STC Test Report

Date : 2009-10-15
No. : MH183396

Applicant (STD003): TEAC Corporation
1-47 Ochiai, Tama-shi, Tokyo 206-8530, Japan

Manufacturer: Dongguan Zhi Cheng Electronic Products Co. Ltd.
Ping San 188 Industrial Zone Dongguanshi, Tangxia, China

Description of Sample(s):

Product:	FM INTERNET Radio with Docking for iPod
Brand Name:	TEAC
Model Number:	R-4iNT
FCC ID:	XEGR-4INT

Date Samples Received: 2009-09-07

Date Tested: 2009-09-16 to 2009-09-23

Investigation Requested: Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2008 and ANSI C63.4:2003 for FCC Certification.

Conclusions: The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

Remarks: ---

For Dr. LEE Kam Chuen,
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

The Hong Kong Standards and Testing Centre Ltd.
10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong
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CONTENT:

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1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.
EMC Laboratory
10 Dai Wang Street, Taipo Industrial Estate
New Territories, Hong Kong

1.2 Applicant Details

Applicant

TEAC Corporation
1-47 Ochiai, Tama-shi, Tokyo 206-8530, Japan

Manufacturer

Dongguan Zhi Cheng Electronic Products Co. Ltd.
Ping San 188 Industrial Zone Dongguanshi, Tangxia, China

1.3 Equipment Under Test [EUT]

Description of Sample

Product:	FM INTERNET Radio with Docking for iPod
Manufacturer:	Dongguan Zhi Cheng Electronic Products Co. Ltd.
Brand Name:	TEAC
Model Number:	R-4iNT
Input Voltage:	The AC/DC Adaptor used for the tests was provided by the applicant with the following details: Two pins (Live / Neutral) only adaptor, Model Number: PS-M1220, Input: 100-240Va.c. 50-60Hz 0.55A, Output: 12Vd.c. 2A

1.3.1 Description of EUT Operation

The Equipment Under Test (EUT) is a TEAC Corporation., 2 FM INTERNET Radio with Docking for iPod, the transmission signal is digital modulated with channel frequency range 2412-2462MHz. The measurement were conducted at different modulation and data rate, the test results shown in this test report is based on the worst case.of the initial investigation.

1.4 Date of Order

2009-09-07

1.5 Submitted Sample(s):

1 Sample

1.6 Test Duration

2009-09-11 to 2009-09-23

1.7 Country of Origin

China

2.0 Technical Details

2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2008 Regulations and ANSI C63.4:2003 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION
Results Summary

Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Fail	N/A
Output Power of Fundamental Emissions	FCC 47CFR 15.247(b)(3)	ANSI C63.4:2003	N/A	☒	☐	☐
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.4:2003	N/A	☒	☐	☐
Conducted Emissions	FCC 47CFR 15.207	N/A	N/A	☒	☐	☐
Power Spectral Density	FCC 47CFR 15.247(e)	N/A	N/A	☒	☐	☐
Bandwidth	FCC 47CFR 15.247(a)(2)	N/A	N/A	☒	☐	☐
Antenna requirement	FCC 47CFR 15.203	N/A	N/A	☒	☐	☐

Note: N/A - Not Applicable

3.0 Test Results

3.1 Emission

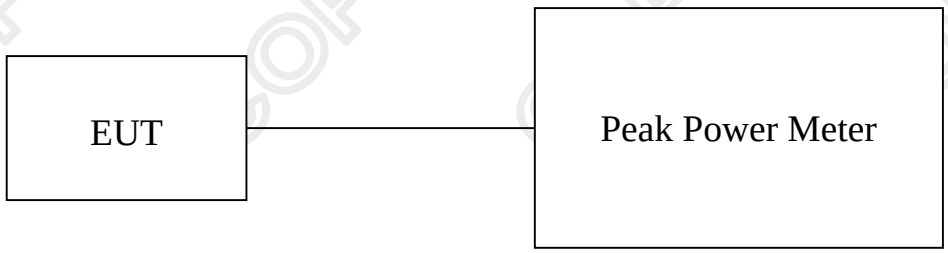
3.1.1 Maximum Peak Output Power

Test Requirement:	FCC 47CFR 15.247(b)(3)
Test Method:	N/A
Test Date:	2009-09-23
Mode of Operation:	Tx mode

Test Method:

The RF output of the EUT was connected to the peak power meter. All the attenuation or cable loss will be added to the measured maximum output power. The results are recorded in mW.

Test Setup:



Limits for Peak Output Power of Fundamental & Harmonics Emissions [FCC 47CFR 15.247]:

For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt (30dBm)

Results of Tx Mode 802.11 b 11Mbit (2412MHz to 2462MHz) : Pass (TX Unit)
Maximum conducted output power

Channel	Frequency(MHz)	Output Power
Low	2412	3.24dBm
Middle	2437	0.37dBm
High	2462	-1.57dBm

Results of Tx Mode 802.11 g 54Mbit (2412MHz to 2462MHz) : Pass (TX Unit)
Maximum conducted output power

Channel	Frequency(MHz)	Output Power
Low	2412	6.96dBm
Middle	2437	4.54dBm
High	2462	2.67dBm

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

3.1.2 Radiated Emissions

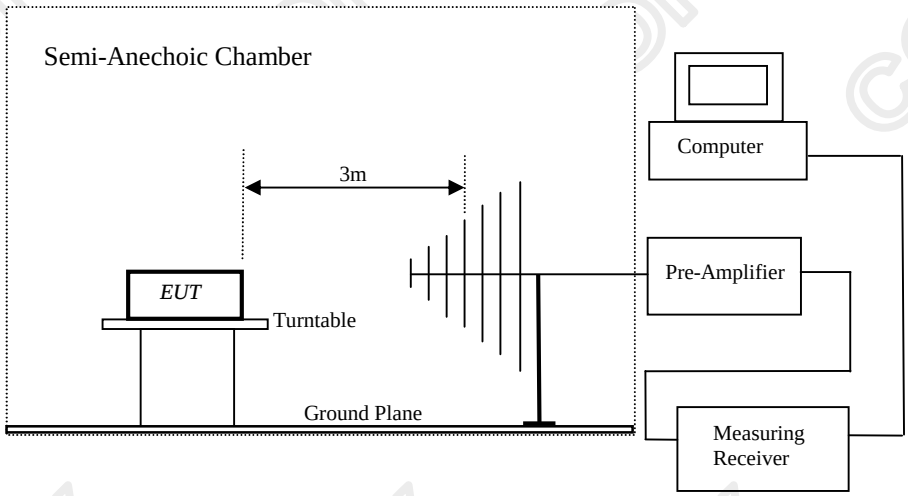
Test Requirement:	FCC 47CFR 15.209
Test Method:	ANSI C63.4:2003
Test Date:	2009-09-23
Mode of Operation:	Tx mode, FM mode, Internet Radio mode, iPod mode, Aux-in mode and Clock mode

Test Method:

The sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

* Semi-anechoic chamber located on the G/F of "The Hong Kong Standards and Testing Centre Ltd." with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Test Setup:



Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode 802.11 b 11Mbit (CH 1) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

The limit for transmitter spurious emission is 20dB below the fundamental.
Radio Frequency Power of fundamental = 96.6 dBμV/m. Limit for spurious emission = 76.6 dBμV/m.

Result of Tx Mode 802.11 b 11Mbit (CH 1): Pass

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2563.1	7.0	37.4	44.4	76.6	-32.2	Horizontal
4816.2	12.4	41.9	54.3	74.0	-19.7	Horizontal

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2563.1	1.1	37.4	38.5	56.6	-18.1	Horizontal
4816.2	4.8	41.9	46.7	54.0	-7.3	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode 802.11 b 11Mbit (CH 6) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

The limit for transmitter spurious emission is 20dB below the fundamental.
Radio Frequency Power of fundamental = 97.7 dBμV/m. Limit for spurious emission = 77.7 dBμV/m.

Result of Tx Mode 802.11 b 11Mbit (CH 6): Pass

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2349.9	11.3	36.5	47.8	74.0	-26.2	Horizontal
4723.1	17.7	41.8	59.5	74.0	-14.5	Horizontal

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2349.9	3.2	36.5	39.7	54.0	-14.3	Horizontal
4723.1	8.4	41.8	50.2	54.0	-3.8	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode 802.11 b 11Mbit (CH 11) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

The limit for transmitter spurious emission is 20dB below the fundamental.
Radio Frequency Power of fundamental = 96.6 dBμV/m. Limit for spurious emission = 76.6 dBμV/m.

Result of Tx Mode 802.11 b 11Mbit (CH 11): Pass

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2334.4	12.4	36.4	48.8	74.0	-25.2	Horizontal
4917.8	18.1	41.9	60.0	74.0	-14.0	Horizontal

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2334.4	3.1	36.4	39.5	54.0	-14.5	Horizontal
4917.8	8.2	41.9	50.1	54.0	-3.9	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode 802.11 g 54Mbit (CH 1) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

The limit for transmitter spurious emission is 20dB below the fundamental.
Radio Frequency Power of fundamental = 96.2 dBμV/m. Limit for spurious emission = 76.2 dBμV/m.

Result of Tx Mode 802.11 g 54Mbit (CH 1): Pass

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2563.1	11.2	37.4	48.6	76.2	-27.6	Horizontal
4816.2	15.3	41.9	57.2	74.0	-16.8	Horizontal
7235.4	6.1	47.8	53.9	76.2	-22.3	Horizontal

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2563.1	3.5	37.4	40.9	56.2	-15.3	Horizontal
4816.2	6.1	41.9	48.0	54.0	-6.0	Horizontal
7235.4	1.6	47.8	49.4	56.2	-6.8	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode 802.11 g 54Mbit (CH 6) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

The limit for transmitter spurious emission is 20dB below the fundamental.
Radio Frequency Power of fundamental = 96.6 dBμV/m. Limit for spurious emission = 76.6 dBμV/m.

