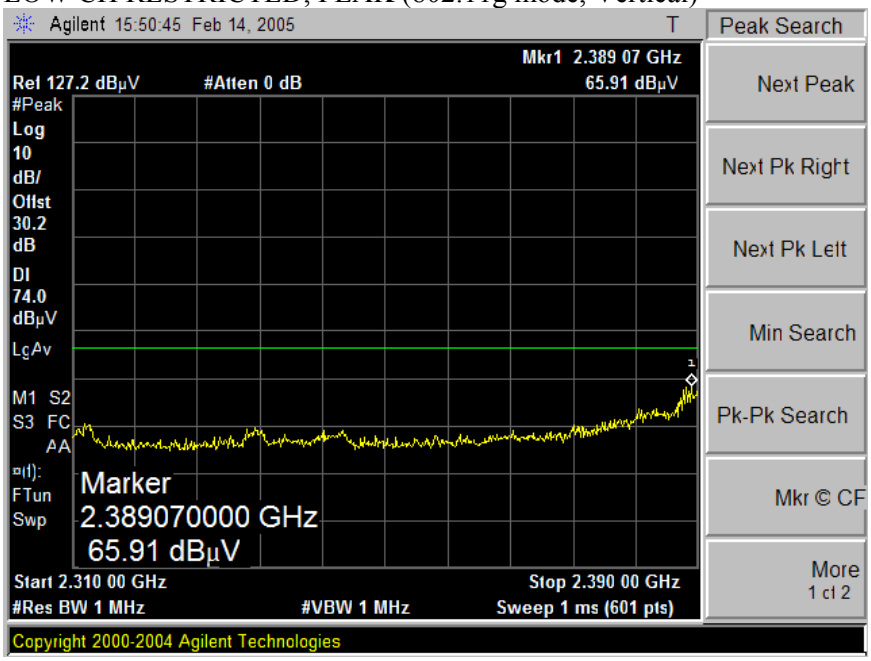


LOW CH RESTRICTED, AVG (802.11g mode, Horizontal)

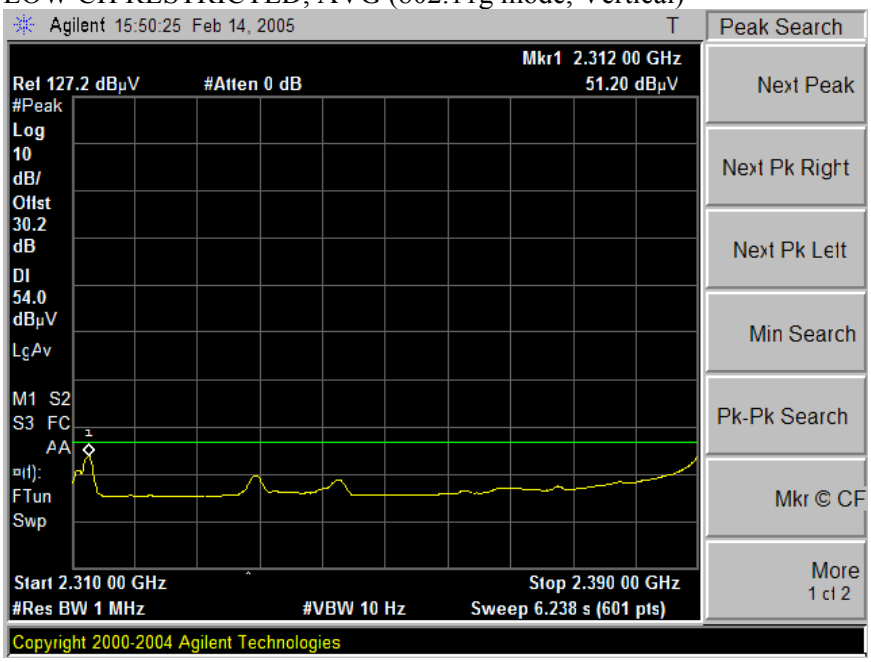


RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, VERTICAL)

LOW CH RESTRICTED, PEAK (802.11g mode, Vertical)

