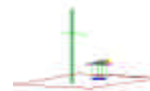


PCTEST ENGINEERING LABORATORY, INC.

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CERTIFICATE OF COMPLIANCE

MANUFACTURER NAME & ADDRESS:

Lenovo (United States) Incorporated

New Orchard Rd,
Armonk, NY 10504

DATE & LOCATION OF TESTING:

Date(s) of Tests: May 25, 2006

Test Report S/N: 0605260412-R2

Test Site: PCTEST Lab, Columbia, MD

FCC ID:

S2L20030500CMR

IC CERTIFICATION NUMBER:

5903D-T60H786U

APPLICANT NAME:

Lenovo (United States) Incorporated

SUMMARY:

Model No.:

T60H786-U

Equipment EUT Type:

Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter

Max. Output Power:

0.0526 W Conducted

Frequency Range:

2412 - 2462 MHz (DSSS/OFDM)

FCC Classification:

Digital Transmission System (DTS)

IC Classification:

Low Power Exempt Radiocommunication Device

FCC Rule Part(s):

Parts 15.247

IC Rule Part(s):

RSS-210 – Issue 6

Test Device Serial No.:

S/N: AA-GGFV8

Original Grant Date:

March 24, 2004

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C-63.4-2003.

I authorize and attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

* NOTE: This revised Test Report (S/N: 0605260412-R2) supercedes and replaces the previously issued test report on the same subject EUT for the same type of testing as indicated. Please discard or destroy the previously issued report (S/N: 0605260412) and dispose of it accordingly.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.


Randy Ortance
President





PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 1 of 10

EXHIBIT A – Test Results (Cont.)

Radiated Measurements

§15.247(b) / §15.205 & §15.209

Transfer Rate: 1 Mbps

Distance of Measurements: 3 Meters

Channel: 01

Frequency (MHz)	Level (dBm)	AFCL (dB)	POL	F/S (dBuV/m)	F/S (uV/m)	Margin (dB)
4824	-97.2	40.6	V	50.40	331.13	-3.60
4236	-110.7	45.8	V	42.10	127.35	-11.90
9648	-135.0	49.6	V	21.60	12.02	-32.40
12060	-135.0	52.1	V	24.1	16.03	-29.9

Table A-1. Peak Radiated Measurements @ 3 meters

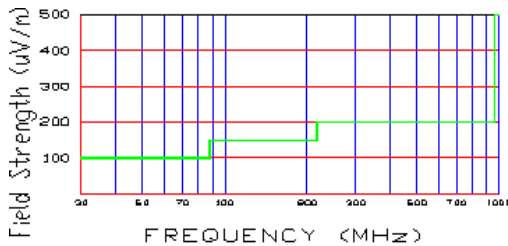


Figure A-1. Radiated limits at 3 meters.

NOTES:

1. All harmonics in the restricted bands specified in §15.205 are below the limit shown in Table A-19. (Note: * = Restricted Band measured frequency)
2. All harmonics/spurs are at least 20 dB below the highest emission in the authorized band using RBW = 100kHz
3. Average Measurements > 1GHz using RBW = 1 MHz VBW = 10 Hz
4. The peak emissions above 1 GHz are not more than 20 dB above the average limit.
5. The antenna is manipulated through typical positions, polarity and length during the tests.
6. The EUT is supplied with nominal AC voltage or/and a new/fully-recharged battery.
7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
8. < - 135 dBm are below the analyzer floor level.
9. Above 1 GHz, the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.



PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 2 of 10

EXHIBIT A – Test Results (Cont.)

Radiated Measurements (Cont.)

