# RADIO TEST REPORT

## Test Report No. : 27BE0153-HO-A

| | | |
|---|---|---|
| **Applicant** | : | **Panasonic Communications Co., Ltd.** |
| **Type of Equipment** | : | **Cordless Telephone (Handset)** |
| **Model No.** | : | **KX-TGA600 (Handset)** |
| **FCC ID** | : | **ACJ96NKX-TG6051** |
| **Test standard** | : | **FCC Part 15 Subpart C**<br>**Section 15.207, Section 15.247: 2006** |
| **Test Result** | : | **Complied** |

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.

**Date of test:**

October 2 to 12, 2006

**Tested by:**

Kenichi Adachi
EMC Services

Shinya Watanabe
EMC Services

**Approved by :**

Hironobu Shimoji
Group Leader of EMC Services

NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address, http://ulapex.jp/emc/nvlap.htm

**UL Apex Co., Ltd.**
**Head Office EMC Lab.**
**4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN**
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# SECTION 1: Client information

| | |
|---|---|
| Company Name | Panasonic Communications Co., Ltd. |
| Brand name | Panasonic |
| Address | 1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka, 812-8531 Japan |
| Telephone Number | +81-92-477-1405 |
| Facsimile Number | +81-92-477-1487 |
| Contact Person | Kunihiko Nawata |

# SECTION 2: Equipment under test (E.U.T.)

## 2.1 Identification of E.U.T.

| | |
|---|---|
| Type of Equipment | Cordless Telephone (Handset) |
| Model No. | KX-TGA600(Handset) |
| Serial No. | 1, 2 |
| Country of Manufacture | Japan |
| Condition of EUT | Engineering prototype<br>(Not for sale: This sample is equivalent to mass-produced items.) |
| Operation Clock | Main clock : 13.824 MHz |
| Receipt Date of Sample | September 29, 2006 |
| Modification of EUT | No modification by the test lab. |

## 2.2 Product Description

| | |
|---|---|
| Equipment Type | Transceiver |
| Frequency band | Lower Channel : 5759.702MHz<br>Upper Channel : 5838.187MHz |
| Bandwidth & Channel spacing | Bandwidth: 79MHz<br>Channel spacing: 892kHz |
| Type of Modulation | FHSS |
| Antenna Type | 5/8 lambda Pattern-Antenna |
| Antenna Gain | 4dBi Typ. |
| Power Supply (RF Part) | DC3.6V |
| Method of Frequency Generation | Synthesizer |

# SECTION 3: Test specification, procedures & results

## 3.1 Test Specification

| | | |
|---|---|---|
| Test Specification | : | FCC Part15 Subpart C : 2006 |
| Title | : | FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators<br>Section 15.207 Conducted limits : 2006<br>Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz : 2006 |

**FCC 15.31 (e)**
This EUT provides stable voltage(DC3.6V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

**FCC Part 15.203 Antenna requirement**
It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

### 3.2 Procedures and results

**[FHSS]**

| No. | Item | Test Procedure | Specification | Remarks | Deviation | Worst Margin*0) | Results |
|---|---|---|---|---|---|---|---|
| 1 | Conducted emission | **FCC:** ANSI C63.4:2003 7. AC powerline conducted emission measurements | **FCC:** Section 15.207 | - | N/A | 30.3dB, AV 4.48001MHz Phase N | Complied |
| 2 | Carrier Frequency Separation | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section 15.247(a)(1) | Conducted | N/A | See data. | Complied |
| 3 | 20dB Bandwidth | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section15.247(a)(1) | Conducted | N/A | | Complied |
| 4 | Number of Hopping Frequency | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section 15.247(a)(1)(ii) | Conducted | N/A | | Complied |
| 5 | Dwell time | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section 15.247(a)(1)(ii) | Conducted | N/A | | Complied |
| 6 | Maximum Peak Output Power | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section 15.247(b)(1) | Conducted | N/A | | Complied |
| 7 | Band Edge Compliance | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section 15.247(d) | Conducted | N/A | | Complied |
| 8 | Spurious Emission | **FCC:** ANSI C63.4:2003 13. Measurement of intentional radiators | **FCC:** Section 15.247(d) | Conducted/ Radiated | N/A | (Tx 5759.702MHz) 5.7dB, 69.130MHz, Horizontal | Complied |

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.
*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*These tests were also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

*These tests were performed without any deviations from test procedure except for additions or exclusions.

### 3.3 Addition to standards

No addition, deviation, nor exclusion has been made from standards.