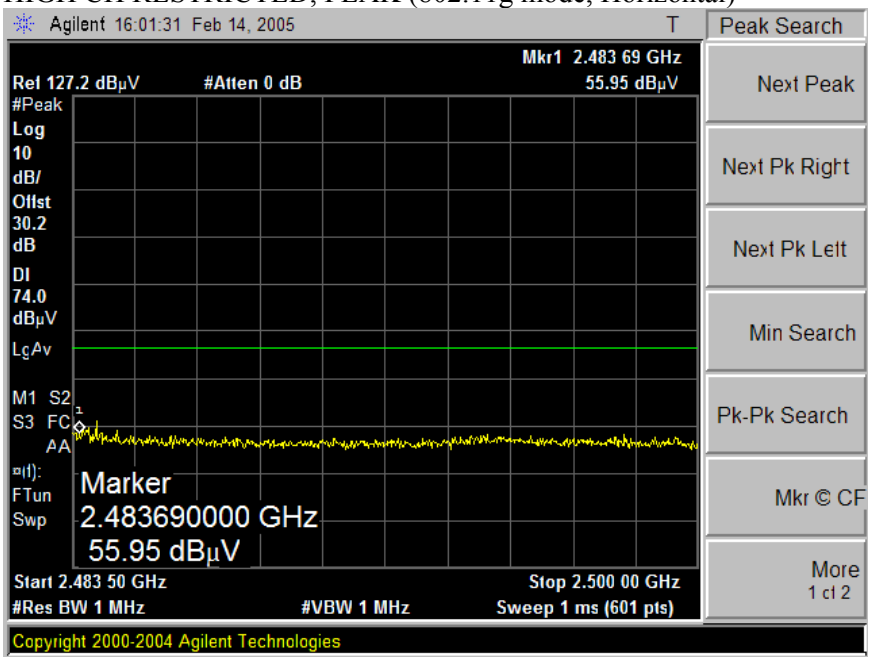


LOW CH RESTRICTED, AVG (802.11g mode, Vertical)

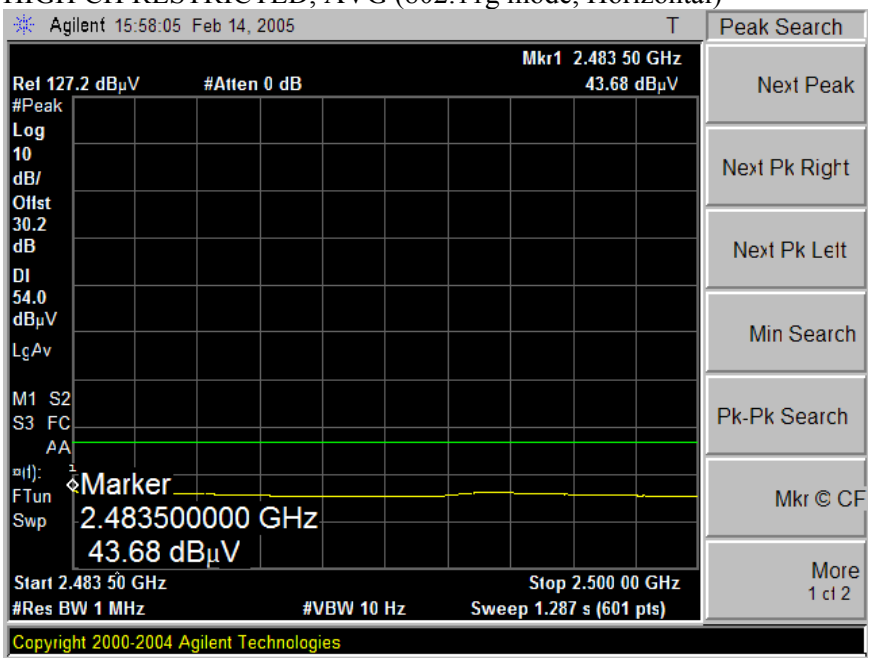


RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, HORIZONTAL)

HIGH CH RESTRICTED, PEAK (802.11g mode, Horizontal)

