FCC TEST REPORT

Certification Application under FCC Part 15, Subpart C, Paragraph 15.249,
Low Power Transmitters Operating in the Frequency Band 2400-2483.5 MHz.

PREPARED FOR：

SHENZHEN JINGNENG TELECOM TECHNOLOGY CO., LTD

BaiMenQian Industrial Zone, Shawan, Buji Town, LongGang District,
ShenZhen City, P.R.China.

FCC ID: PJU2400-01
EUT: 2.4GHz Cordless Telephone
Brand Name: Southwestern Bell, Conair Phone **Model: GH2400, CTP9400**

January 28, 2003

Report Type: Original Report
Test Engineer: Peter Lin
Test Date: January 16, 2003
Review By: _____ Apollo Liu

PREPARED BY：

Shenzhen Academy of Metrology & Quality Inspection
Longzhu Road, Nanshan

FCC Registration Number: 97379

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1. Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result
FCC Part 15, Paragraph 15.107(a) &15.207	AC Power Conducted Emission Test;	**PASS**
FCC Part 15 Subpart C Paragraph 15.249(a)(c), 15.209, 15.205&1.1310	Transmitter Radiated Emission, Harmonic Emissions and RF Exposure Limit & Band Edge.	**PASS**
FCC Part 15 , Paragraph 15.109	Radiated Emissions for Class B Unintentional Radiators	**PASS**
FCC Part 15, Paragraph 15.214 (b)	Compliance with FCC 15.214	**PASS**

2. Test Statement

2. 1 Test Statement

A. This statement explains the test condition of this project. The EUT was tested under the condition of each test item.

B. The data shown in this report reflects the worst – case data for the condition as the summary of test result.

C. EUT conditions.

Note: (1)The EUT is a 2.4GHz Cordless Telephone.
(2)Each of lowest and highest channel frequencies of each sub-bands transmits continuously for emissions measurements.
(3)It is acknowledged by SHENZHEN JINGNENG TELECOM TECHNOLOGY CO., LTD. that Selling Model No: GH2400, CTP9400; Brand Name: Southwestern Bell, Conair Phone are identical. The Model difference is for marketing purposes only.

2. 2 Departure From Document Policies, Procedure or Specifications, The Statement

1. Did have Any departure from document policies & procedures or from specifications.
   Yes ___ , No □
   If yes , the description as below.

2. The report must not be used by the client to claim product endorsement by any agency the government.

3. This product is a test sample that was shown as the photos of this test report only.

4. The effect that the results relate only to the items tested.

3. EUT Modifications

No modification by Shenzhen Academy of Metrology & Quality Inspection.

4. Conducted Power Line Test

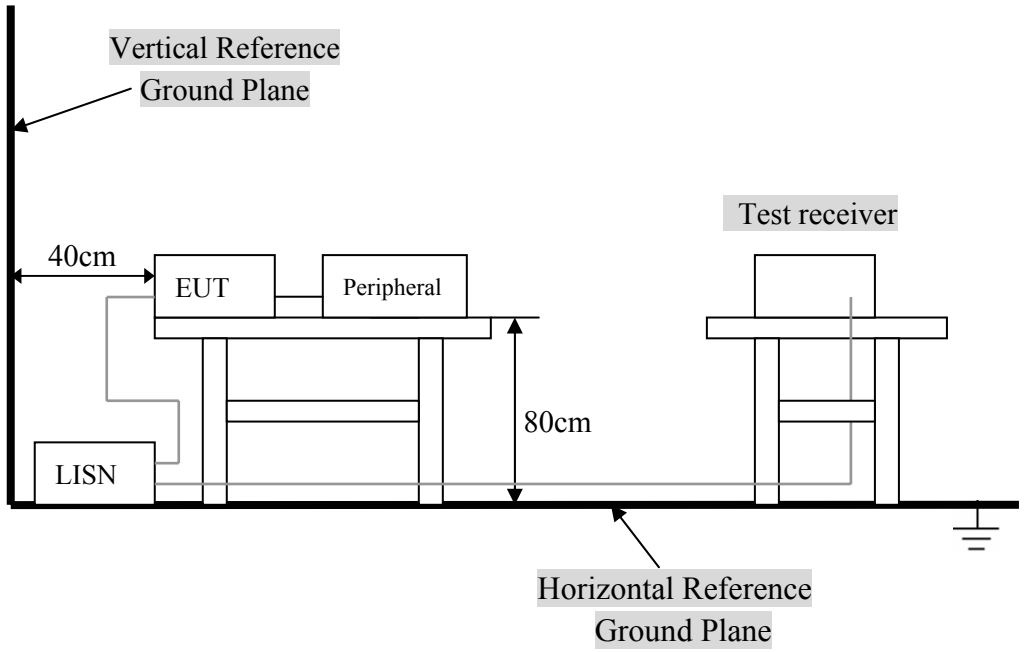
4. 1 Test Equipment

Please refer to Section 9 this report.

4. 2 Test Procedure

The EUT was tested according to ANSI C63.4 - 1992. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by section 5.1 OF ANSI C63.4 - 2000. cables and peripherals were moved to find the maximum emission levels for each frequency.

4. 3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.

4. 4 Configuration of The EUT

The EUT was configured according to ANSI C63.4-1992. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

DEVICE	MANUFACTURER	MODEL #	FCCID / DoC
2.4GHz Cordless Telephone	SHENZHEN JINGNENG TELECOM TECHNOLOGY CO., LTD	GH2400, CTP9400	PJU2400-01