### 3.4 Uncertainty

Conducted Emission
The measurement uncertainty (with a 95% confidence level) for this test is ±2.66dB.
The data listed in this test report has enough margin, more than the site margin.

Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ±4.59dB(3m)/ ±4.58dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ±4.62dB(3m)/ ±4.60dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ±5.27dB.
The data listed in this test report has enough margin, more than the site margin.

Other test except Conducted Emission and Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test is ±3.0dB.

### 3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116 Facsimile : +81 596 24 8124

| | FCC Registration Number | IC Registration Number | Width x Depth x Height (m) | Size of reference ground plane (m) / horizontal conducting plane | Other rooms |
|---|---|---|---|---|---|
| No.1 semi-anechoic chamber | 313583 | IC4247A | 19.2 x 11.2 x 7.7m | 7.0 x 6.0m | Preparation room |
| No.2 semi-anechoic chamber | 655103 | IC4247A-2 | 7.5 x 5.8 x 5.2m | 4.0 x 4.0m | - |
| No.3 semi-anechoic chamber | 148738 | IC4247A-3 | 12.0 x 8.5 x 5.9m | 6.8 x 5.75m | |
| No.3 shielded room | - | - | 4.0 x 6.0 x 2.7m | N/A | - |
| No.4 semi-anechoic chamber | 134570 | IC4247A-4 | 12.0 x 8.5 x 5.9m | 6.8 x 5.75m | - |
| No.4 shielded room | - | - | 4.0 x 6.0 x 2.7m | N/A | - |
| No.5 semi-anechoic chamber | - | - | 6.0 x 6.0 x 3.9m | N/A | - |
| No.6 shielded room | - | - | 4.0 x 4.5 x 2.7m | 2.0 x 2.0 m | - |
| No.6 measurement room | - | - | 4.75 x 5.4 x 3.0m | 4.75 x 5.4 m | - |
| No.7 shielded room | - | - | 4.7 x 7.5 x 2.7m | 4.7 x 7.5m | - |
| No.8 measurement room | - | - | 3.1 x 5.0 x 2.7m | N/A | - |

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3 and No.4 semi-anechoic chambers and No.7 shielded room.

### 3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

# SECTION 4: Operation of E.U.T. during testing

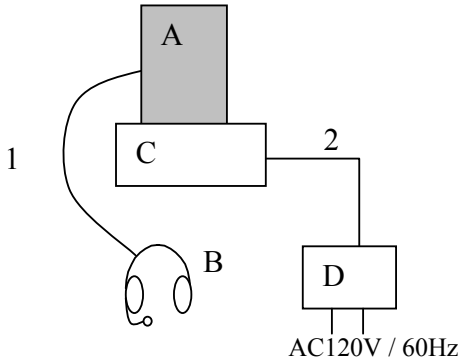
## 4.1 Operating Modes

The mode is used : Transmitting mode
Low Channel : 5759.702MHz
Mid Channel : 5798.053MHz
High Channel : 5838.187MHz

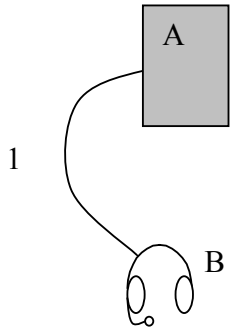
**[Remarks]**
***This EUT has 2 antennas (Antenna 1 and 2). The Antenna 2 is used for the antenna terminal tests and Radiated emission test since Antenna 2 has higher output power level than Antenna 1. As for Conducted emission test, both Antenna 1 and 2 were used.***

## 4.2 Configuration and peripherals

[ for Conducted emission test ]




[ for Other test ]




* Cabling and setup were taken into consideration and test data was taken under worse case conditions.

**Description of EUT and Support equipment**

| No. | Item | Model number | Serial number | Manufacturer | Remarks |
|---|---|---|---|---|---|
| A | Cordless Telephone (Handset) | KX-TGA600 (Handset) | 1 *1), 2 *2) | Panasonic Communications Co., Ltd. | EUT |
| B | Headphone | KX-TCA88 | - | Panasonic Communications Co., Ltd. | - |
| C | Battery Charger | PQLV30050ZA | - | Panasonic Communications Co., Ltd. | - *3) |
| D | AC Adapter | PQLV213 | 0628E | Panasonic Communications Co., Ltd. | - *3) |

*1) Used for Antenna Terminal tests
*2) Used for Conducted and Radiated emission tests
*3) The test was made without Battery charger in Radiated emission test since the test result (EUT without Battery charger) has a higher output power level.