§15.247(b) / §15.205 & §15.209

Transfer Rate: 1 Mbps

Distance of Measurements: 3 Meters

Channel: 06

Frequency (MHz)	Level (dBm)	AFCL (dB)	POL (H/V)	F/S (dBuV/m)	F/S (uV/m)	Margin (dB)
4874	-98.1	40.5	V	49.40	295.12	-4.6
7311	-110.9	47.3	V	43.40	147.91	-10.6
9748	-135.0	50.05	V	22.05	12.66	-32.0
12185	-135.0	52.5	V	24.50	16.79	-29.5

Table A-2. Peak Radiated Measurements @ 3 meters

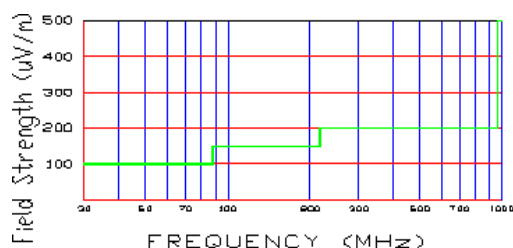


Figure A-2. Radiated limits at 3 meters.

NOTES:

1. All harmonics in the restricted bands specified in §15.205 are below the limit shown in Table A-19. (Note: * = Restricted Band measured frequency)
2. All harmonics/spurs are at least 20 dB below the highest emission in the authorized band using RBW = 100kHz
3. Average Measurements > 1GHz using RBW = 1 MHz VBW = 10 Hz
4. The peak emissions above 1 GHz are not more than 20 dB above the average limit.
5. The antenna is manipulated through typical positions, polarity and length during the tests.
6. The EUT is supplied with nominal AC voltage or/and a new/fully-recharged battery.
7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
8. < - 135 dBm are below the analyzer floor level.
9. Above 1 GHz, the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.



PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 3 of 10

EXHIBIT A – Test Results (Cont.)

Radiated Measurements (Cont.)

§15.247(b) / §15.205 & §15.209

Transfer Rate:	<u>1 Mbps</u>
Distance of Measurements:	<u>3 Meters</u>
Channel:	<u>11</u>

Frequency (MHz)	Level (dBm)	AFCL (dB)	POL (H/V)	F/S (dBuV/m)	F/S (uV/m)	Margin (dB)
4924	-98.7	40.95	V	49.25	290.07	-4.75
7386	-110.7	46.25	V	42.55	134.12	-11.45
9848	-135.0	49.9	V	21.9	12.45	-32.1
12310	-135.0	52.1	V	24.1	16.03	-28.2

Table A-3. Peak Radiated Measurements @ 3 meters

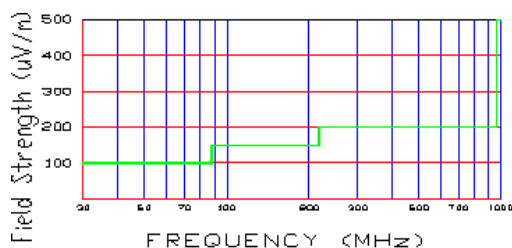


Figure A-3. Radiated limits at 3 meters.

NOTES:

1. All harmonics in the restricted bands specified in §15.205 are below the limit shown in Table A-19. (Note: * = Restricted Band measured frequency)
2. All harmonics/spurs are at least 20 dB below the highest emission in the authorized band using RBW = 100kHz
3. Average Measurements > 1GHz using RBW = 1 MHz VBW = 10 Hz
4. The peak emissions above 1 GHz are not more than 20 dB above the average limit.
5. The antenna is manipulated through typical positions, polarity and length during the tests.
6. The EUT is supplied with nominal AC voltage or/and a new/fully-recharged battery.
7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported.
8. < - 135 dBm are below the analyzer floor level.
9. Above 1 GHz, the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated.



PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 4 of 10

EXHIBIT A – Test Results (Cont.)

Radiated Restricted Band Measurements

§15.205 / §15.209

Special attention is made for the EUT's harmonic and spurious radiated emission in the restricted bands of operations. The EUT was tested from 9kHz and up to the tenth harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average measurement was used, using RBW 1MHz – VBW 10Hz and linearly polarized horn antennas. All harmonics/spurs are at least 20dB below the highest emission in the authorized band using RBW = 100kHz. In addition, peak measurements were taken to ensure that the peak levels are not more than 20dB above the average limit. All out of band emissions, other than those created by the spreading sequence, data sequence, and the carrier modulation must not exceed the limits show in Table G-1 per Section 15.247.