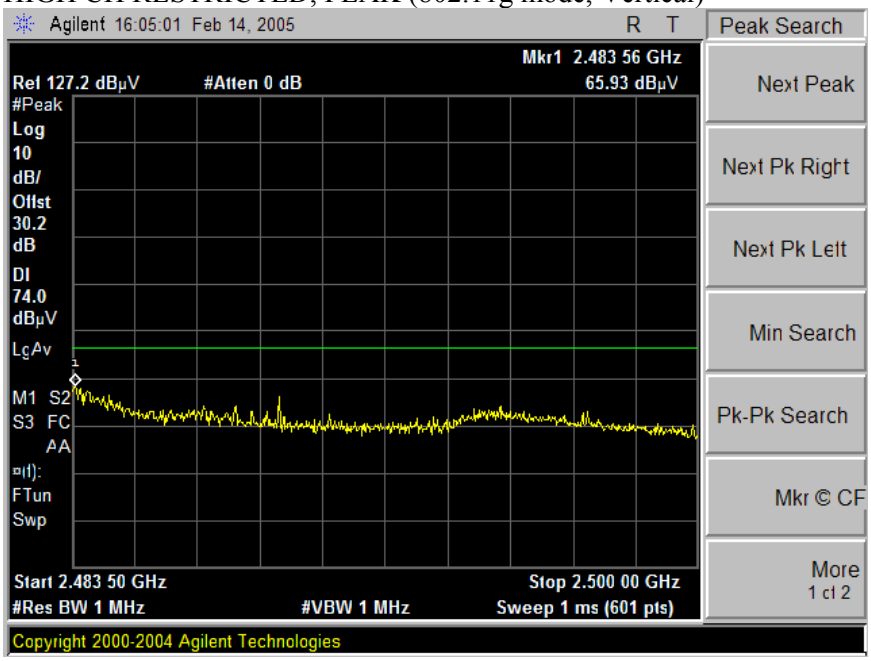


HIGH CH RESTRICTED, AVG (802.11g mode, Horizontal)

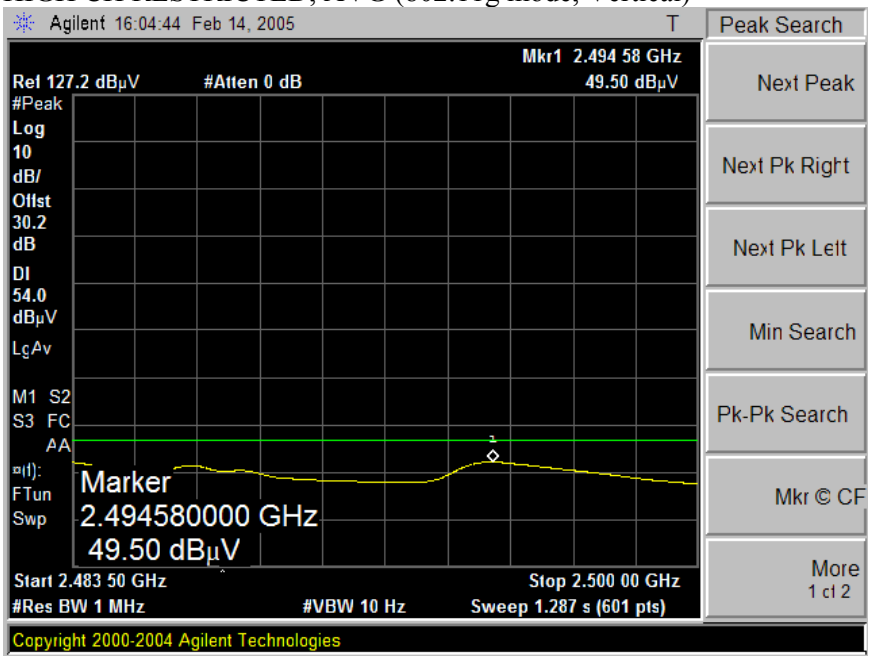


RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, VERTICAL)

HIGH CH RESTRICTED, PEAK (802.11g mode, Vertical)



HIGH CH RESTRICTED, AVG (802.11g mode, Vertical)



HARMONICS AND SPURIOUS EMISSIONS (g MODE)

02/14/05 **High Frequency Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: HITESH H. SOLANKI
Project #: 05I3251
Company: LG ELECTRONICS INC.
EUT Descrip.: TABLET PC with INTEL MINIPCI WIRELESS MODULE
EUT M/N: LT20(with INTEL MiniPCI MODEL : WM3B2915ABG
Test Target: FCC CLASS B
Mode Oper: TRANSMIT ON SPECIFIED CHANNELS; 802.11 g mode

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Pre-amplifer 1-26GHz: T86 Miteq 924341
Pre-amplifer 26-40GHz:
Horn > 18GHz:

Hi Frequency Cables: 2 foot cable; 3 foot cable; 4 foot cable: 4_Hitesh; 12 foot cable: 12_Hitesh

HPF: HPF_4.0GHz
Reject Filter: R_002

Peak Measurements
RBW=VBW=1MHz

Average Measurements
RBW=1MHz ; VBW=10Hz

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 CHANNEL 2412 MHz															
4.824	3.0	54.1	42.5	33.0	4.5	-44.0	0.0	0.6	48.1	36.5	74	54	-25.9	-17.5	V
7.236	3.0	51.6	38.9	35.8	6.2	-45.0	0.0	0.6	49.2	36.5	74	54	-24.8	-17.5	V
9.648	3.0	49.3	35.8	38.2	7.7	-43.4	0.0	0.8	52.5	39.0	74	54	-21.5	-15.0	V
MIDDLE CHANNEL 2437 MHz															
4.874	3.0	62.1	50.6	33.0	4.5	-44.1	0.0	0.6	56.1	44.6	74	54	-17.9	-9.4	V
7.311	3.0	50.8	38.7	35.9	6.2	-45.0	0.0	0.6	48.5	36.4	74	54	-25.5	-17.6	V
9.748	3.0	47.3	35.8	38.2	7.7	-43.4	0.0	0.8	50.7	39.2	74	54	-23.3	-14.8	V
HIGH CHANNEL 2462 MHz															
4.924	3.0	64.6	51.5	33.0	4.5	-44.2	0.0	0.6	58.6	45.5	74	54	-15.4	-8.5	V
7.386	3.0	52.9	39.4	36.0	6.3	-45.0	0.0	0.6	50.8	37.3	74	54	-23.2	-16.7	V
9.848	3.0	49.3	36.7	38.3	7.7	-43.3	0.0	0.8	52.9	40.3	74	54	-21.1	-13.7	V
LOW CHANNEL 2412 MHz															
4.824	3.0	59.5	46.2	33.0	4.5	-44.0	0.0	0.6	53.5	40.3	74	54	-20.5	-13.7	H
7.236	3.0	51.1	39.1	35.8	6.2	-45.0	0.0	0.6	48.7	36.7	74	54	-25.3	-17.3	H
9.648	3.0	47.5	35.9	38.2	7.7	-43.4	0.0	0.8	50.7	39.1	74	54	-23.3	-14.9	H
MIDDLE CHANNEL 2437 MHz															
4.874	3.0	63.7	51.6	33.0	4.5	-44.1	0.0	0.6	57.7	45.6	74	54	-16.3	-8.4	H
7.311	3.0	51.8	39.1	35.9	6.2	-45.0	0.0	0.6	49.5	36.8	74	54	-24.5	-17.2	H
9.748	3.0	47.8	35.9	38.2	7.7	-43.4	0.0	0.8	51.2	39.3	74	54	-22.8	-14.7	H
HIGH CHANNEL 2462 MHz															
4.924	3.0	64.0	51.1	33.0	4.5	-44.2	0.0	0.6	58.0	45.1	74	54	-16.0	-8.9	H
7.386	3.0	52.1	40.1	36.0	6.3	-45.0	0.0	0.6	50.0	38.0	74	54	-24.0	-16.0	H
9.848	3.0	50.9	37.0	38.3	7.7	-43.3	0.0	0.8	54.5	40.6	74	54	-19.5	-13.4	H

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		

No other Emissions were found up to the 10th harmonic of the fundamental frequency.

7.3.3. TRANSMITTER ABOVE 1 GHz FOR 5725 TO 5850 MHz BAND

HARMONICS AND SPURIOUS EMISSIONS (802.11a MODE)

02/22/05 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: HITESH H. SOLANKI
Project #: 05I3251
Company: LG ELECTRONICS INC.
EUT Descrip.: TABLET PC with INTEL MINIPCI WIRELESS MODULE
EUT M/N: LT20(with INTEL MiniPCI MODEL : WM3B2915ABG
Test Target: FCC CLASS B
Mode Oper: TRANSMIT ON SPECIFIED CHANNELS; 802.11 a mode 5.8 GHz BAND