**List of cables used**

| No. | Name | Length (m) | Shield | |
|---|---|---|---|---|
| | | | Cable | Connector |
| 1 | Headset Cable | 1.8 | Unshielded | Unshielded |
| 2 | DC Cable *3) | 1.8 | Unshielded | Unshielded |

## SECTION 5: Conducted Emission

**Test Procedure and conditions**

EUT was placed on a urethane platform of nominal size, 1.0m by 0.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)
I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber or a Measurement Room.
The EUT was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

**Detector : CISPR quasi-peak and average detector (IF BW 9 kHz)**
**Measurement range : 0.15-30MHz**
**Test data : APPENDIX 2**
**Test result : Pass**

## SECTION 6: Spurious Emission

**[Conducted]**
**Test Procedure**
The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.
**Test data : APPENDIX 2**
**Test result : Pass**

**[Radiated]**
**Test Procedure**
EUT was placed on a urethane platform of nominal size, 1.0m by 1.0m, raised 80cm above the conducting ground plane.
The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz) and 0.5m (Upper 26.5GHz) and 0.2m (Upper 30GHz).
The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer (in linear mode).
The test was made with the detector (RBW/VBW) in the following table.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

**20dBc was applied to the frequency over the limit of FCC 15.209 and outside the restricted band of FCC15.205.**

| Frequency | Below 1GHz | Above 1GHz |
|---|---|---|
| Instrument used | Test Receiver / Spectrum Analyzer | Spectrum Analyzer |
| Detector<br>IF Bandwidth | QP: BW 120kHz(T/R)<br>20dBc : RBW: 100kHz<br>VBW: 300kHz (S/A) | PK: RBW:1MHz/VBW: 1MHz<br>AV: RBW:1MHz/VBW:10Hz<br>20dBc : RBW:100kHz/VBW:300kHz |

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

**Test data : APPENDIX 2**
**Test result : Pass**

## SECTION 7: Bandwidth

**Test Procedure**

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

**Test data : APPENDIX 2**
**Test result : Pass**

## SECTION 8: Maximum Peak Output Power

**Test Procedure**
The Maximum Peak Output Power was measured with a power meter (tested bandwidth: 50MHz) connected to the antenna port.

**Test data : APPENDIX 2**
**Test result : Pass**

## SECTION 9: Carrier Frequency Separation

**Test Procedure**

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

**Test data : APPENDIX 2**
**Test result : Pass**

## SECTION 10: Number of Hopping Frequency

**Test Procedure**

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

**Test data : APPENDIX 2**
**Test result : Pass**

## SECTION 11: Dwell time

**Test Procedure**

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

**Test data : APPENDIX 2**
**Test result : Pass**

## APPENDIX 1: Photographs of test setup

### Conducted Emission

This page has been submitted in a separate sheet.

## Spurious Emission (Radiated)

This page has been submitted in a separate sheet.

## Worst Case Position (Horizontal: Z-axis/ Vertical:Y-axis)

This page has been submitted in a separate sheet.

# APPENDIX 2: Data of EMI test

## Conducted Emission

### DATA OF CONDUCTED EMISSION TEST

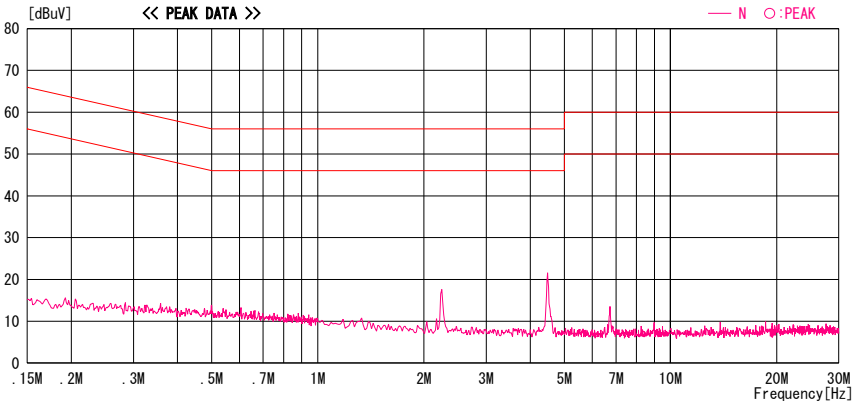
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 05:37:08

Applicant : Panasonic Communications Co., Ltd.
Kind of EUT : Cordless Telephone (Handset)
Model No. : KX-TGA600 (Handset)
Serial No. : 2