Frequency	F/S (mV/m)	Measured Distance (Meters)
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table A-4. Restricted Band Limits

TEST MEASUREMENT EQUIPMENT

Agilent E4448A	PSA Spectrum Analyzer 3 Hz - 50GHz
HP 8566B	Spectrum Analyzer 100Hz – 22GHz
HP 83017A	Microwave Analyzer 40dB Gain (0.5 – 26.5GHz)
HP 3784A	Digital Transmission Analyzer
EMCO 3115	Horn Antenna (1 – 18GHz)
HP 8495A	20dB Attenuator (DC-40GHz) 0 – 70dB
HP 8493B	10dB Attenuator
MicroCoax Cables	Low Loss Microwave Cables (1 – 26.5GHz)
CDI Dipoles	Dipole Antennas (30 – 1000MHz)
EMCO 3116	Horn Antenna (18 – 40GHz)



PCTEST LAB TEST REPORT 15.247	 Supplemental WLAN Data 			Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 5 of 10

EXHIBIT A – Test Results (Cont.)

Radiated Restricted Band Measurements (Cont.)

§15.205 /§15.209 courtesy

Operating Frequency: 2462 MHz

Distance of Measurements: 3 Meters

Data Rate: 6 Mbps

FREQ (MHz)	Level (dBm)	AFCL (dB/m)	POL (H/V)	F/S (dBμV/m)	F/S (uV/M)	Margin (dB)
2484.7	-113.75	31.8	V	25.05	17.89	-28.9
2486.3	-112.37	31.8	H	26.43	20.97	-27.6
2489.2	-115.24	31.8	V	23.56	15.07	-30.4
2490.2	-114.82	31.8	V	23.98	15.81	-30.0
2495.6	-114.2	31.8	V	24.6	16.98	-29.4
2497.8	-115.16	31.8	V	23.64	15.21	-30.3

Table A-5. Radiated Restricted Band Measurements at 3-meters

NOTES:

1. The antenna is manipulated through typical positions, polarity and length during the testing.
2. The EUT is supplied with the minimal AC voltage or/and a new/fully re-charged battery.
3. The spectrum is measured from 9kHz up to the 10th harmonic and the worst-case emissions are reported.
4. The conducted limits are shown on Figure A-14. Above 1 GHz the limit is 500μV/m.
5. < -135 dBm is below the analyzer measurement floor level.
6. The data in the table are Average Measurements > 1GHz using RBW = 1 MHz VBW = 10 Hz
7. The peak emissions above 1 GHz are not more than 20 dB above the average limit.