Result of Tx Mode 802.11 g 54Mbit (CH 6): Pass

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2349.9	11.3	36.5	47.8	74.0	-26.2	Horizontal
4723.1	17.7	41.8	59.5	74.0	-14.5	Horizontal
7309.8	11.6	48.0	59.6	74.0	-14.4	Horizontal

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2349.9	2.9	36.5	39.4	54.0	-14.6	Horizontal
4723.1	9.5	41.8	51.3	54.0	-2.7	Horizontal
7309.8	3.1	48.0	51.1	54.0	-2.9	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode 802.11 g 54Mbit (CH 11) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

The limit for transmitter spurious emission is 20dB below the fundamental.
Radio Frequency Power of fundamental = 98.0 dBμV/m. Limit for spurious emission = 78.0 dBμV/m.

Result of Tx Mode 802.11 g 54Mbit (CH 11): Pass

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2334.4	12.3	36.4	48.7	74.0	-25.3	Horizontal
4917.8	18.8	41.9	60.7	74.0	-13.3	Horizontal

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
2334.4	3.7	36.4	40.1	54.0	-13.9	Horizontal
4917.8	8.5	41.9	50.4	54.0	-3.6	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s)

Result of Tx Mode: Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
30.0	9.2	16.9	26.1	40.0	-13.9	Vertical
110.6	27.3	8.8	36.1	43.5	-7.4	Vertical
325.0	9.6	16.8	26.4	46.0	-19.6	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC R ules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Clock Mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s)

Result of Clock Mode: Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
130.0	13.9	7.5	21.4	43.5	-22.1	Vertical
180.0	7.4	11.1	18.5	43.5	-25.0	Horizontal
221.4	9.6	11.7	21.3	46.0	-24.7	Horizontal
435.2	7.8	18.6	26.4	46.0	-19.6	Vertical
512.6	10.9	21.1	32.0	46.0	-14.0	Vertical
574.5	10.1	21.5	31.6	46.0	-14.4	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Internet Radio Mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s)

Result of Internet Radio Mode: Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
72.0	18.5	7.5	26.0	40.0	-14.0	Vertical
117.8	20.5	11.1	31.6	43.5	-11.9	Horizontal
200.0	26.9	11.7	38.6	43.5	-4.9	Vertical
435.6	8.1	18.6	26.7	46.0	-19.3	Vertical
574.5	9.8	21.1	30.9	46.0	-15.1	Horizontal
706.6	13.3	21.5	34.8	46.0	-11.2	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Aux-in Mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s)

Result of Aux-in Mode: Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
30.0	8.4	16.9	25.3	40.0	-14.7	Vertical
70.1	8.3	8.3	16.6	40.0	-23.4	Vertical
110.9	29.2	8.8	38.0	43.5	-5.5	Vertical
213.7	12.0	12.2	24.2	43.5	-19.3	Horizontal
250.1	9.3	13.8	23.1	46.0	-22.9	Horizontal
325.0	9.6	16.8	26.4	46.0	-19.6	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of iPod Mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the limit line(s)

Result of iPod Mode: Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
30.0	8.1	16.9	25.0	40.0	-15.0	Vertical
70.0	8.6	8.3	16.9	40.0	-23.1	Vertical
127.0	22.3	7.6	29.9	43.5	-13.6	Vertical
207.4	16.0	11.9	27.9	43.5	-15.6	Horizontal
250.1	9.2	13.8	23.0	46.0	-23.0	Horizontal
324.8	9.1	16.8	25.9	46.0	-20.1	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of FM Mode (Tuning Frequency=88.0MHz) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Result of FM Mode (Tuning Frequency = 88.0MHz): Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
30.0	7.9	16.9	24.8	40.0	-15.2	Vertical
69.9	8.6	8.3	16.9	40.0	-23.1	Vertical
123.6	23.8	7.7	31.5	43.5	-12.0	Vertical
211.8	14.7	12.1	26.8	43.5	-16.7	Horizontal
251.0	9.1	13.8	22.9	46.0	-23.1	Horizontal
325.1	8.9	16.8	25.7	46.0	-20.3	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of FM Mode (Tuning Frequency = 98.0MHz) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Result of FM Mode (Tuning Frequency = 98.0MHz): Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
30.0	7.8	16.9	24.7	40.0	-15.3	Vertical
69.9	8.6	8.3	16.9	40.0	-23.1	Vertical
122.6	24.4	7.7	32.1	43.5	-11.4	Vertical
211.8	14.7	12.1	26.8	43.5	-16.7	Horizontal
251.1	9.2	13.8	23.0	46.0	-23.0	Horizontal
324.7	8.6	16.8	25.4	46.0	-20.6	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of FM Mode (Tuning Frequency = 108.0MHz) (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Result of FM Mode (Tuning Frequency = 108.0MHz): Pass

Field Strength of Fundamental Emissions Quasi-Peak Value						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
30.0	7.6	16.9	24.5	40.0	-15.5	Vertical
70.0	8.4	8.3	16.7	40.0	-23.3	Vertical
122.8	24.1	7.7	31.8	43.5	-11.7	Vertical
212.0	14.2	12.1	26.3	43.5	-17.2	Horizontal
250.1	9.6	13.8	23.4	46.0	-22.6	Horizontal
324.9	9.2	16.8	26.0	46.0	-20.0	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 25GHz 5.1dB

3.1.3 Power Spectral Density

Test Requirement: FCC 47CFR 15.247(e)
Test Method: ANSI C63.4:2003
Test Date: 2009-09-25
Mode of Operation: Tx Mode

Test Method:

The RF output of the EUT was connected to the spectrum analyzer. Set the fundamental frequency as the center frequency of the spectral analyzer. Use RBW=3kHz and sweep time = span/3kHz. Measure the Power Spectral Density and record the results in dBm.

Test Setup:

As Test Setup of clause 3.1.1 in this test report.

Test Limit:
The maximum peak output power shall not exceeded 8dBm

Results of Tx Mode 802.11 b 11Mbit (2412MHz to 2462MHz) : Pass (TX Unit)
Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2407.1	-43.95

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2437.6	-47.69

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2462.8	-47.93

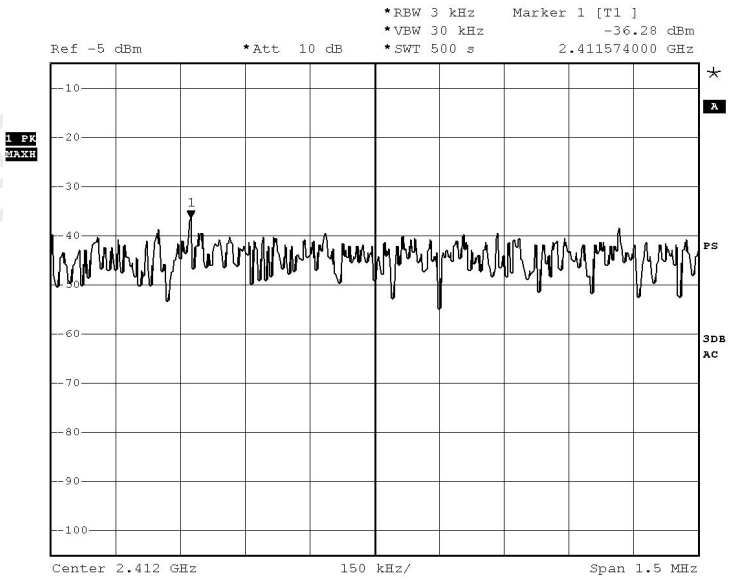
Results of Tx Mode 802.11 g 54Mbit (2412MHz to 2462MHz) : Pass (TX Unit)
Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2407.1	-47.21

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2437.5	-49.62

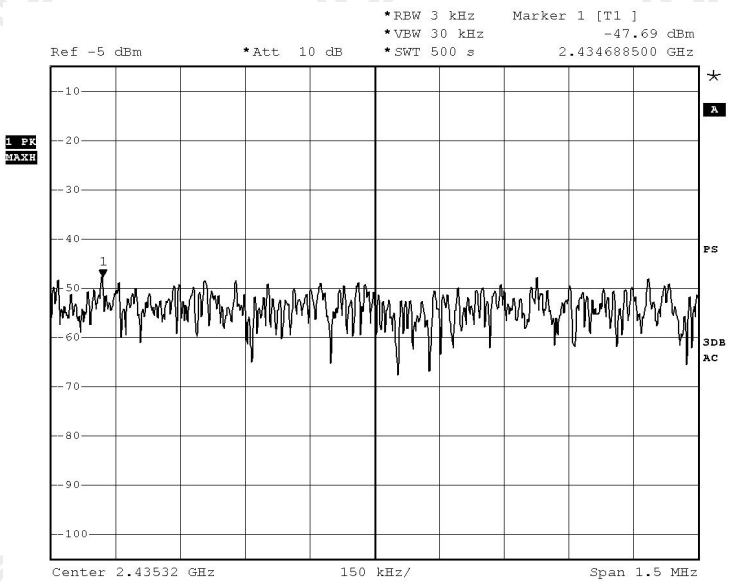
Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2462.8	-49.62