Report No. : 27BE0153-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24 deg.C. / 57 %
Operator : Motoya Imura

Mode / Remarks : Tx 5759.702MHz : Ant 1,

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



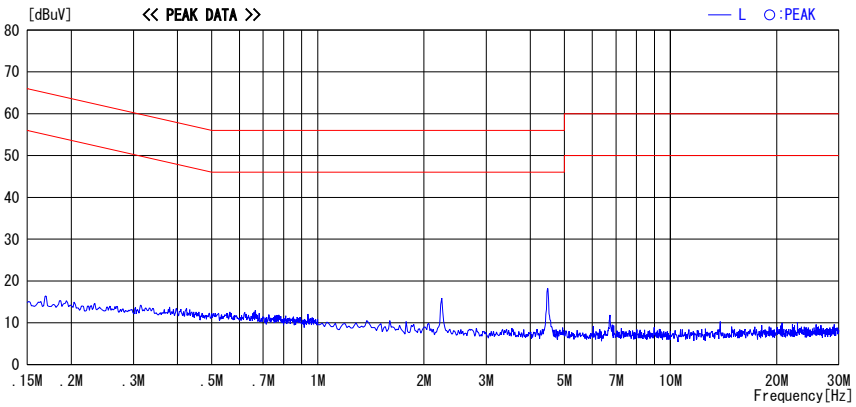




CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

# DATA OF CONDUCTED EMISSION TEST

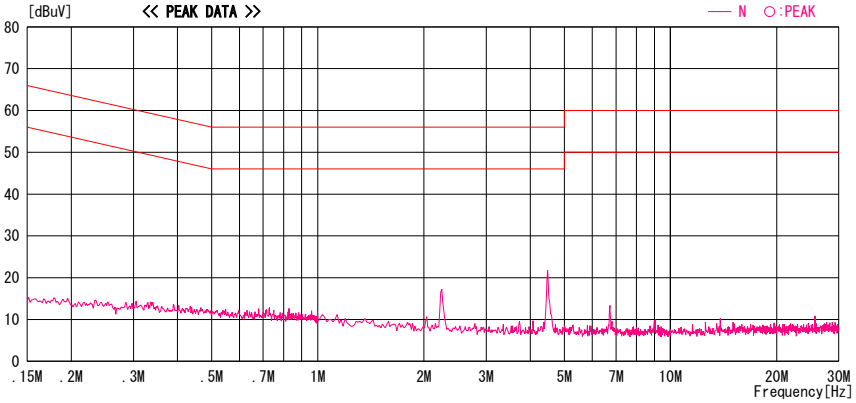
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 06:22:33

Applicant : Panasonic Communications Co., Ltd.
Kind of EUT : Cordless Telephone (Handset)
Model No. : KX-TGA600 (Handset)
Serial No. : 2

Report No. : 27BE0153-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24 deg.C. / 57 %
Operator : Motoya Imura