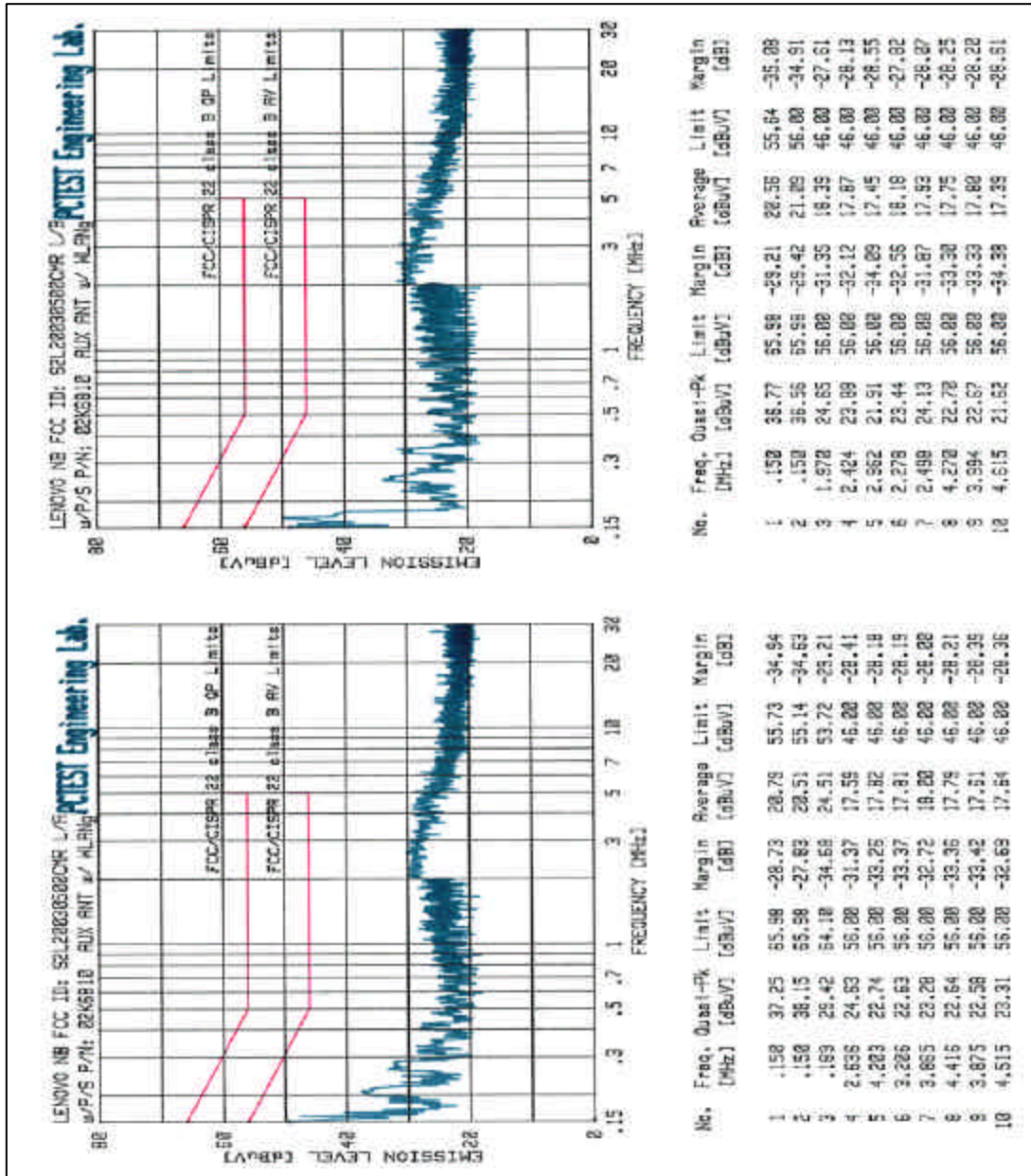
PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 6 of 10

EXHIBIT A – Test Results (Cont.)

Line-Conducted Test Data

§15.207



Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported.
2. The limit for Class B device(s) from 150kHz to 30MHz are Specified in EN55022.
3. Line A = Phase; Line B = Neutral
4. Deviations to the Specifications: *None*.