Tx Mode 802.11 b 11Mbit (2412MHz to 2462MHz)
Ch 1



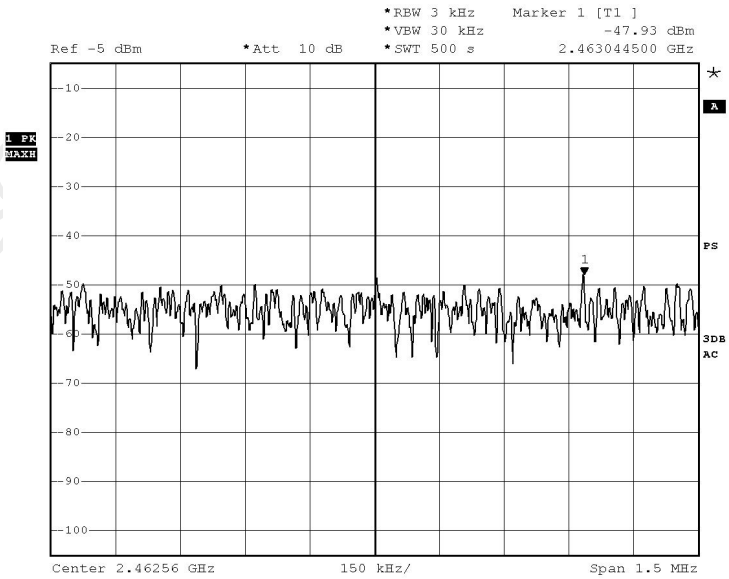
Date: 20.NOV.2009 03:27:24

Ch 6

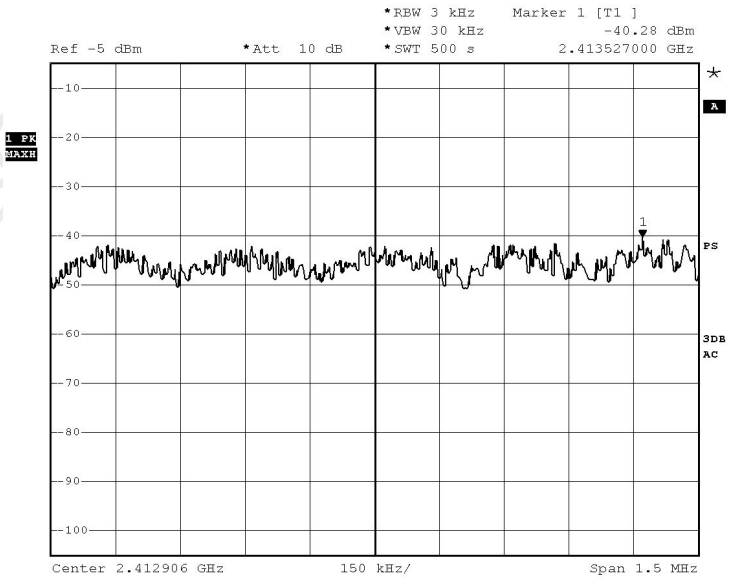


Date: 23.SEP.2009 11:39:51

Ch 11

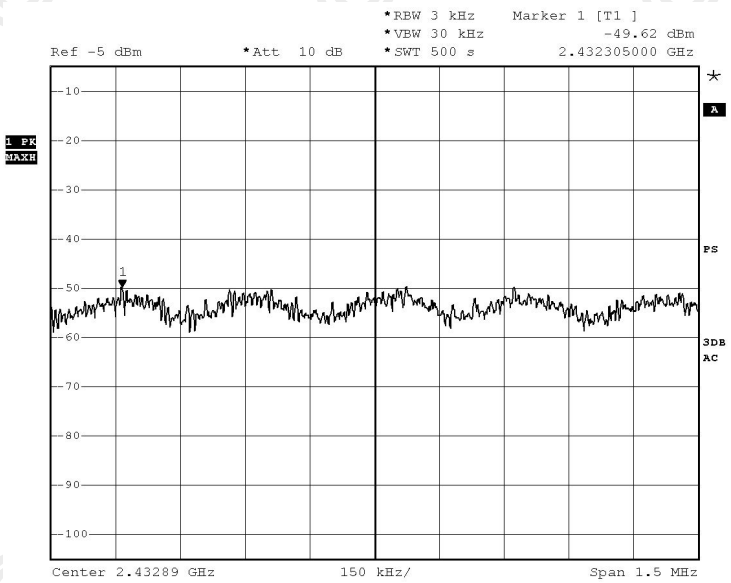


Tx Mode 802.11 g 54Mbit (2412MHz to 2462MHz)
Ch 1



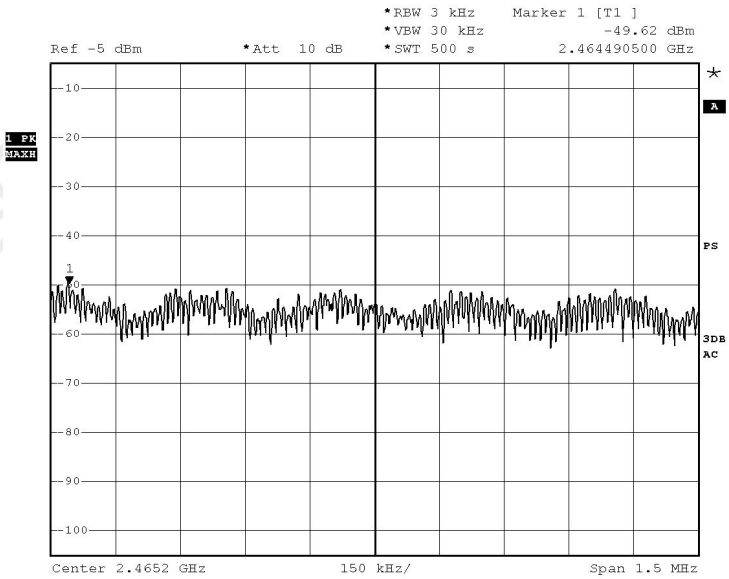
Date: 20.NOV.2009 03:32:56

Ch 6



Date: 23.SEP.2009 11:51:26

Ch 11



Date: 23.SEP.2009 11:13:47

3.1.4 Frequency Range Measurement

Test Requirement:	FCC 47CFR 15.247(a)(2)
Test Method:	ANSI C63.4:2003
Test Date:	2009-09-16
Mode of Operation:	Tx Mode

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

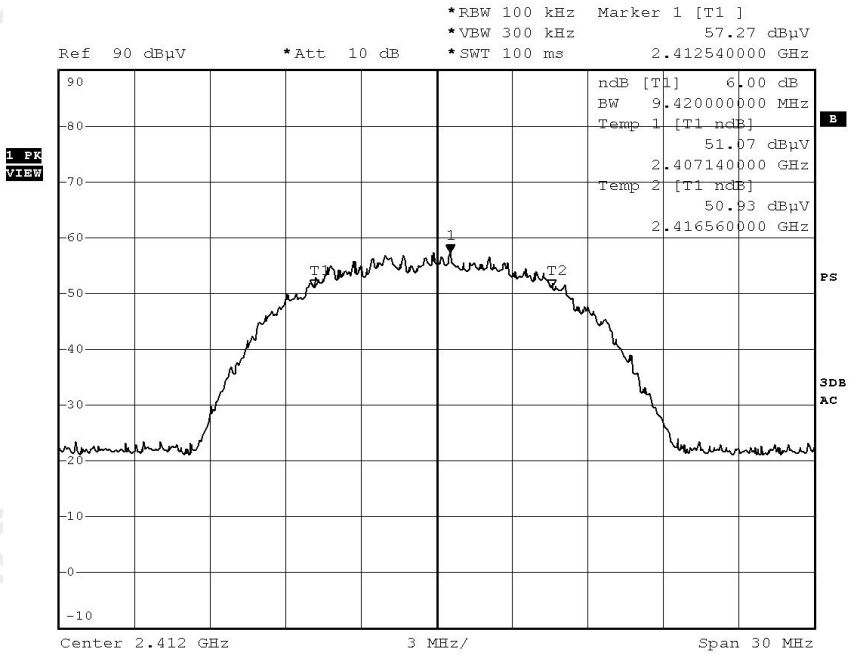
Test Setup:

As Test Setup of clause 3.1.1 in this test report.

Limits for Frequency Range Measurement:

Center Frequency [MHz]	6dB Bandwidth [MHz]	FCC Limits [kHz]
2412.5	9.42	> 500

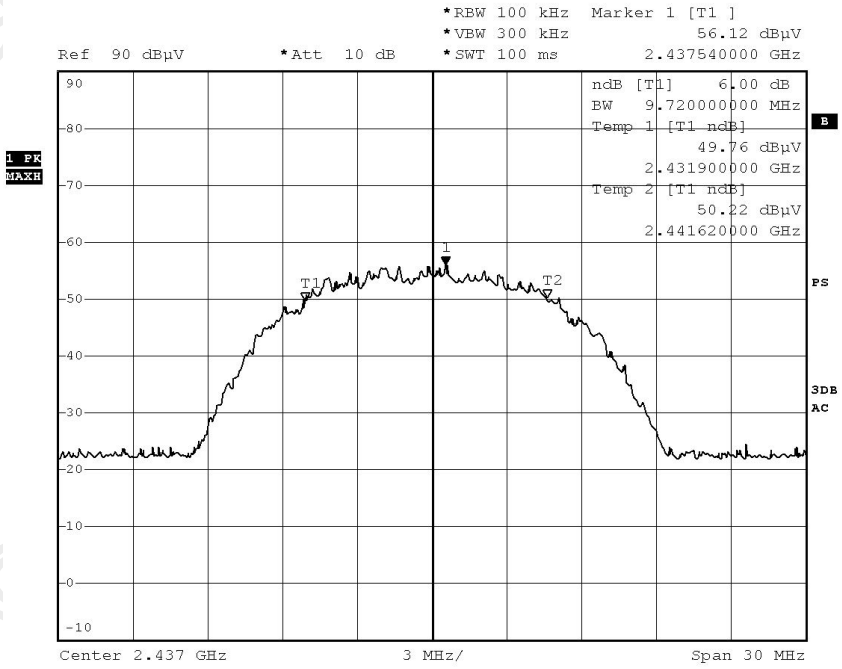
Tx Mode 802.11 b 11Mbit Ch1 **(Lowest Operating Frequency)**



Limits for Frequency Range Measurement:

Frequency Range [MHz]	6dB Bandwidth [MHz]	FCC Limits [kHz]
2437.5	9.72	> 500

Tx Mode 802.11 b 11Mbit Ch6 **(Mid. Operating Frequency)**

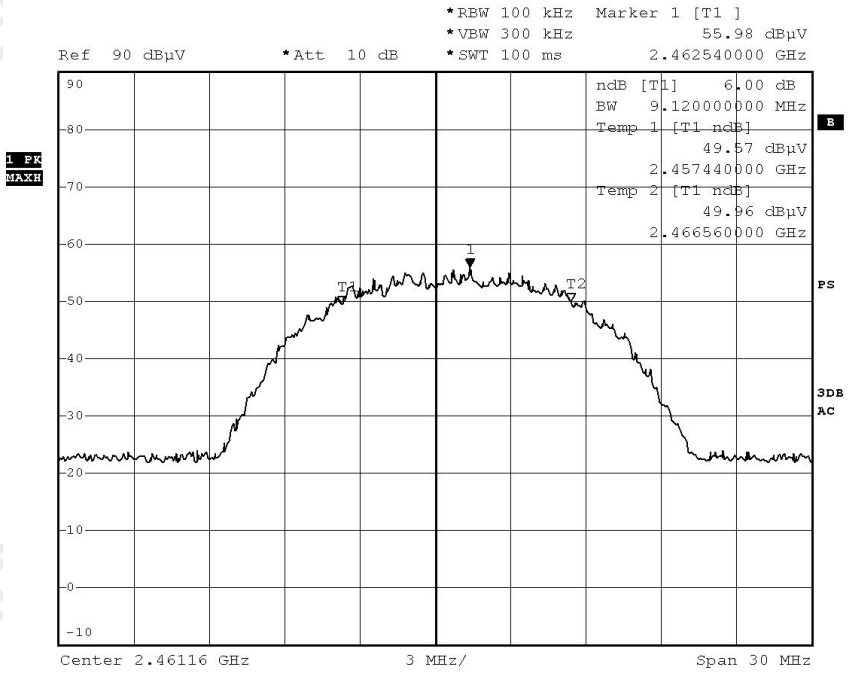


Date: 16.SEP.2009 12:46:04

Limits for Frequency Range Measurement:

Frequency Range [MHz]	6dB Bandwidth [MHz]	FCC Limits [kHz]
2462.5.00	9.12	> 500

Tx Mode 802.11 b 11Mbit Ch11 **(Highest Operating Frequency)**

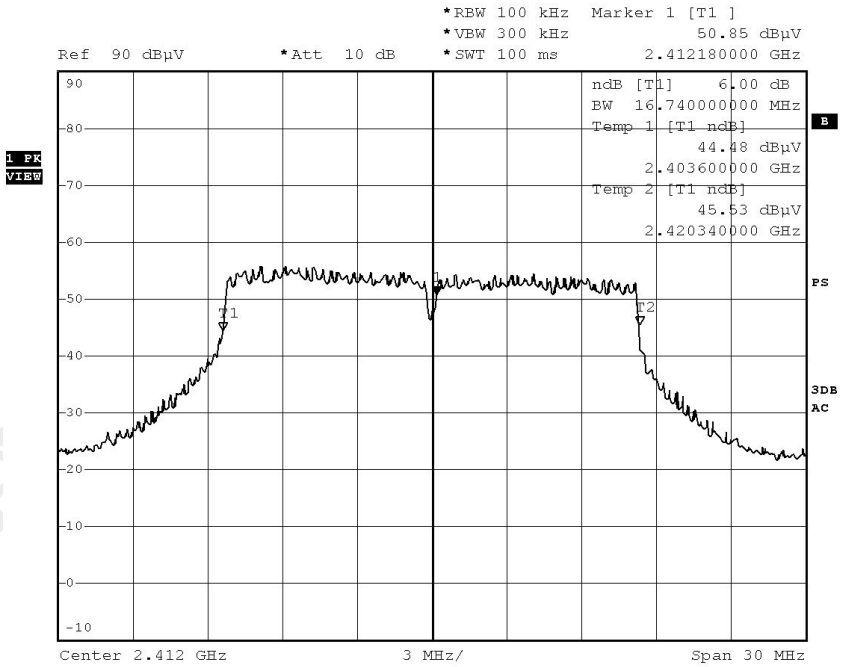


Date: 16.SEP.2009 12:43:30

Limits for Frequency Range Measurement:

Center Frequency [MHz]	6dB Bandwidth [MHz]	FCC Limits [kHz]
2412.2	16.74	> 500

Tx Mode 802.11 g 54Mbit Ch1 **(Lowest Operating Frequency)**

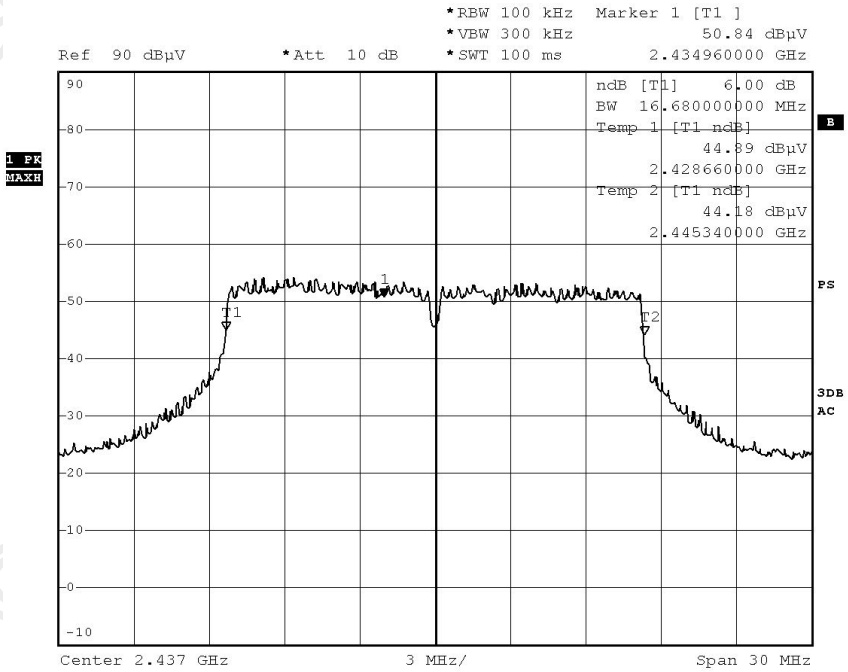


Date: 16.SEP.2009 13:32:00

Limits for Frequency Range Measurement:

Frequency Range [MHz]	6dB Bandwidth [MHz]	FCC Limits [kHz]
2435	16.68	> 500

Tx Mode 802.11 g 54Mbit Ch6 **(Mid. Operating Frequency)**

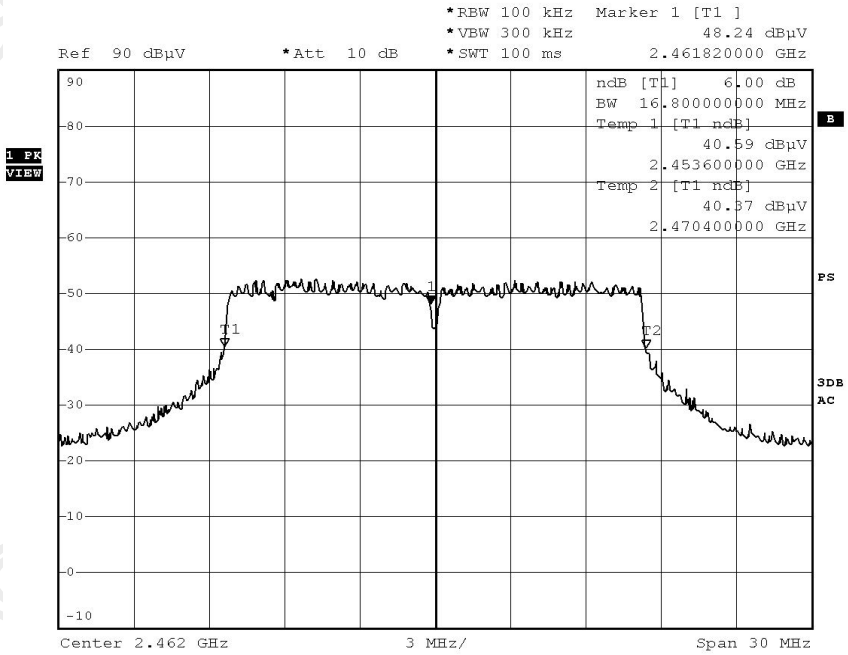


Date: 16.SEP.2009 12:47:40

Limits for Frequency Range Measurement:

Frequency Range [MHz]	6dB Bandwidth [MHz]	FCC Limits [kHz]
2461.82	16.8	> 500

Tx Mode 802.11 g 54Mbit Ch11 **(Highest Operating Frequency)**



Date: 16.SEP.2009 13:35:38

3.1.5 Band Edges Measurement

Test Requirement:	FCC 47CFR 15.247
Test Method:	ANSI C63.4:2003
Test Date:	2009-09-11
Mode of Operation:	Wifi Mode

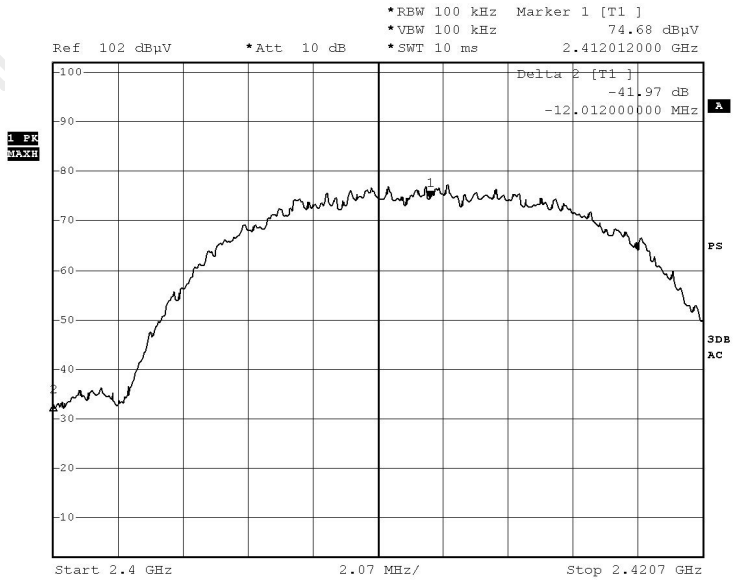
Test Method:

The band edge is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. The RBW and VBW are set to 100kHz for this measurement.