Mode / Remarks : Tx 5759.702MHz : Ant 2,

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



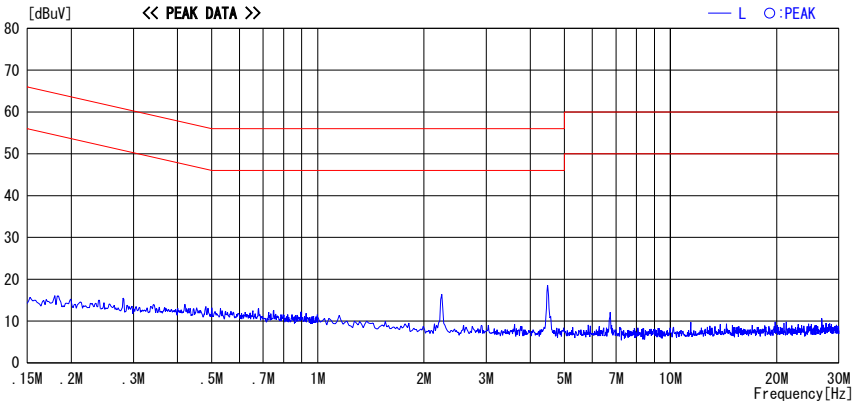




CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

# DATA OF CONDUCTED EMISSION TEST

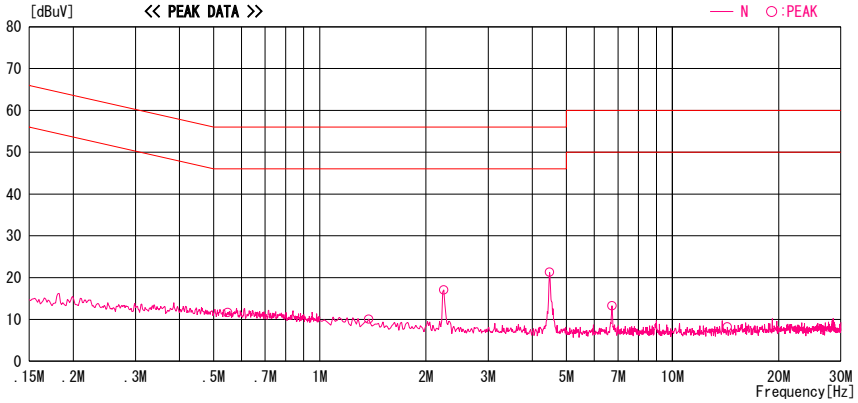
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 05:47:24

Applicant : Panasonic Communications Co., Ltd.
Kind of EUT : Cordless Telephone (Handset)
Model No. : KX-TGA600 (Handset)
Serial No. : 2

Report No. : 27BE0153-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24 deg.C. / 57 %
Operator : Motoya Imura

Mode / Remarks : Tx 5798.053MHz : Ant 1,

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



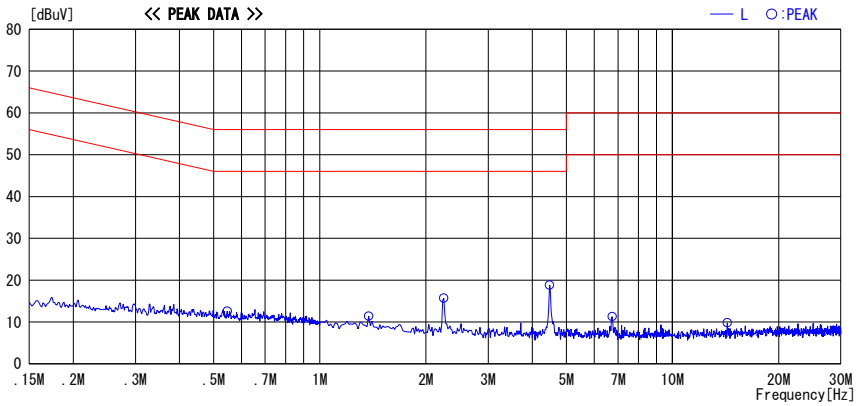




CHART:WITH FACTOR,Peak hold data,Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

# DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 05:47:24

Applicant : Panasonic Communications Co., Ltd.
Kind of EUT : Cordless Telephone (Handset)
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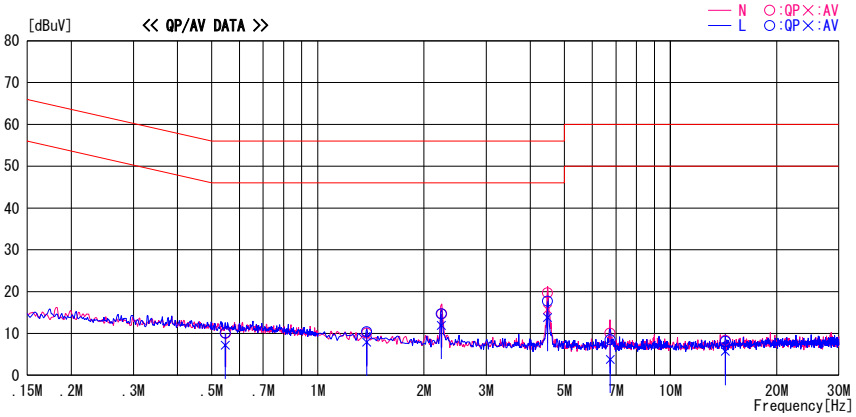
Operator : Motoya Imura