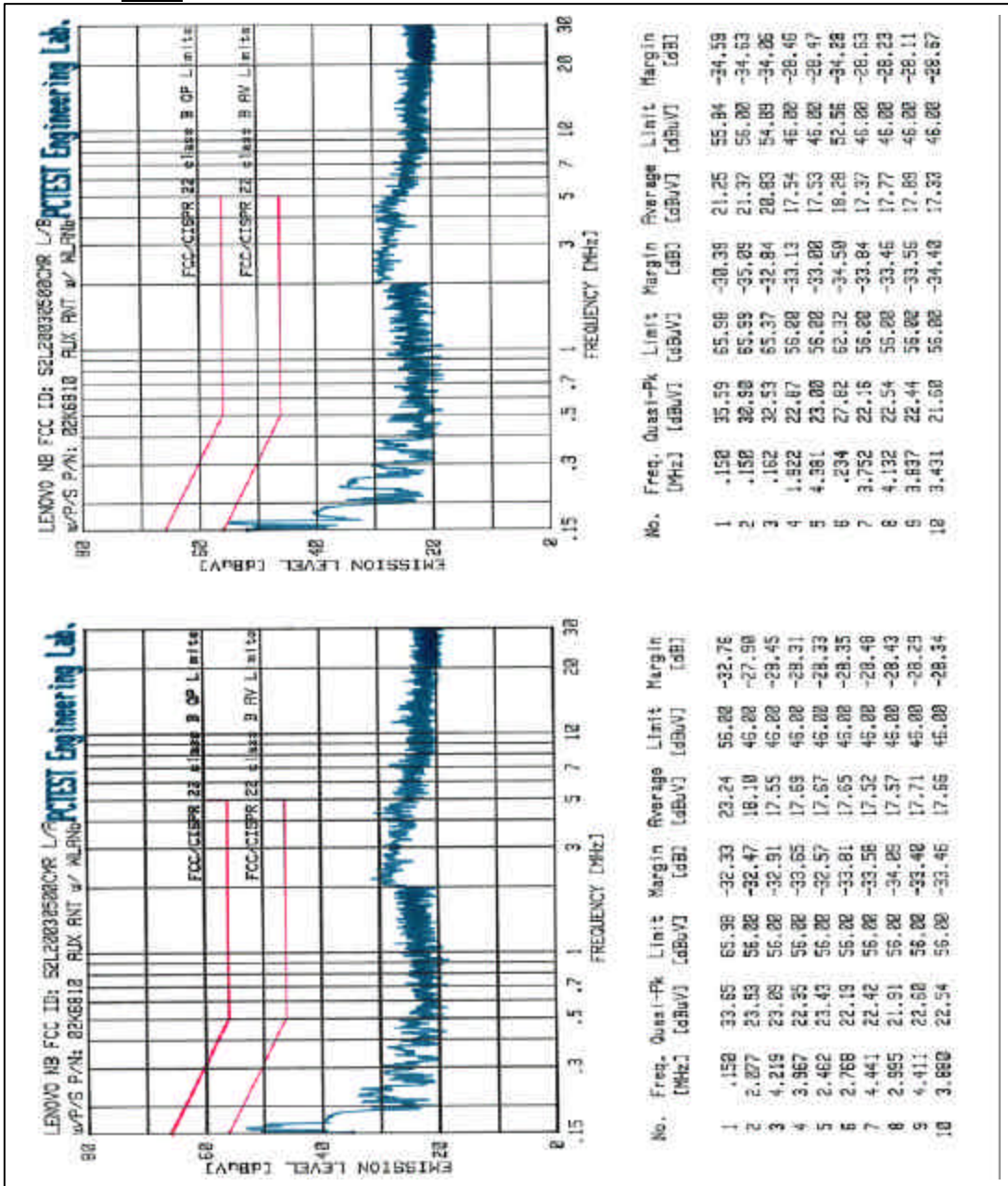
PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data 	Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR Page 7 of 10

EXHIBIT A – Test Results (Cont.)

Line-Conducted Test Data

\$15.207



Notes:

5. All Modes of operation were investigated and the worst-case emissions are reported.
6. The limit for Class B device(s) from 150kHz to 30MHz are Specified in EN55022.
7. Line A = Phase; Line B = Neutral
8. Deviations to the Specifications: *None*.