B. Internal Devices

DEVICE	MANUFACTURER	MODEL #	FCCID / DoC
N/A			

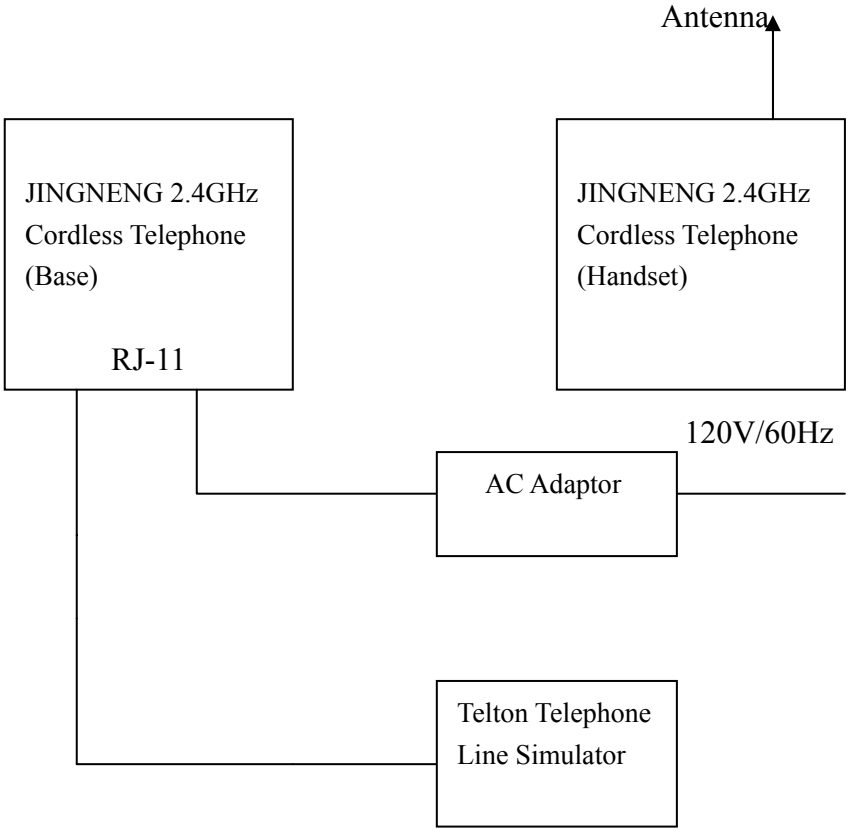
C. Peripherals

DEVICE	MANUFAC-TURER	MODEL # SERIAL #	FCC ID/ DoC	CABLE
Telephone Line Simulator	Telton	TL5-5	Doc	1.5m unshielded power cord 1.2m unshielded data cable.

4. 5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 1992.

A. Setup the EUT and simulators as shown on follow.
B. Enable RF signal and confirm EUT active.
C. Modulate output capacity of EUT up to specification.



4. 6 Conducted Power Line Emission Limits

FREQUENCY RANGE (MHz)	CLASS A QP/AV (dBuV)	CLASS B QP/AV (dBuV)
0.15 – 0.5	79/66	66 –56/56 –46
0.5 – 5.0	73/60	56/46
5.0 – 30	73/60	60/50

NOTE ：In the above table, the tighter limit applies at the band edges.

4. 7 Conducted Power Line Test Result

Product	: 2.4GHz Cordless Telephone
Test Item	: Conducted Power Line Test Data
Test Voltage	: AC 120V/60Hz
Test Mode	: Operated in both off-hook (Tx&Rx) and on-hook (standby&battery charging)
Temperature	: 24 ℃
Humidity	: 52%RH
Test Result	: PASS

Note: The RF voltage was scanned from 150KHz to 30MHz on each AC lines (hot and neutral) of the Base Unit and no significant emissions were found in this frequency band.

Conducted EMission

FCC15 B

EUT: 2.4GHz Cordless Telephone M/N: GH2400

Manufacturer: Shenzhen Jingneng Telecom Technology Co., Ltd.

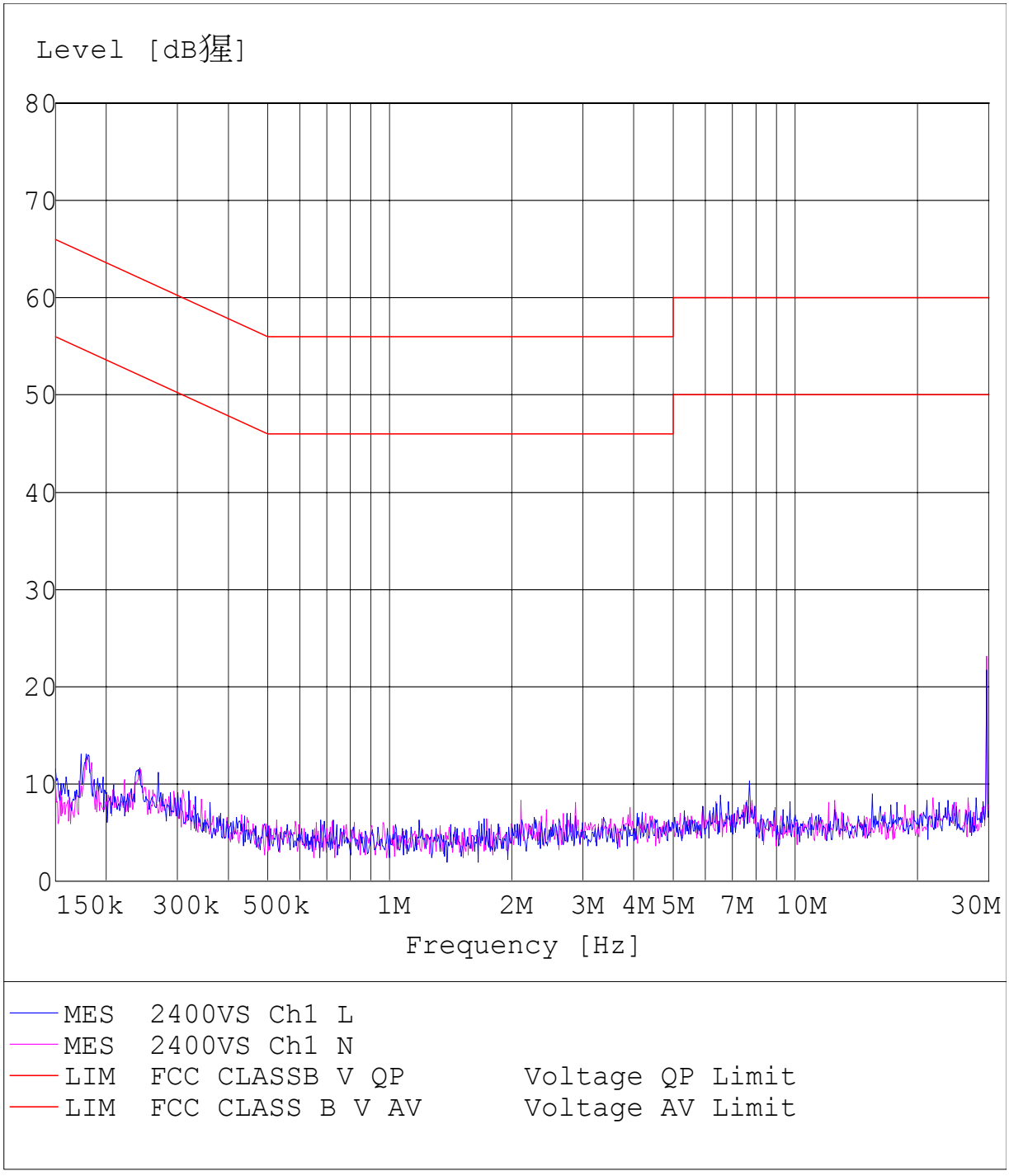
Operating Condition: Base Unit

Test Site: SMQ EMC Laboratory, SAC

Operator: Peter Lin

Test Specification: LINE&NEUTRAL

Comment:



Conducted EMission

FCC15 B

EUT: 2.4GHz Cordless Telephone M/N: GH2400

Manufacturer: Shenzhen Jingneng Telecom Technology Co., Ltd.