Test Setup:

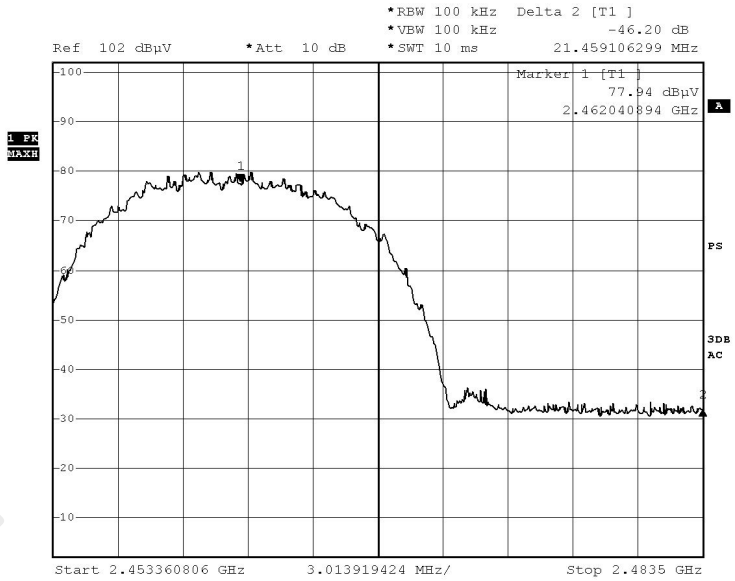
As Test Setup of clause 3.1.1 in this test report.

Band-edge Compliance of RF Emissions（Tx Mode 802.11 b 11Mbit Channel 1 - Lowest）



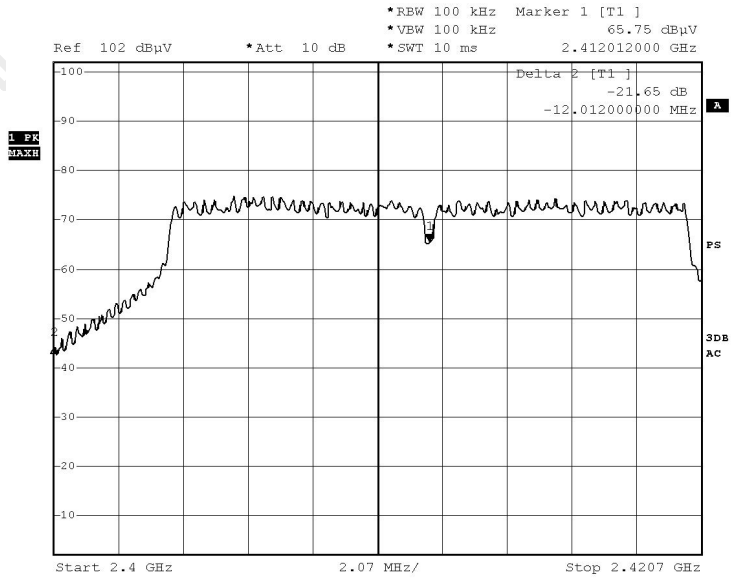
Date: 11.NOV.2009 03:54:49

Band-edge Compliance of RF Emissions（Tx Mode 802.11 b 11Mbit Channel 11 - Highest）



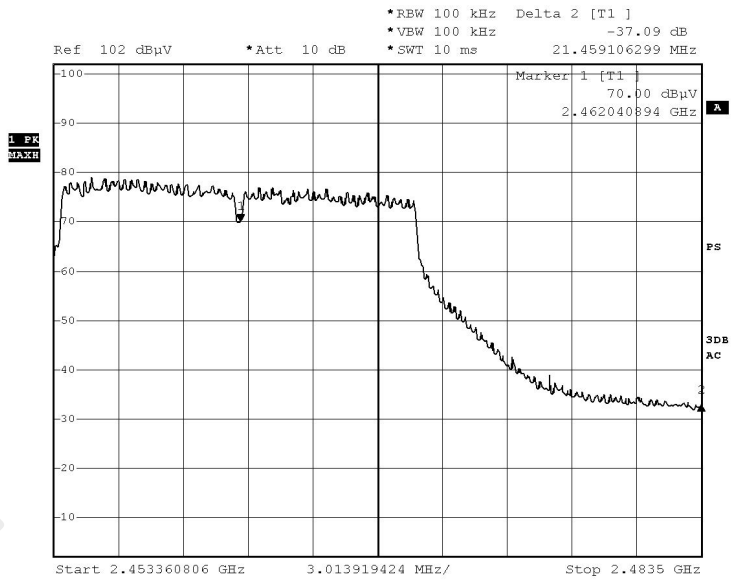
Date: 11.NOV.2009 04:32:37

Band-edge Compliance of RF Emissions（Tx Mode 802.11 g 54Mbit Channel 1 - Lowest）



Date: 11.NOV.2009 03:43:22

Band-edge Compliance of RF Emissions（Tx Mode 802.11 g 54Mbit Channel 11 - Highest）



Date: 11.NOV.2009 04:31:51

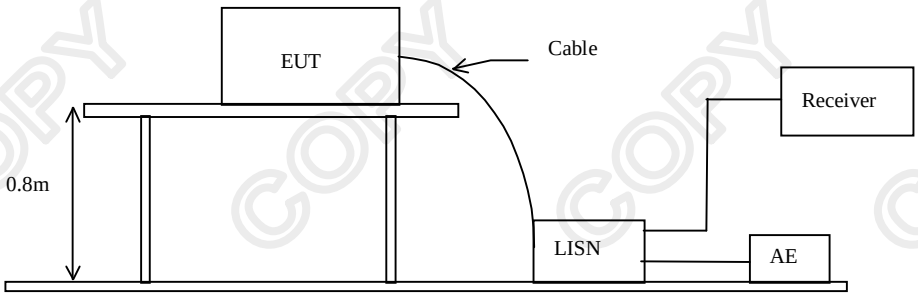
3.1.6 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement:	FCC 47CFR 15.207
Test Method:	ANSI C63.4:2003
Test Date:	2009-09-11
Mode of Operation:	Tx mode, FM mode, Internet Radio mode, iPod mode, Aux-in mode and Clock mode

Test Method:

The test was performed in accordance with ANSI C63.4: 2003, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Test Setup:



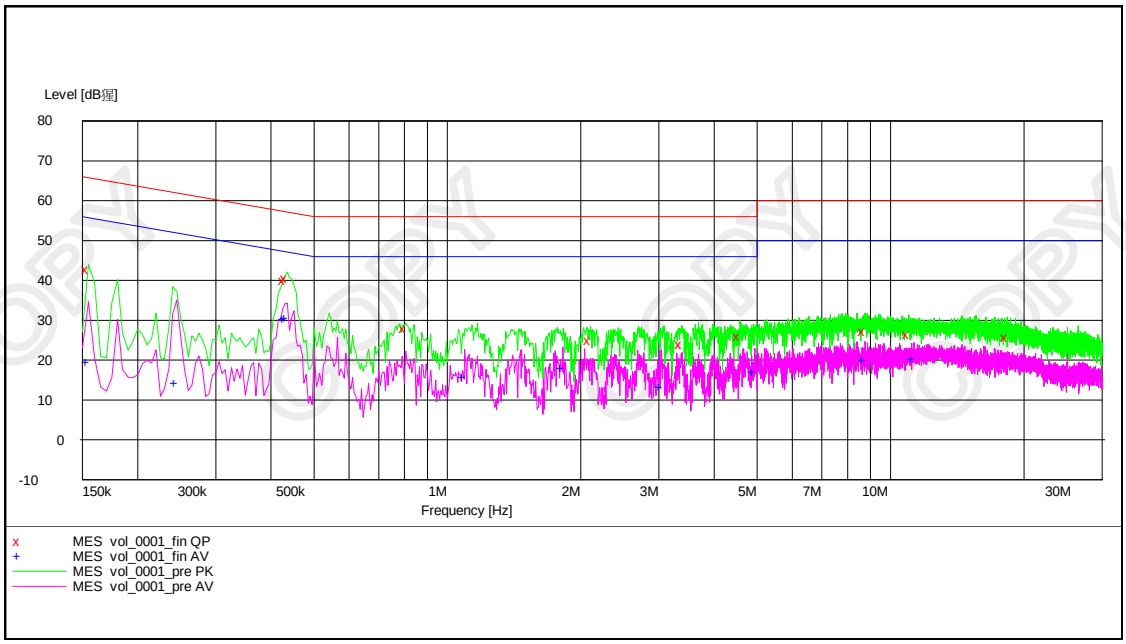
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Tx mode: PASS



Results of Tx mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.150	41.9	66.0	26.1	56.0
Live	0.430	38.7	57.0	29.6	47.0
Live	0.435	-*-	-*-	29.9	47.0
Live	0.440	39.3	57.0	-*-	-*-
Live	0.805	26.9	56.0	-*-	-*-
Live	0.860	-*-	-*-	18.2	46.0
Live	1.500	25.6	56.0	17.8	46.0
Live	2.170	24.7	56.0	-*-	-*-
Live	2.220	-*-	-*-	15.9	46.0
Live	3.790	21.4	56.0	-*-	-*-
Live	4.565	-*-	-*-	13.2	46.0
Live	9.770	-*-	-*-	17.6	50.0
Live	9.815	24.2	60.0	-*-	-*-
Live	13.295	-*-	-*-	20.3	50.0
Live	16.250	26.5	60.0	-*-	-*-
Live	17.930	-*-	-*-	19.5	50.0
Live	19.880	24.4	60.0	-*-	-*-
Neutral	0.155	42.9	66.0	19.4	56.0
Neutral	0.245	-*-	-*-	14.3	52.0
Neutral	0.430	40.1	57.0	30.3	47.0
Neutral	0.435	40.5	57.0	30.4	47.0
Neutral	0.805	27.9	56.0	-*-	-*-
Neutral	1.095	-*-	-*-	15.7	46.0
Neutral	1.820	-*-	-*-	18.1	46.0
Neutral	2.100	25.1	56.0	-*-	-*-
Neutral	3.035	-*-	-*-	13.2	46.0
Neutral	3.380	24.0	56.0	-*-	-*-
Neutral	4.570	26.0	56.0	-*-	-*-
Neutral	4.940	-*-	-*-	16.9	46.0
Neutral	8.755	27.3	60.0	20.0	50.0
Neutral	11.005	26.4	60.0	-*-	-*-
Neutral	11.300	-*-	-*-	20.3	50.0
Neutral	18.345	25.7	60.0	-*-	-*-