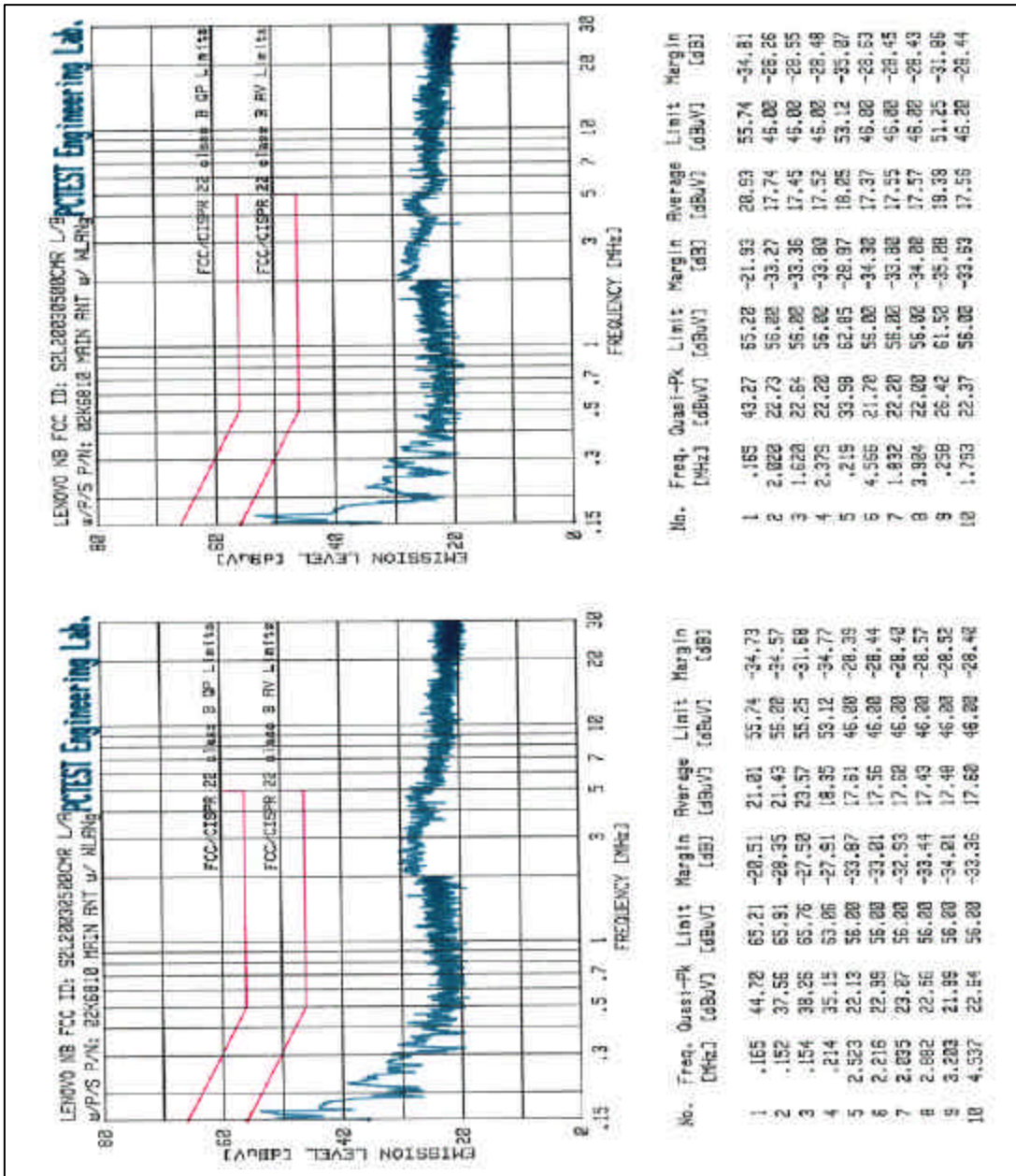
PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 8 of 10

EXHIBIT A – Test Results (Cont.)

Line-Conducted Test Data

\$15.207



Notes:

- All Modes of operation were investigated and the worst-case emissions are reported.
- The limit for Class B device(s) from 150kHz to 30MHz are Specified in EN55022.
- Line A = Phase; Line B = Neutral
- Deviations to the Specifications: *None*.