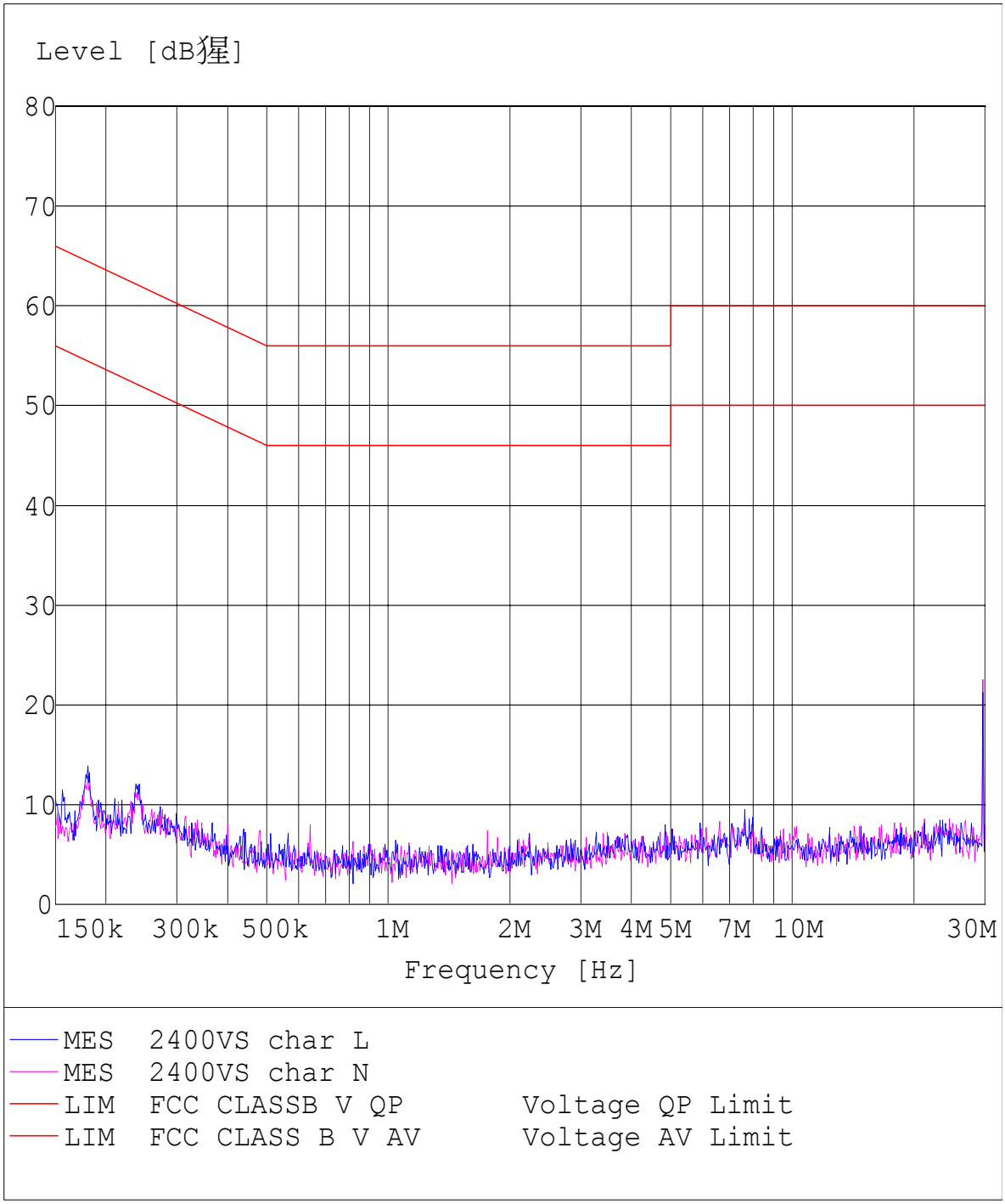
Operating Condition: Charging

Test Site: SMQ EMC Laboratory, SAC

Operator: Peter Lin

Test Specification: LINE&NEUTRAL

Comment:



5. Transmitter Spurious Emissions (Radiated @3meters)

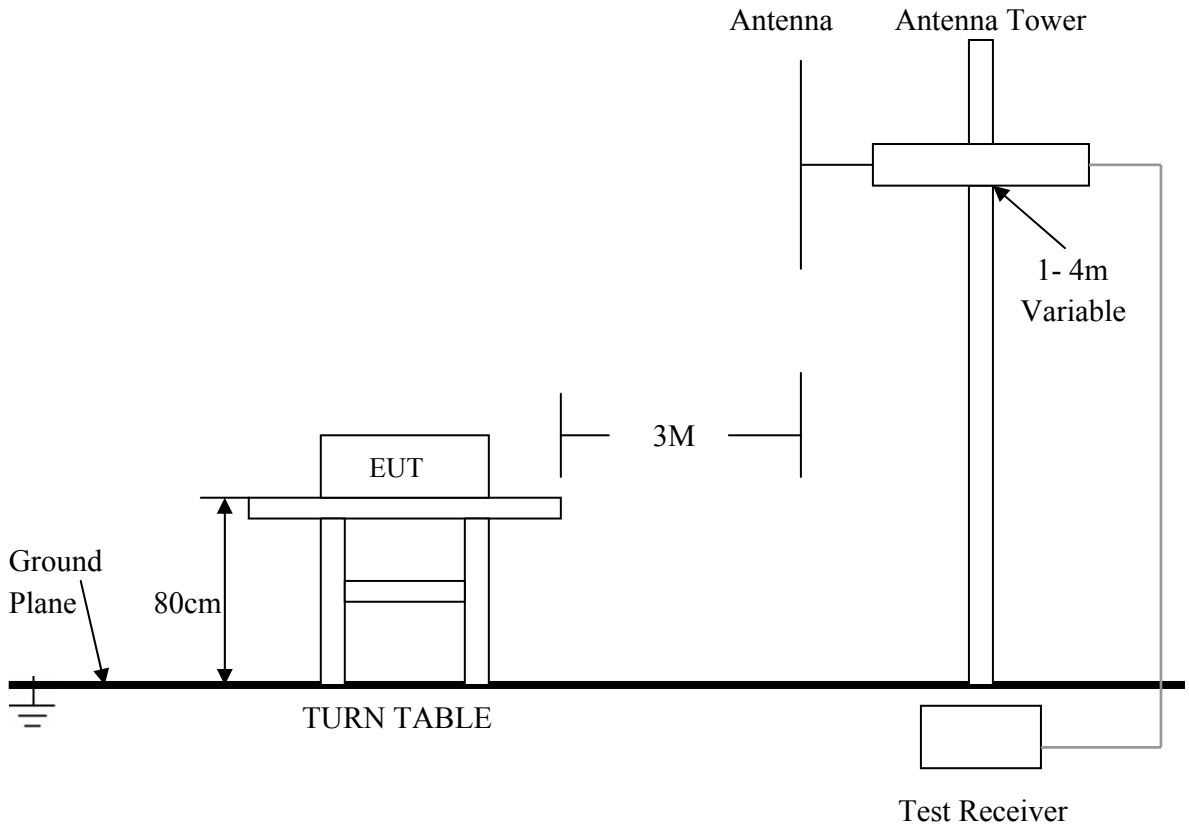
5. 1 Test Equipment

Please refer to Section 9 this report.