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

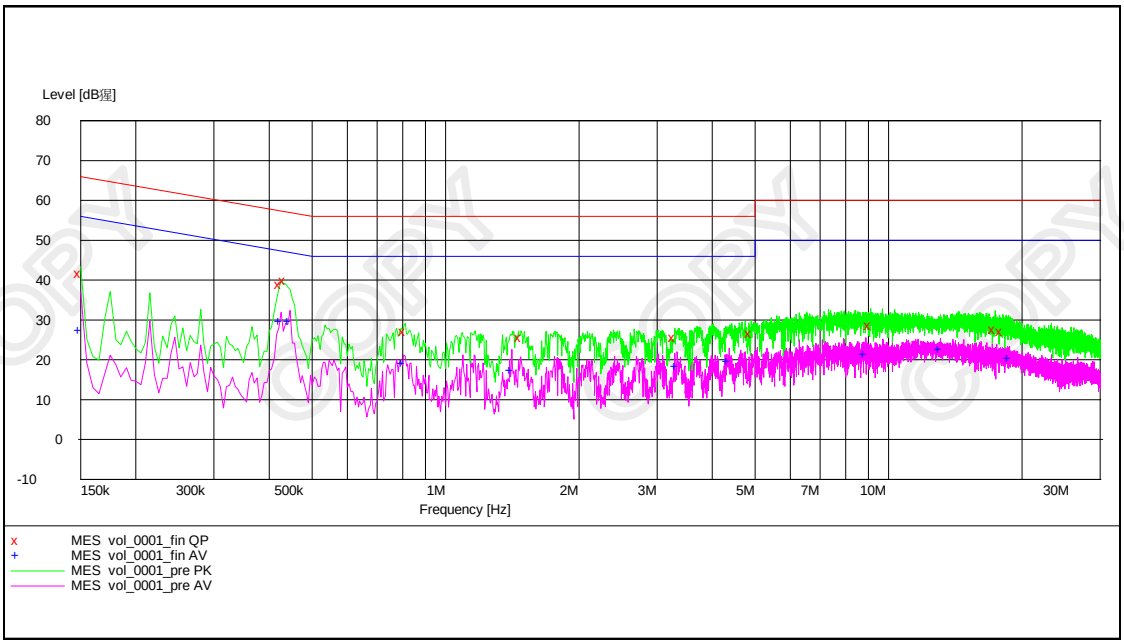
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of FM mode: PASS



Results of FM mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.150	41.7	66.0	27.4	56.0
Live	0.425	39.0	57.0	29.7	47.0
Live	0.435	40.0	57.0	-*-	-*-
Live	0.445	-*-	-*-	29.5	47.0
Live	0.805	-*-	-*-	19.2	46.0
Live	0.810	27.2	56.0	-*-	-*-
Live	1.410	-*-		17.3	46.0
Live	1.480	25.5	56.0	-*-	-*-
Live	3.295	25.5	56.0	-*-	-*-
Live	3.330	-*-	-*-	18.4	46.0
Live	4.365	-*-	-*-	19.6	46.0
Live	4.895	26.6	56.0	-*-	-*-
Live	8.885	-*-	-*-	21.3	50.0
Live	9.110	28.8	60.0	-*-	-*-
Live	13.095	-*-	-*-	22.6	50.0
Live	17.390	27.6	60.0	-*-	-*-
Live	18.085	27.2	60.0	-*-	-*-
Live	18.755	-*-	-*-	20.4	50.0

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

Results of FM mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Neutral	0.150	41.7	66.0	27.3	56.0
Neutral	0.425	38.3	57.0	28.9	47.0
Neutral	0.435	-*-	-*-	30.5	47.0
Neutral	0.440	39.0	57.0	-*-	-*-
Neutral	0.765	26.3	56.0	-*-	-*-
Neutral	0.795	-*-	-*-	18.0	46.0
Neutral	1.720	-*-	-*-	15.7	46.0
Neutral	2.080	24.2	56.0	-*-	-*-
Neutral	2.415	22.9	56.0	-*-	-*-
Neutral	2.745	-*-	-*-	14.7	46.0
Neutral	3.710	-*-	-*-	13.8	46.0
Neutral	4.710	20.8	56.0	-*-	-*-
Neutral	9.325	-*-	-*-	19.3	50.0
Neutral	9.695	26.7	60.0	-*-	-*-
Neutral	13.985	-*-	-*-	22.0	50.0
Neutral	15.130	28.0	60.0	-*-	-*-
Neutral	17.930	27.8	60.0	-*-	-*-
Neutral	18.340	-*-	-*-	21.0	50.0

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

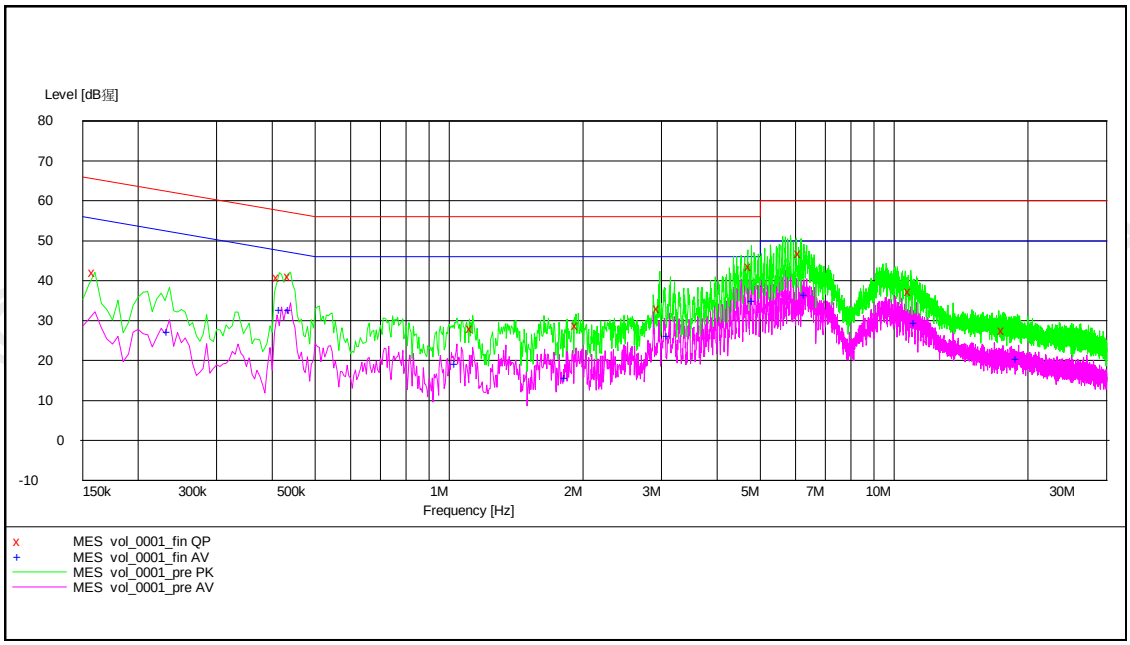
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Internet Radio mode: PASS



Results of Internet Radio mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.160	42.2	66.0	-*-	-*-
Live	0.235	-*-	-*-	27.1	47.0
Live	0.415	40.9	58.0	-*-	-*-
Live	0.420	-*-	-*-	32.7	47.0
Live	0.440	41.0	57.0	32.7	47.0
Live	1.040	-*-	-*-	19.0	46.0
Live	1.130	28.0	56.0	-*-	-*-
Live	1.840	-*-	-*-	15.5	46.0
Live	1.950	28.8	56.0	-*-	-*-
Live	2.970	33.0	56.0	-*-	-*-
Live	3.120	-*-	-*-	26.2	46.0
Live	4.770	43.6	56.0	-*-	-*-
Live	4.850	-*-	-*-	34.9	46.0
Live	6.175	46.9	60.0	-*-	-*-
Live	6.350	-*-	-*-	36.5	50.0
Live	10.915	37.4	60.0	-*-	-*-
Live	11.220	-*-	-*-	29.4	50.0
Live	17.705	27.6	60.0	-*-	-*-
Live	19.040	-*-	-*-	20.3	50.0
Neutral	0.155	41.6	66.0	29.8	56.0
Neutral	0.430	42.6	57.0	-*-	-*-
Neutral	0.435	41.8	57.0	32.8	47.0
Neutral	0.740	-*-	-*-	19.5	46.0
Neutral	1.065	28.4	56.0	-*-	-*-
Neutral	1.850	-*-	-*-	16.7	46.0
Neutral	1.965	27.9	56.0	-*-	-*-
Neutral	3.105	31.9	56.0	-*-	-*-
Neutral	3.180	-*-	-*-	25.1	46.0
Neutral	4.810	42.0	60.0	-*-	-*-
Neutral	6.285	44.3	60.0	-*-	-*-
Neutral	6.295	-*-	-*-	37.6	50.0
Neutral	10.495	-*-	-*-	31.5	50.0
Neutral	10.730	37.8	60.0	-*-	-*-
Neutral	18.420	-*-	-*-	20.9	50.0
Neutral	18.900	27.2	60.0	-*-	-*-

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

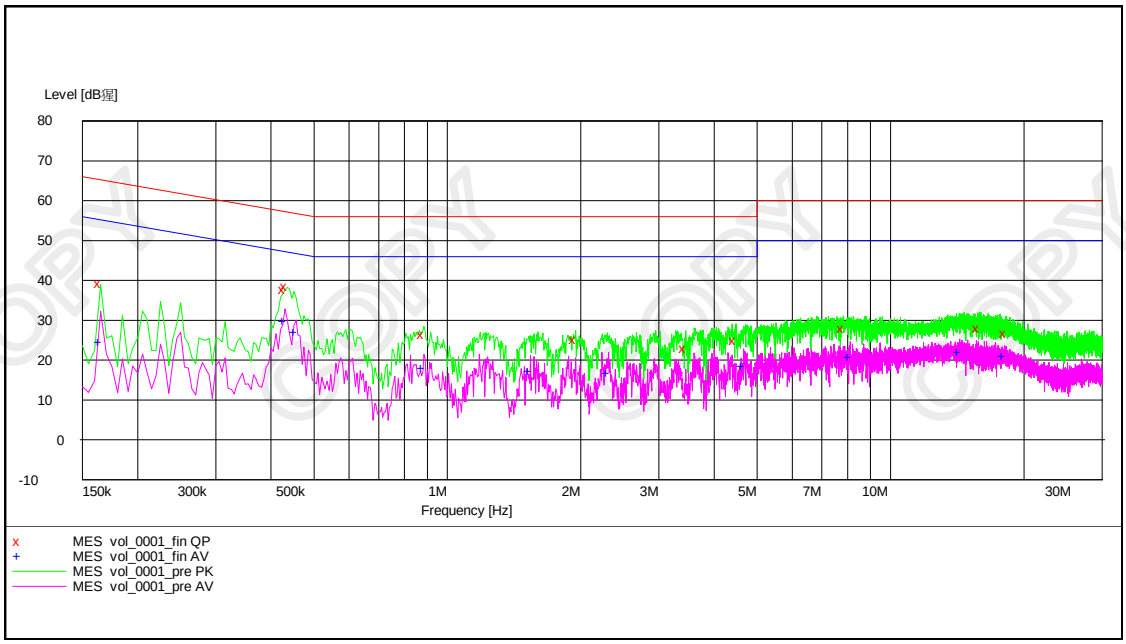
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of iPod mode: PASS