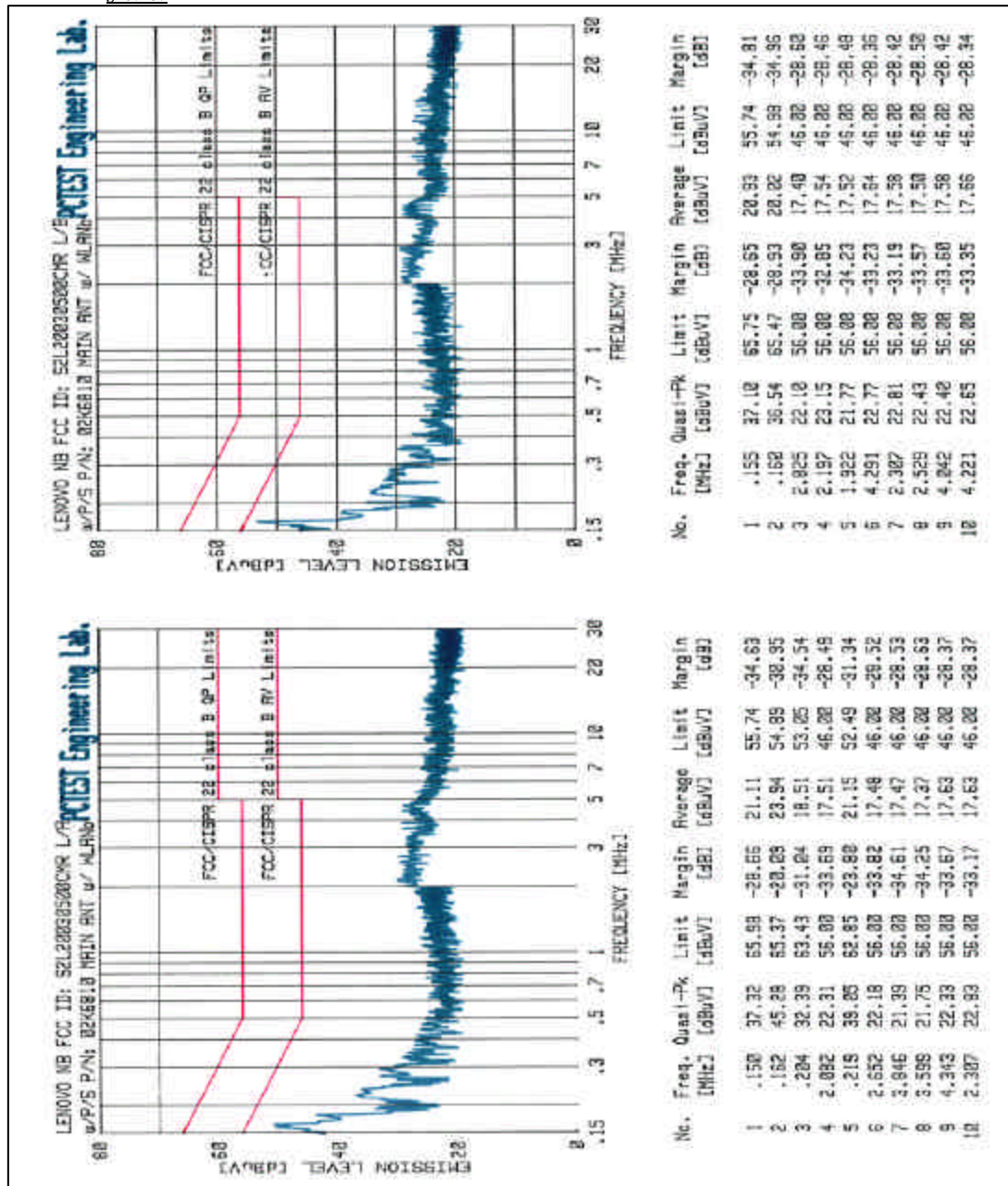
PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
Filename: 0605260412-R2	Test Dates: May 25, 2006	EUT Type: Lenovo Laptop PC ThinkPad X30 Series Model: T60H786-U with 802.11b/g WLAN Adapter	FCC ID: S2L20030500CMR	Page 9 of 10

EXHIBIT A – Test Results (Cont.)



Line-Conducted Test Data

\$15.207



Notes:

- All Modes of operation were investigated and the worst-case emissions are reported.
- The limit for Class B device(s) from 150kHz to 30MHz are Specified in EN55022.
- Line A = Phase; Line B = Neutral
- Deviations to the Specifications: *None*.

PCTEST LAB TEST REPORT 15.247		Supplemental WLAN Data		Reviewed by: Quality Manager
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