5. 2 Test Procedure

1. The EUT was tested according to ANSI C63.4 - 1992. The radiated test was performed at Shenzhen Academy of Metrology and Quality Inspection. This site is on file with the FCC laboratory division, Registration No. 97379.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-1992.
3. Applies to harmonics/spurious that fall in the restricted bands listed in Section 15.205. the maximum permitted average field strength is listed in Section 15.209.
4. For 9Khz≤frequencies≤150KHz: RBW=1KHz, VBW≥1KHz, Sweep=Auto.
5. For 150MHz≤frequencies≤30MHz: RBW=10KHz, VBW≥10KHz, Sweep=Auto.
6. For 30MHz≤frequencies≤1GHz: RBW=100KHz, VBW≥100KHz, Sweep=Auto.
7. For frequencies≥1GHz: RBW=1MHz, VBW=1MHz(Peak)&VBW=10Hz(Average), Sweep=Auto.
8. The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
9. The antenna polarization: Vertical polarization and horizontal polarization.

5. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing.

5. 4 Configuration of The EUT

Same as section 4 . 4 of this report

5. 5 EUT Operating Condition

Same as section 4 . 5 of this report.

5. 6 Transmitter Spurious Emission Limit

The Field Strength of emission from intentional radiators operated within these frequency bands shall comply with the following:

FUNDAMENTAL FREQUENCY (MHz)	FIELD STRENGTH LIMIT @10m OF FUNDMENTAL (mV/m)	FIELD STRENGTH LIMIT @ 10m OF HARMONICS (μV/m)
2400 - 2483.5	50	500

Note: The fundamental frequency shall not fall within any restricted frequency band specified in 15.205 All RF other emission that fall in the restricted bands shall not exceed the general radiated emission limits specified in @ 15.209(a).

FCC CFR 47, Part 15, Subpart C, Para 15.205(a) - Restricted Frequency Bands

MHz	MHz	MHz	GHz
0.090 - 0.110	162.0125 - 167.17	2310 - 2390	9.3 - 9.5
0.49 – 0.51	167.72 - 173.2	2483.5 - 2500	10.6 - 12.7
2.1735 - 2.1905	240 - 285	2655 - 2900	13.25 - 13.4
8.362 - 8.366	322 - 335.4	3260 - 3267	14.47 - 14.5
13.36 - 13.41	399.9 - 410	3332 - 3339	14.35 - 16.2
25.5 – 25.67	608 - 614	3345.8 - 3358	17.7 - 21.4
37.5 – 38.25	960 - 1240	3600 - 4400	22.01 - 23.12
73 - 75.4	1300 - 1427	4500 - 5250	23.6 - 24.0
108 – 121.94	1435 - 1626.5	5350 - 5460	31.2 - 31.8
123 – 138	1660 - 1710	7250 - 7750	36.43 - 36.5
149.9 – 150.05	1718.8 - 1722.2	8025 - 8500	Above 38.6
156.7 – 156.9	2200 - 2300	9000 - 9200	

FCC CFR 47, Part 15, Subpart C, Para 15.209(a)
-- Field Strength Limits within Restricted Frequency Bands --

FREQUENCY (MHz)	FIELD STRENGTH LIMITS (μV/m)	DISTANCE (Meters)
0.009 - 0.490	2,400 / F (KHz)	300
0.490 - 1.705	24,000 / F (KHz)	30
1.705 - 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

Calculation of Field Strength:

The field strength is calculated by adding the calibrated antenna factor and cable factor, and subtracting the Amplifier gain (if any) measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where FS = Field Strength ; RA= Receiver Reading; AF = Antenna Factor; CF = Cable Attenuation Factor;

AG = Amplifier Gain

Example: If a receiver reading of 60.0 dBuV is obtained, the antenna factor of 7.0dB/m and cable factor of 1.0dB are added, and the amplifier gain of 30 dB is subtracted. The actual field strength will be:

$$\text{Field Level} = 60 + 7.0 + 1.0 - 30 = 38.0 \text{ dBuV/m}$$

$$\text{Field Level} = 10^{(38/20)} = 79.43 \text{uV/m}$$

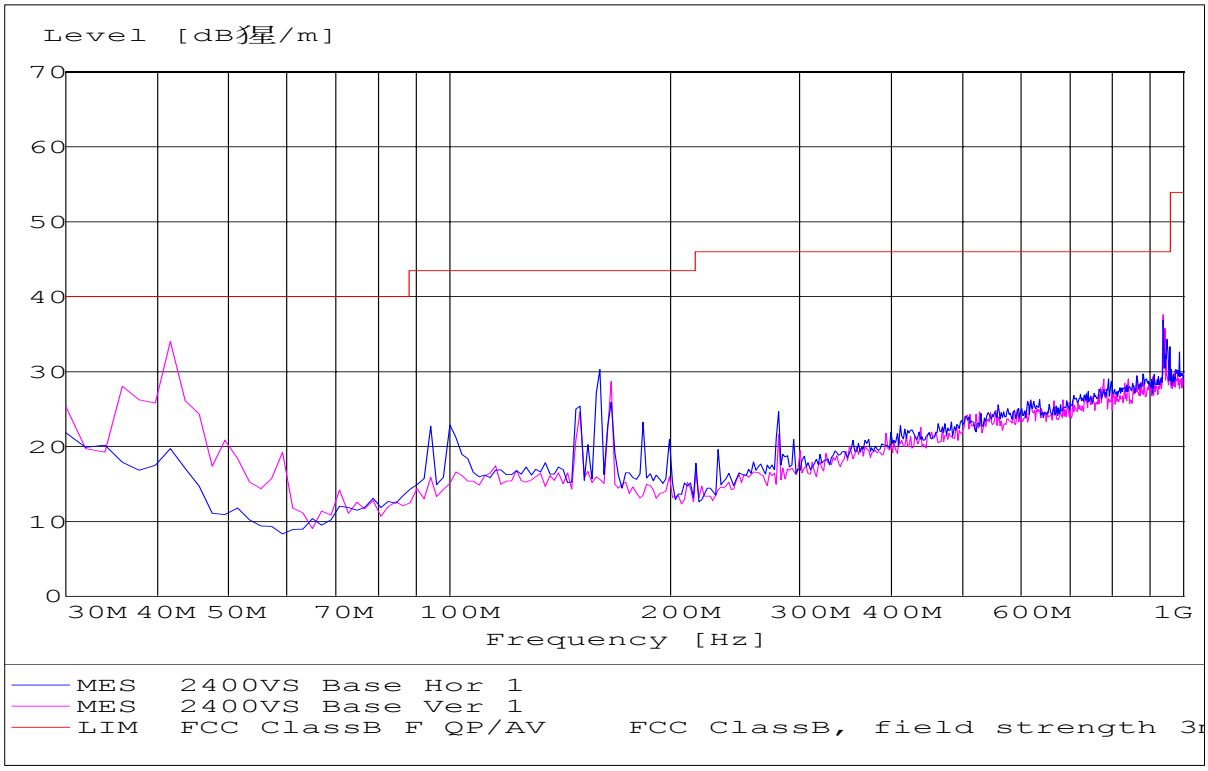
5. 7 Radiated Emission Test Result

A. Transmitter Radiated Emission from Base Transmitter@ Lowest Channel Frequency: 2402.548 MHz

Product : 2.4GHz Cordless Telephone
Test Item : Radiated Emission Data
Test Voltage : AC 120V/60Hz
Test Mode : Normal
Temperature : 24 ℃
Humidity : 52%RH
Test Result : PASS

FREQ. (MHz)	PEAK E-FIELD@3m (dBuV/m)	HORIZ / VERT	EMISSION LIMIT@3m (dBuV/m)	MARGIN (dB)
2402.55	88.6	HORIZ	94	-5.4
2402.55	86.2	VERT	94	-7.8
42.81	33.4	VERT	40	-6.6
165.60	29.6	HORIZ	43.5	-13.9
936.62	33.8	VERT	46	-12.2

Note: (1) All Readings are Peak value
(2) The average measurement was not performed when the peak measured data under the limit of average detection.
(3) The emissions were scanned from 30MHz to 25GHz and all emissions within 15 dB below the limits were recorded.

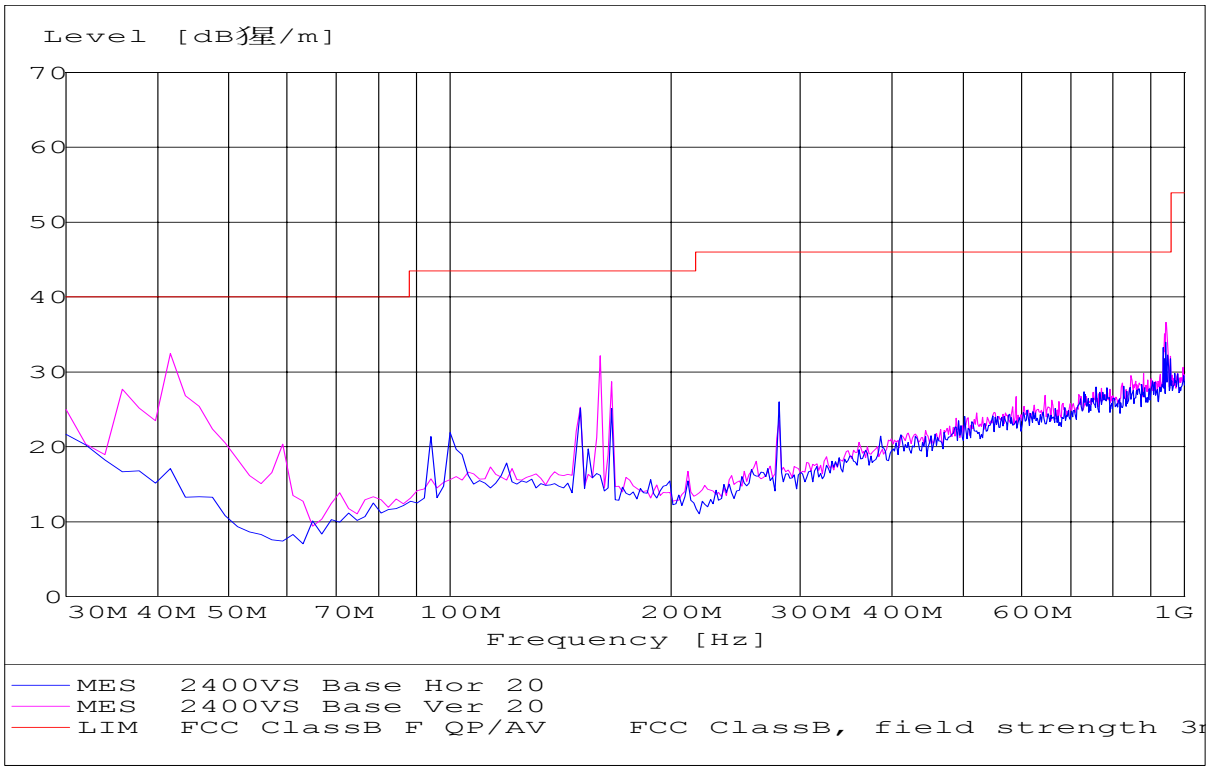


B. Transmitter Radiated Emission from Base Transmitter@ Middle Channel Frequency: 2403.498 MHz

Product : 2.4GHz Cordless Telephone
Test Item : Radiated Emission Data
Test Voltage : AC 120V/60Hz
Test Mode : Normal
Temperature : 24 ℃
Humidity : 52%RH
Test Result : PASS

FREQ. (MHz)	PEAK E-FIELD@3m (dBuV/m)	HORIZ / VERT	EMISSION LIMIT@3m (dBuV/m)	MARGIN (dB)
2403.50	87.3	HORIZ	94	-6.7
2403.50	86.9	VERT	94	-7.1
42.69	32.6	VERT	40	-7.4
168.26	31.6	VERT	43.5	-11.9
937.62	33.8	VERT	46	-12.2

Note: (1) All Readings are Peak value
(2) The average measurement was not performed when the peak measured data under the limit of average detection.
(3) The emissions were scanned from 30MHz to 25GHz and all emissions within 15 dB below the limits were recorded.