Results of iPod mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.165	39.2	65.0	24.4	55.0
Live	0.430	37.8	57.0	29.7	47.0
Live	0.435	38.6	57.0	-*-	-*-
Live	0.455	-*-	-*-	27.0	47.0
Live	0.885	26.6	56.0	18.0	46.0
Live	1.540	-*-	-*-	17.2	46.0
Live	1.950	25.3	56.0	-*-	-*-
Live	2.310	-*-	-*-	16.7	46.0
Live	3.450	23.0	56.0	-*-	-*-
Live	4.475	25.1	56.0	-*-	-*-
Live	4.655	-*-	-*-	18.5	46.0
Live	7.845	27.9	60.0	-*-	-*-
Live	8.115	-*-	-*-	20.7	50.0
Live	14.315	-*-	-*-	21.9	50.0
Live	15.860	28.1	60.0	-*-	-*-
Live	18.035	-*-	-*-	20.9	50.0
Live	18.195	26.7	60.0	-*-	-*-
Neutral	0.200	34.8	64.0	-*-	-*-
Neutral	0.245	-*-	-*-	25.7	52.0
Neutral	0.430	38.4	57.0	28.9	47.0
Neutral	0.435	39.1	57.0	-*-	-*-
Neutral	0.440	-*-	-*-	29.2	47.0
Neutral	0.855	23.9	56.0	17.8	46.0
Neutral	1.790	25.3	56.0	-*-	-*-
Neutral	1.900	-*-	-*-	16.3	46.0
Neutral	2.215	-*-	-*-	14.9	46.0
Neutral	2.650	18.3	56.0	-*-	-*-
Neutral	4.000	18.9	56.0	-*-	-*-
Neutral	4.320	-*-	-*-	12.2	46.0
Neutral	9.905	26.0	60.0	-*-	-*-
Neutral	9.910	-*-	-*-	17.9	50.0
Neutral	14.855	28.5	60.0	-*-	-*-
Neutral	15.725	-*-	-*-	21.8	50.0
Neutral	17.845	28.1	60.0	-*-	-*-
Neutral	18.580	-*-	-*-	21.3	50.0

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

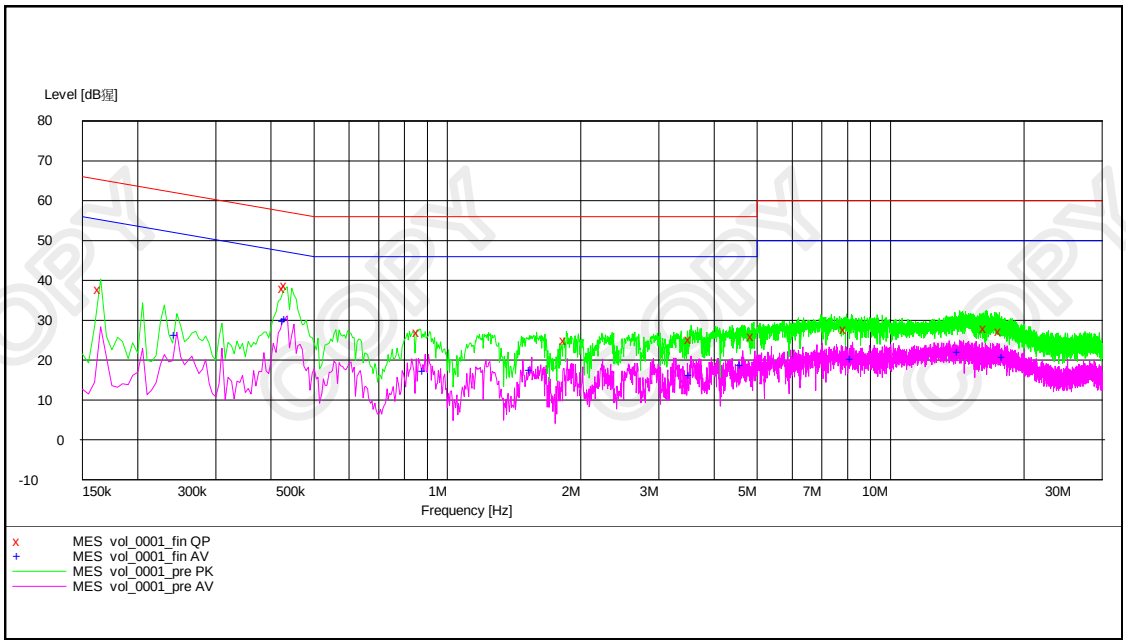
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Aux-in mode: PASS



Results of Aux-in mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.165	37.8	65.0	-*-	-*-
Live	0.245	38.0	57.0	26.1	52.0
Live	0.430	-*-	-*-	29.7	47.0
Live	0.435	38.8	57.0	30.3	47.0
Live	0.865	26.9	56.0	-*-	-*-
Live	0.890	-*-	-*-	17.3	46.0
Live	1.550	-*-	-*-	17.4	46.0
Live	1.855	25.1	56.0	-*-	-*-
Live	3.545	25.3	56.0	16.2	46.0
Live	4.640	-*-	-*-	18.7	46.0
Live	4.905	25.8	56.0	-*-	-*-
Live	7.960	27.7	60.0	-*-	-*-
Live	8.215	-*-	-*-	20.3	50.0
Live	14.325	-*-	-*-	22.0	50.0
Live	16.450	28.0	60.0	-*-	-*-
Live	17.815	-*-	-*-	-*-	-*-
Live	18.075	27.2	60.0	20.8	50.0
Neutral	0.170	37.0	65.0	-*-	-*-
Neutral	0.215	-*-	-*-	16.9	53.0
Neutral	0.430	36.3	57.0	28.5	47.0
Neutral	0.440	36.8	57.0	27.3	47.0
Neutral	0.890	-*-	-*-	16.8	46.0
Neutral	0.905	25.0	56.0	-*-	-*-
Neutral	1.255	-*-	-*-	16.6	46.0
Neutral	1.270	24.2	56.0	-*-	-*-
Neutral	2.260	22.0	56.0	-*-	-*-
Neutral	2.265	-*-	-*-	14.6	46.0
Neutral	3.720	-*-	-*-	13.8	46.0
Neutral	4.455	19.8	56.0	-*-	-*-
Neutral	10.245	25.1	60.0	18.6	50.0
Neutral	15.130	27.9	60.0	-*-	-*-
Neutral	16.115	-*-	-*-	20.9	50.0
Neutral	17.905	26.6	60.0	-*-	-*-
Neutral	18.745	-*-	-*-	19.9	50.0

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

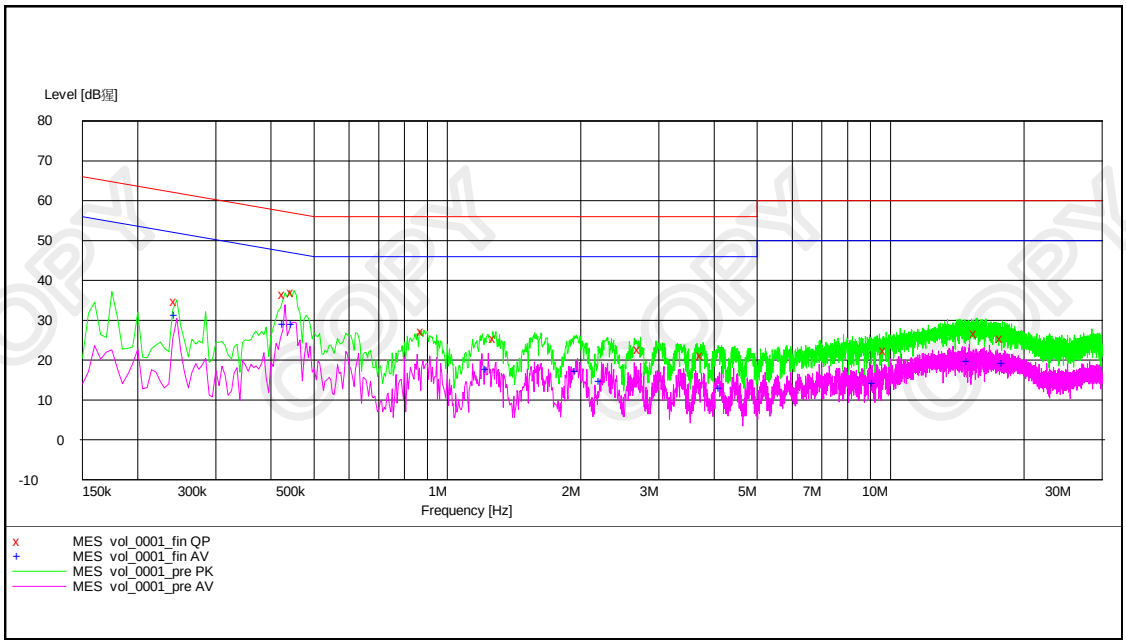
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Clock mode: PASS