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Pre-amplifer 1-26GHz: T86 Miteq 924341
Pre-amplifer 26-40GHz:
Horn > 18GHz:
Hi Frequency Cables: 2 foot cable; 3 foot cable; 4 foot cable: 4_Hitesh; 12 foot cable: 12_Hitesh
HPF: HPF_4.0GHz
Reject Filter: R_002

Peak Measurements
RBW=VBW=1MHz

Average Measurements
RBW=1MHz ; VBW=10Hz

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 CHANNEL 5745 MHz															
11.490	3.0	51.3	38.5	38.1	8.4	-43.7	0.0	0.9	55.0	42.2	74	54	-19.0	-11.8	V
17.235	3.0	52.9	40.0	43.1	12.4	-45.9	0.0	1.5	63.9	51.0	74	54	-10.1	-3.0	V
22.980	3.0	49.6	36.4	36.4	13.8	-43.2	0.0	0.0	56.6	43.4	74	54	-17.4	-10.6	V
MIDDLE CHANNEL 5785 MHz															
11.570	3.0	49.6	40.5	38.2	8.4	-43.7	0.0	0.9	53.3	44.2	74	54	-20.7	-9.8	V
17.355	3.0	52.8	40.0	43.4	12.5	-45.8	0.0	1.5	64.3	51.5	74	54	-9.7	-2.5	V
23.140	3.0	50.5	37.2	36.4	13.9	-43.2	0.0	0.0	57.6	44.3	74	54	-16.4	-9.7	V
HIGH CHANNEL 5825 MHz															
11.650	3.0	50.0	40.6	38.2	8.4	-43.7	0.0	0.9	53.8	44.4	74	54	-20.2	-9.6	V
17.475	3.0	53.2	40.1	43.7	12.6	-45.8	0.0	1.5	65.2	52.1	74	54	-8.8	-1.9	V
23.300	3.0	49.2	36.4	36.4	14.1	-43.2	0.0	0.0	56.4	43.6	74	54	-17.6	-10.4	V
LOW CHANNEL 5745 MHz															
11.490	3.0	49.9	35.5	38.1	8.4	-43.7	0.0	0.9	53.6	39.2	74	54	-20.4	-14.8	H
17.235	3.0	52.6	39.6	43.1	12.4	-45.9	0.0	1.5	63.6	50.6	74	54	-10.4	-3.4	H
22.980	3.0	49.5	36.1	36.4	13.8	-43.2	0.0	0.0	56.5	43.1	74	54	-17.5	-10.9	H
MIDDLE CHANNEL 5785 MHz															
11.570	3.0	49.1	36.1	38.2	8.4	-43.7	0.0	0.9	52.8	39.8	74	54	-21.2	-14.2	H
17.355	3.0	53.0	39.9	43.4	12.5	-45.8	0.0	1.5	64.5	51.4	74	54	-9.5	-2.6	H
23.140	3.0	50.4	37.1	36.4	13.9	-43.2	0.0	0.0	57.5	44.2	74	54	-16.5	-9.8	H
HIGH CHANNEL 5825 MHz															
11.650	3.0	49.3	35.8	38.2	8.4	-43.7	0.0	0.9	53.1	39.6	74	54	-20.9	-14.4	H
17.475	3.0	53.1	40.0	43.7	12.6	-45.8	0.0	1.5	65.1	52.0	74	54	-8.9	-2.0	H
23.300	3.0	49.5	36.4	36.4	14.1	-43.2	0.0	0.0	56.7	43.6	74	54	-17.3	-10.4	H

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		

No other Emissions were found up to the 10th harmonic of the fundamental frequency.