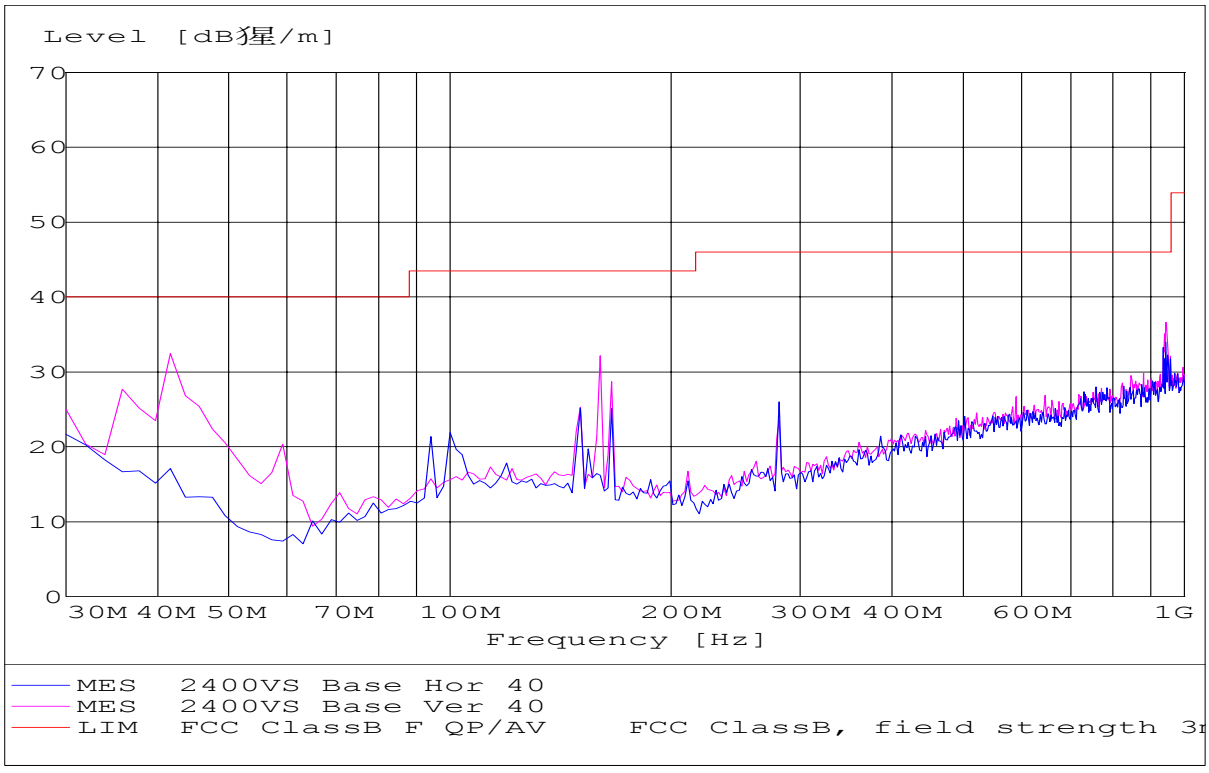


C. Transmitter Radiated Emission from Base Transmitter@ Highest Channel Frequency: 2404.448 MHz

Product : 2.4GHz Cordless Telephone
Test Item : Radiated Emission Data
Test Voltage : AC 120V/60Hz
Test Mode : Normal
Temperature : 24 ℃
Humidity : 52%RH
Test Result : PASS

FREQ. (MHz)	PEAK E-FIELD@3m (dBuV/m)	HORIZ / VERT	EMISSION LIMIT@3m (dBuV/m)	MARGIN (dB)
2404.45	87.8	HORIZ	94	-6.2
2404.45	87.3	VERT	94	-6.7
43.28	32.6	VERT	40	-7.4
169.36	32.1	VERT	43.5	-11.4
939.12	34.8	VERT	46	-11.2

Note: (1) All Readings are Peak value
(2) The average measurement was not performed when the peak measured data under the limit of average detection.
(3) The emissions were scanned from 30MHz to 25GHz and all emissions within 15 dB below the limits were recorded.

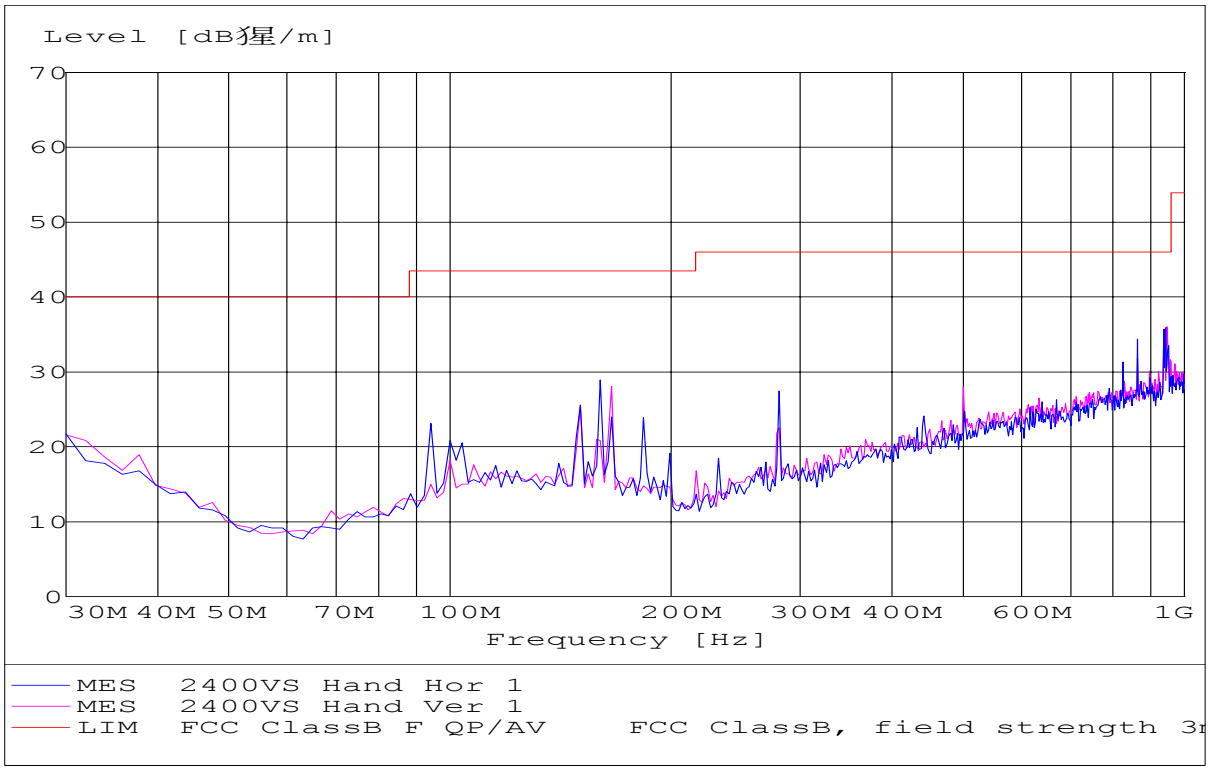


D. Transmitter Radiated Emission from Handset Transmitter@ Lowest Channel Frequency: 2473.999 MHz

Product : 2.4GHz Cordless Telephone
Test Item : Radiated Emission Data
Test Voltage : Power by battery
Test Mode : Normal
Temperature : 24 ℃
Humidity : 52%RH
Test Result : PASS

FREQ. (MHz)	PEAK E-FIELD@3m (dBuV/m)	HORIZ / VERT	EMISSION LIMIT@3m (dBuV/m)	MARGIN (dB)
2474.00	88.6	HORIZ	94	-5.4
2474.00	87.9	VERT	94	-6.1
863.26	34.1	HORIZ	46	-11.9
939.31	34.3	VERT	46	-11.7
938.27	35.2	HORIZ	46	-10.8

Note: (1) All Readings are Peak value
(2) The average measurement was not performed when the peak measured data under the limit of average detection.
(3) The emissions were scanned from 30MHz to 25GHz and all emissions within 15 dB below the limits were recorded.