Results of Clock mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.165	37.8	65.0	-*-	-*-
Live	0.245	38.0	57.0	26.1	52.0
Live	0.430	-*-	-*-	29.7	47.0
Live	0.435	38.8	57.0	30.3	47.0
Live	0.865	26.9	56.0	-*-	-*-
Live	0.890	-*-	-*-	17.3	46.0
Live	1.550	-*-	-*-	17.4	46.0
Live	1.855	25.1	56.0	-*-	-*-
Live	3.545	25.3	56.0	16.2	46.0
Live	4.640	-*-	-*-	18.7	46.0
Live	4.905	25.8	56.0	-*-	-*-
Live	7.960	27.7	60.0	-*-	-*-
Live	8.215	-*-	-*-	20.3	50.0
Live	14.325	-*-	-*-	22.0	50.0
Live	16.450	28.0	60.0	-*-	-*-
Live	17.815	-*-	-*-	-*-	-*-
Live	18.075	27.2	60.0	20.8	50.0

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

Results of Clock mode: PASS

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Neutral	0.195	35.8	64.0	22.3	54.0
Neutral	0.245	-*-	-*-	31.4	52.0
Neutral	0.425	-*-	-*-	28.9	47.0
Neutral	0.430	37.4	57.0	-*-	-*-
Neutral	0.440	38.5	57.0	-*-	-*-
Neutral	0.455	-*-	-*-	29.1	47.0
Neutral	0.870	-*-	-*-	18.6	46.0
Neutral	0.880	27.7	56.0	-*-	-*-
Neutral	1.940	-*-	-*-	18.1	46.0
Neutral	1.965	26.0	56.0	-*-	-*-
Neutral	2.690	-*-	-*-	17.7	46.0
Neutral	3.385	26.0	56.0	-*-	-*-
Neutral	4.130	-*-	-*-	18.3	46.0
Neutral	4.160	25.3	56.0	-*-	-*-
Neutral	6.575	27.4	60.0	-*-	-*-
Neutral	6.835	-*-	-*-	19.4	50.0
Neutral	14.025	-*-	-*-	-*-	-*-
Neutral	14.935	26.9	33.1	20.2	50.0
Neutral	18.105	25.2	60.0	-*-	-*-

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

Antenna Requirement

Test Requirements: § 15.203

Test Specification:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Results:

The EUT has 1 Antenna which is permanently attached to the main unit and attached on PCB board, the antenna gain = 2dBi. All component install on inside of EUT. User unable to remove or changed the Antenna.

Frequency List for 802.11 b/g

Item	Frequency（MHz）
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

Appendix A

List of Measurement Equipment

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM020	HORN ANTENNA	EMCO	3115	4032	2009/09/11	2011/09/11
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2009/07/26	2011/07/26
EM215	MULTIDEVICE CONTROLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-Linggren	FACT-3	--	2008/12/01	2011/12/01
EM174	BICONILOG ANTENNA	EMCO	3142C	00029071	2008/01/24	2010/01/24
EM229	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB40	100248	2009/09/08	2020/09/08

Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM197	LISN	EMCO	4825/2	1193	2007/10/30	2009/10/30
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2009/06/29	2010/06/29
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057-99A	2009/01/23	2010/01/23

Appendix B

Ancillary Equipment

ITEM NO.	DESCRIPTION	MODEL NO.	FCC ID	REMARK
1	iPod Nano 3rd Gen	A1236	N/A	Serial no.: 7J825H2YYOP

Remarks:-

CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined

Appendix C

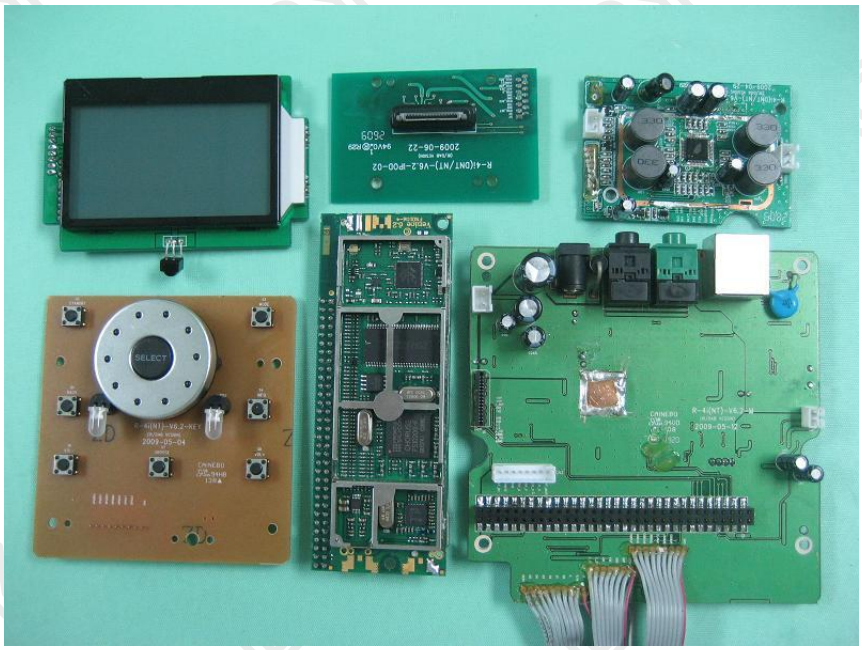
Photographs of EUT

Front View of the product

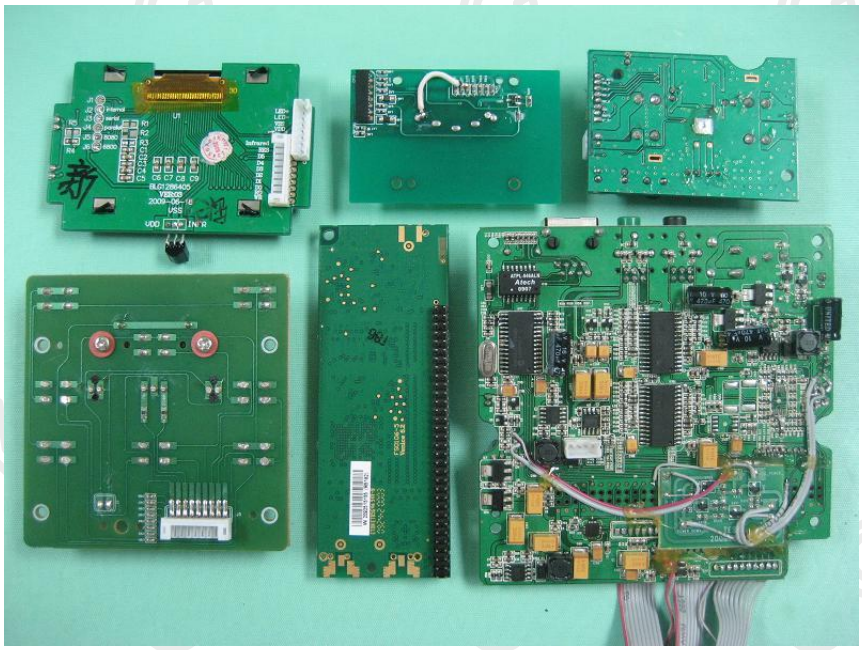
Rear View of the product

Photographs of EUT

Inner Circuit front view

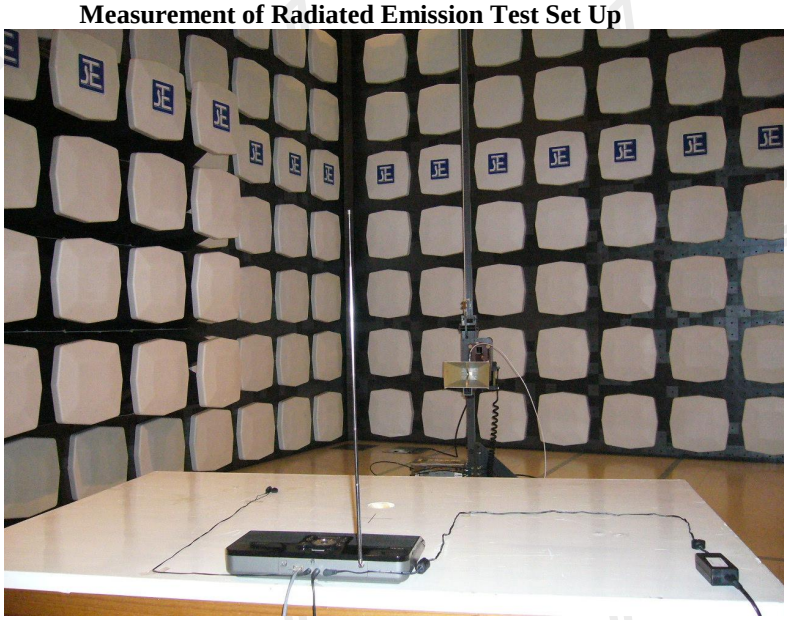


Inner Circuit back view

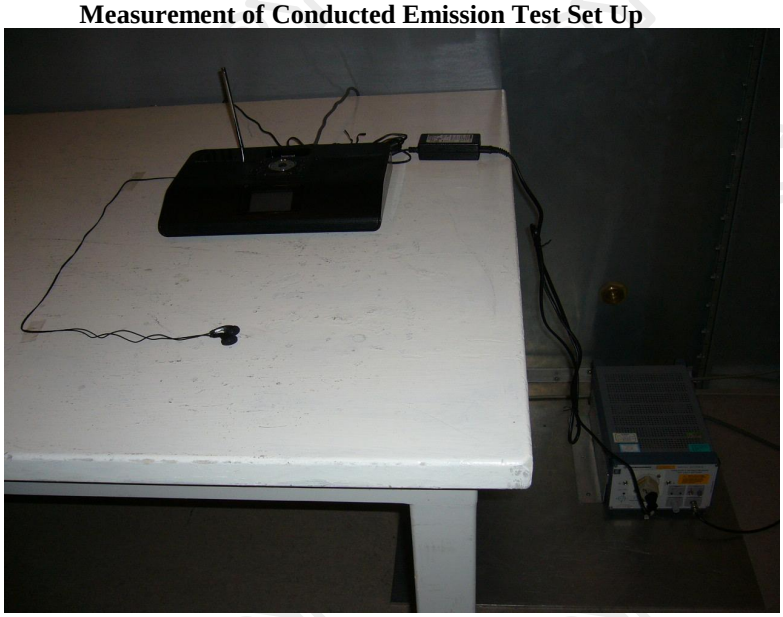


Photographs of EUT

Measurement of Radiated Emission Test Set Up



Measurement of Conducted Emission Test Set Up



******* End of Test Report *******