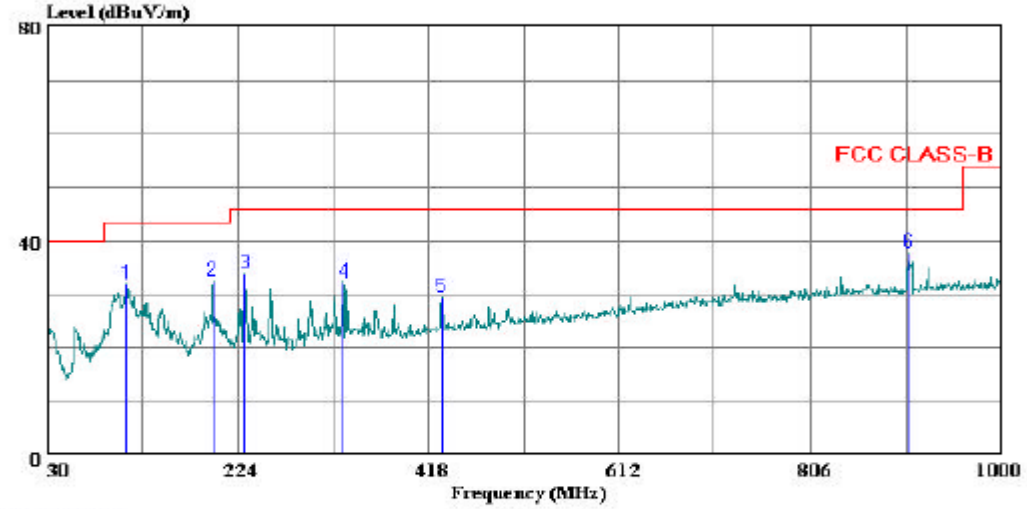
7.3.4. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz DTS BAND

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#: 21 File#: 05i3251.EMI Date: 02-14-2005 Time: 19:22:53



(Audix ATC)
Trace: 20 Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator: : HITESH H.SOLANKI
Project #: : 05I3251
Company: : LG ELECTRONICS INC.,
EUT: : TABLET w/ INTELL MiniPCI WIRELESS MODULE
Model No: : LT20 (MiniPCI M/N : WM3B2915ABG)
Configuration: : EUT ONLY
Target of Test: : FCC CLASS B
Mode of Operation: TRANSMIT (WORST CASE) 802.11 b mode

HORIZONTAL DATA

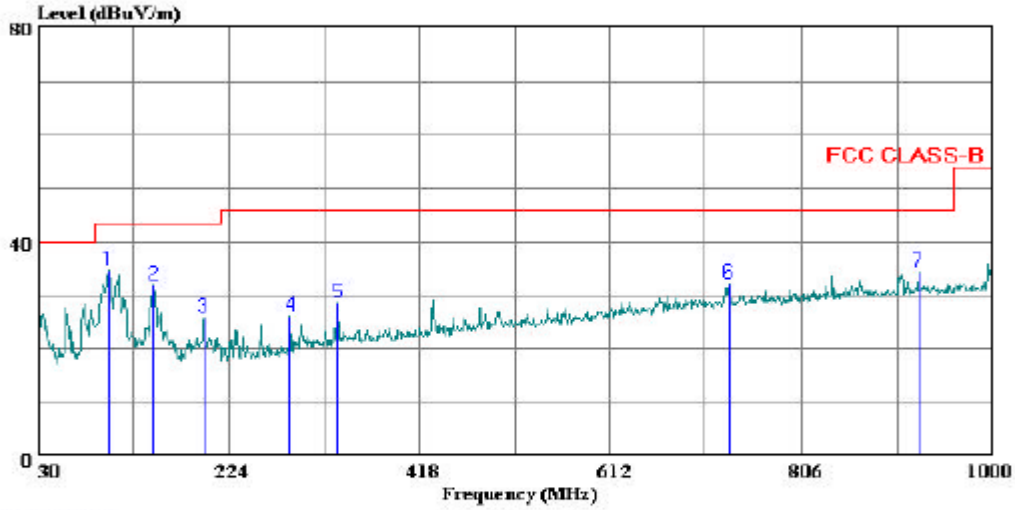
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	110.510	46.10	-14.14	31.96	43.50	-11.54	Peak
2	198.780	45.70	-13.27	32.43	43.50	-11.07	Peak
3	231.760	48.20	-14.49	33.71	46.00	-12.29	Peak
4	331.670	43.10	-11.03	32.07	46.00	-13.93	Peak
5	431.580	38.00	-8.74	29.26	46.00	-16.74	Peak
6	904.940	38.70	-0.95	37.75	46.00	-8.25	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#: 19 File#: 05i3251.EMI Date: 02-14-2005 Time: 19:16:38



(Audix ATC)

Trace: 18 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : HITESH H.SOLANKI
Project #: : 05I3251
Company: : LG ELECTRONICS INC.,
EUT: : TABLET w/ INTELL MiniPCI WIRELESS MODULE
Model No: : LT20 (MiniPCI M/N : WM3B2915ABG)
Configuration: : EUT ONLY
Target of Test: : FCC CLASS B
Mode of Operation: TRANSMIT (WORST CASE) 802.11 b mode

VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	101.780	50.80	-16.05	34.75	43.50	-8.75	Peak
2	147.370	45.13	-13.38	31.75	43.50	-11.76	Peak
3	198.780	39.10	-13.27	25.83	43.50	-17.67	Peak
4	287.050	38.40	-12.37	26.04	46.00	-19.97	Peak
5	335.550	39.50	-10.93	28.57	46.00	-17.43	Peak
6	733.250	34.70	-2.62	32.08	46.00	-13.92	Peak
7	924.340	35.00	-0.71	34.29	46.00	-11.71	Peak

7.4. 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 µH/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:

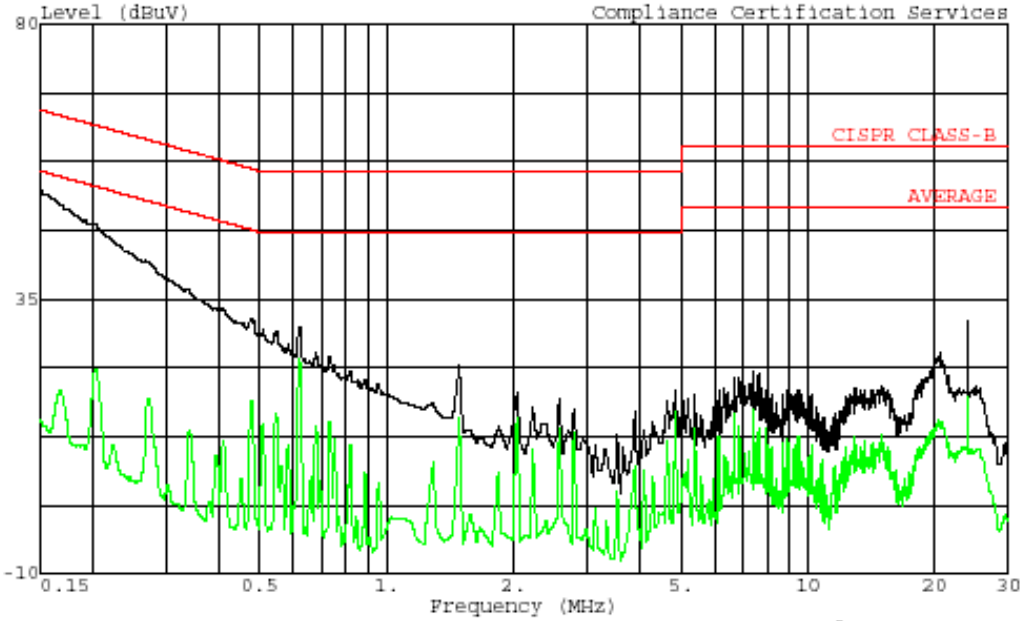
6 WORST EMISSIONS (DTS 2.4GHz / 5.8GHz BAND)

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.15	53.50	--	--	0.00	66.00	56.00	-12.50	-2.50	L1
0.62	30.56	--	--	0.00	56.00	46.00	-25.44	-15.44	L1
24.01	31.42	--	--	0.00	60.00	50.00	-28.58	-18.58	L1
0.15	53.09	--	--	0.00	65.94	55.94	-12.85	-2.85	L2
0.62	31.58	--	--	0.00	56.00	46.00	-24.42	-14.42	L2
24.01	31.20	--	--	0.00	60.00	50.00	-28.80	-18.80	L2
6 Worst Data									

LINE 1 RESULTS

COMPLIANCE Engineering Services, Inc.
561F Monterey Road
Morgan Hill, CA 95037 USA
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 14 File#: 3251LC.EMI Date: 02-15-2005 Time: 09:48:42



Trace: 12 Ref Trace:
Project No. : 05I3251
Test Engr : HITESH H. SOLANKI
Company : LG ELECTRONICS INC.,
EUT : TABLET PC WITH INTEL WIRELESS MODULE
Model No. : LT20 (INTEL MiniPCI M/N: WM3B2915ABG)
Test Config.: EUT ONLY
Type of Test: FCC Part 15.247
Mode of Op. : TRANSMIT ONLY (WORST CASE)
AC Mains : 115 VAC, 60 Hz
: L1: Peak(Black); Average (Green)

LINE 2 RESULTS