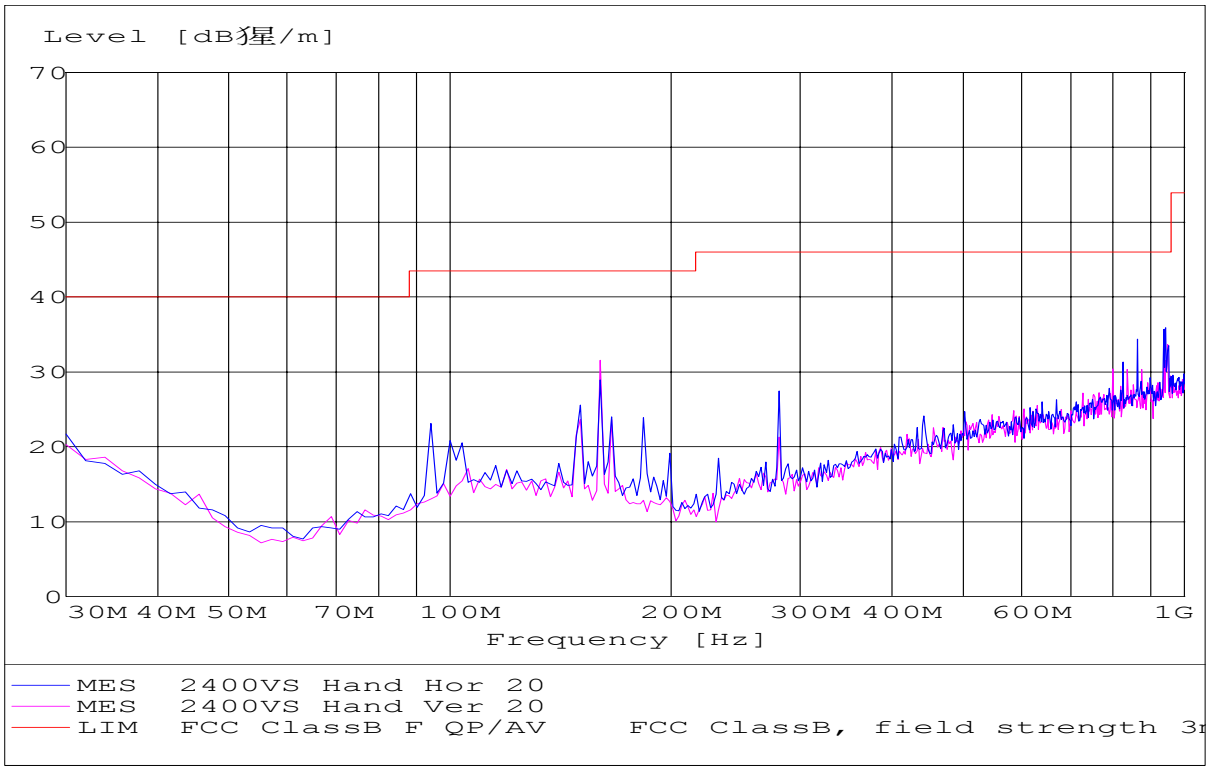


E. Transmitter Radiated Emission from Handset Transmitter@ Middle Channel Frequency: 2474.949 MHz

Product : 2.4GHz Cordless Telephone
Test Item : Radiated Emission Data
Test Voltage : Power by battery
Test Mode : Normal
Temperature : 24 ℃
Humidity : 52%RH
Test Result : PASS

FREQ. (MHz)	PEAK E-FIELD@3m (dBuV/m)	HORIZ / VERT	EMISSION LIMIT@3m (dBuV/m)	MARGIN (dB)
2474.95	89.7	HORIZ	94	-4.3
2474.95	88.3	VERT	94	-5.7
172.91	32.5	VERT	43.5	-11.0
869.31	35.3	HORIZ	46	-10.7
932.27	36.8	HORIZ	46	-9.2

Note: (1) All Readings are Peak value
(2) The average measurement was not performed when the peak measured data under the limit of average detection.
(3) The emissions were scanned from 30MHz to 25GHz and all emissions within 15 dB below the limits were recorded.

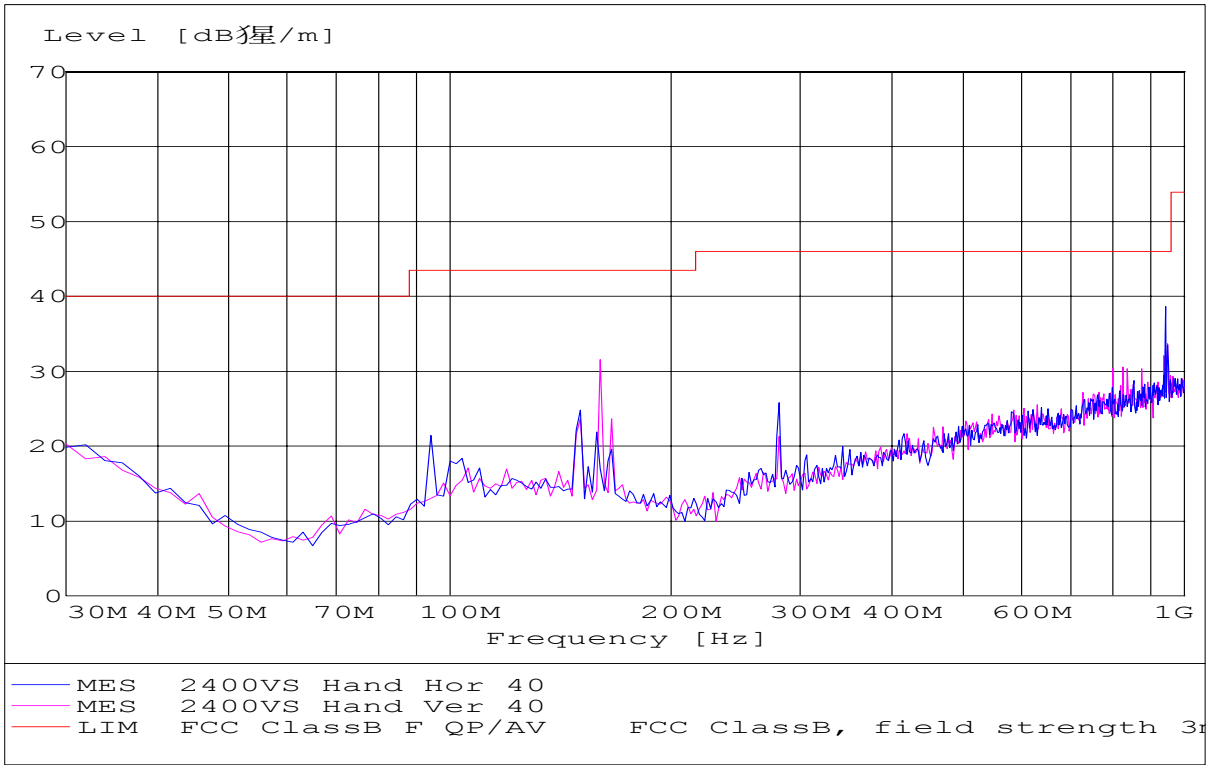


F. Transmitter Radiated Emission from Handset Transmitter@Highest Channel Frequency: 2475.899 MHz

Product : 2.4GHz Cordless Telephone
Test Item : Radiated Emission Data
Test Voltage : Power by battery
Test Mode : Normal
Temperature : 24 ℃
Humidity : 52%RH
Test Result : PASS

FREQ. (MHz)	PEAK E-FIELD@3m (dBuV/m)	HORIZ / VERT	EMISSION LIMIT@3m (dBuV/m)	MARGIN (dB)
2475.90	89.2	HORIZ	94	-4.8
2475.90	88.6	VERT	94	-5.4
176.89	30.9	VERT	43.5	-12.5
927.61	37.6	HORIZ	46	-8.4

Note: (1) All Readings are Peak value
(4) The average measurement was not performed when the peak measured data under the limit of average detection.
(5) The emissions were scanned from 30MHz to 25GHz and all emissions within 15 dB below the limits were recorded.



6. Band Edge

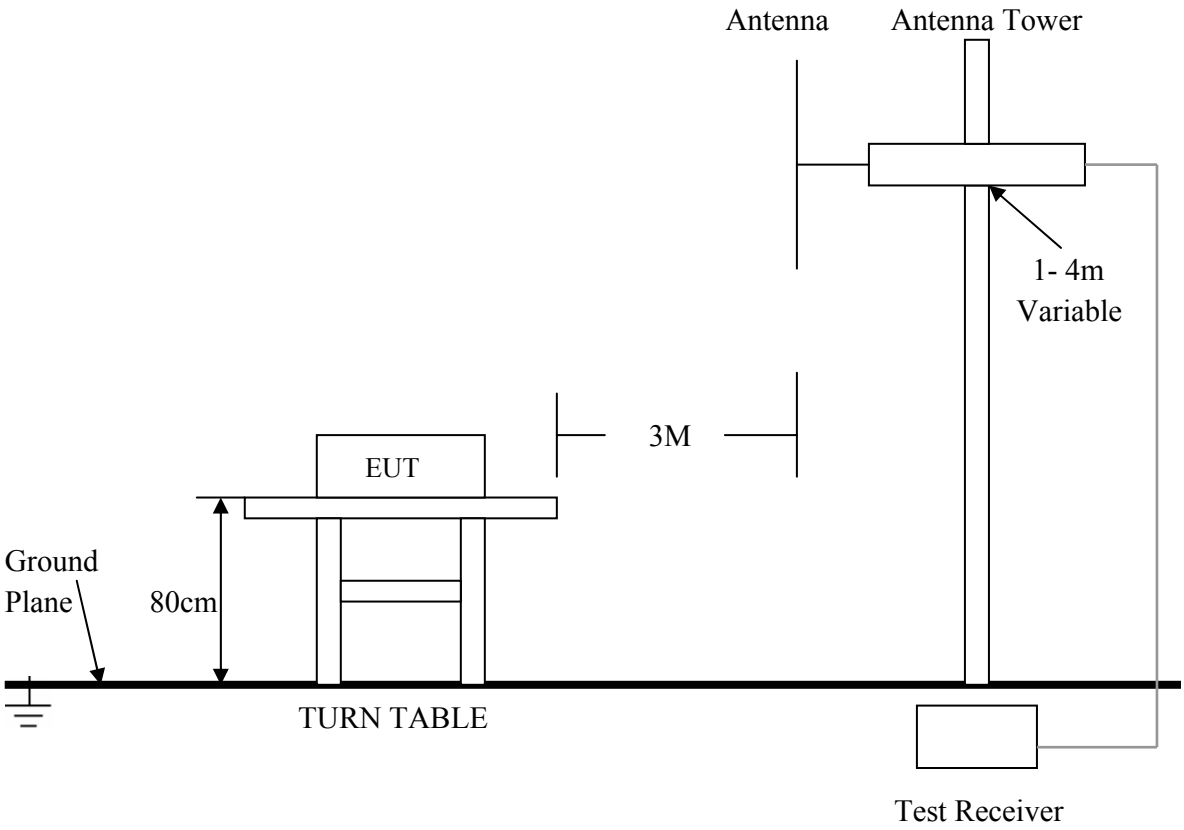
6. 1 Test Equipment

Please refer to Section 9 this report.

6. 2 Test Procedure

Please refer to Section 5.2 this report.

6. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

6. 4 Configuration of The EUT

Same as section 4 . 4 of this report

6. 5 EUT Operating Condition

Same as section 4 . 5 of this report.

6. 6 Band Edge Limit

From the following plots, they show that the fundamental emissions are confined in the specified band and they are at least 50 dB below the carrier level at band edge (2400.0 and 2483.5 MHz). It meets the requirement of section 15.249(c).

6. 7 Band Edge Test Result

Product	: 2.4GHz Cordless Telephone
Test Item	: Band Edge Data
Test Mode	: Normal Operation
Temperature	: 24 ℃
Humidity	: 52%RH

Note: Please refer to attachment- Test Report Band Edge Plot

7. Photos of Testing

7. 1 EUT Test Photographs

Note: Please refer to attachment- Test Setup Photos

7. 2 EUT Detailed Photographs

Note: Please refer to attachment- External Photos & Internal Photos 1,2

8. FCC ID Label

FCC ID: PJU2400-01

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Privacy of communications may not be ensured when using this phone.

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

Base Unit Bottom View/Proposed FCC Mark Location

Handset Unit Bottom View/Proposed FCC Mark Location

9. Test Equipment

The following test equipments were used during the radiated & conducted emission test:

Equipment/ Facilities	Manufacturer	Model #	Serial No.	Date of Cal.	Due Date
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb27, 2002	Feb 27, 2003
AMN	Rohde & Schwarz	ESH3-Z5	100002	Feb 01, 2002	Feb 01, 2003
LISN	Kyoritsu	KNW-407	8-1441-8	Feb 23, 2002	Feb 23, 2003
EMI Test Receiver	Rohde & Schwarz	ESI26	838786/013	Feb 01, 2002	Feb 01, 2003
Bilog Antenna	Chase	CBL6112B	2591	Feb 01, 2002	Feb 01, 2003
Horn Antenna	Rohde & Schwarz	HF906	100014	Feb 01, 2002	Feb 01, 2003
3m Semi-Anechoic Chamber	Albatross Projects	9mX6mX6m	N/A	Feb 01, 2002	Feb 01, 2003