Mode / Remarks : Tx 5798.053MHz : Ant 1,

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)




| Frequency | Reading Level | | Corr. | Results | | Limit | | Margin | | Phase |
|---|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | Factor | QP | AV | QP | AV | QP | AV | |
| [MHz] | [dBuV] | [dBuV] | [dB] | [dBuV] | [dBuV] | [dBuV] | [dBuV] | [dB] | [dB] | |
| 0.54667 | 9.7 | 6.8 | 0.4 | 10.1 | 7.2 | 56.0 | 46.0 | 45.9 | 38.8 | L |
| 0.54808 | 9.6 | ----- | 0.4 | 10.0 | ----- | 56.0 | ----- | 46.0 | ----- | N |
| 1.37500 | 9.6 | ----- | 0.5 | 10.1 | ----- | 56.0 | ----- | 45.9 | ----- | N |
| 1.37500 | 9.9 | 7.4 | 0.5 | 10.4 | 7.9 | 56.0 | 46.0 | 45.6 | 38.1 | L |
| 2.24000 | 14.2 | 11.4 | 0.5 | 14.7 | 11.9 | 56.0 | 46.0 | 41.3 | 34.1 | L |
| 2.24500 | 14.2 | ----- | 0.5 | 14.7 | ----- | 56.0 | ----- | 41.3 | ----- | N |
| 4.47970 | 16.9 | 13.0 | 0.8 | 17.7 | 13.8 | 56.0 | 46.0 | 38.3 | 32.2 | L |
| 4.48001 | 18.9 | 14.9 | 0.8 | 19.7 | 15.7 | 56.0 | 46.0 | 36.3 | 30.3 | N |
| 6.72999 | 9.1 | ----- | 1.0 | 10.1 | ----- | 60.0 | ----- | 49.9 | ----- | N |
| 6.74499 | 7.5 | 2.8 | 1.0 | 8.5 | 3.8 | 60.0 | 50.0 | 51.5 | 46.2 | L |
| 14.30006 | 6.6 | 4.2 | 1.5 | 8.1 | 5.7 | 60.0 | 50.0 | 51.9 | 44.3 | L |
| 14.30006 | 6.8 | ----- | 1.5 | 8.3 | ----- | 60.0 | ----- | 51.7 | ----- | N |

CHART:WITH FACTOR,Peak hold data,Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

# DATA OF CONDUCTED EMISSION TEST

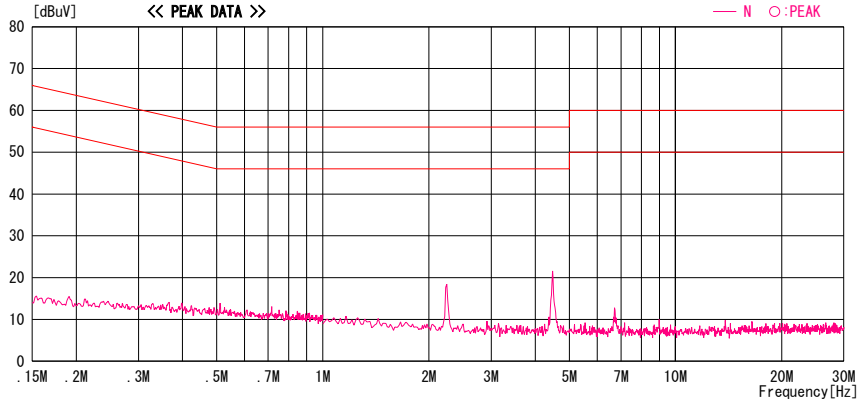
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 06:17:09

Applicant : Panasonic Communications Co., Ltd.
Kind of EUT : Cordless Telephone (Handset)
Model No. : KX-TGA600 (Handset)
Serial No. : 2

Report No. : 27BE0153-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24 deg.C. / 57 %
Operator : Motoya Imura

Mode / Remarks : Tx 5798.053MHz : Ant 2,

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



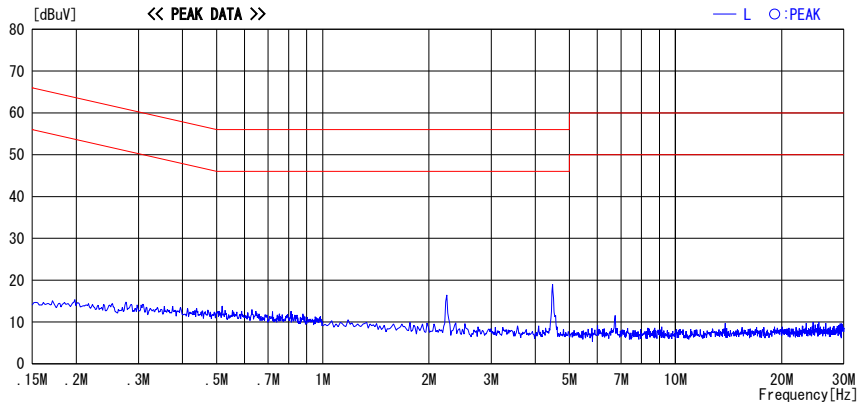




CHART:WITH FACTOR,Peak hold data,Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

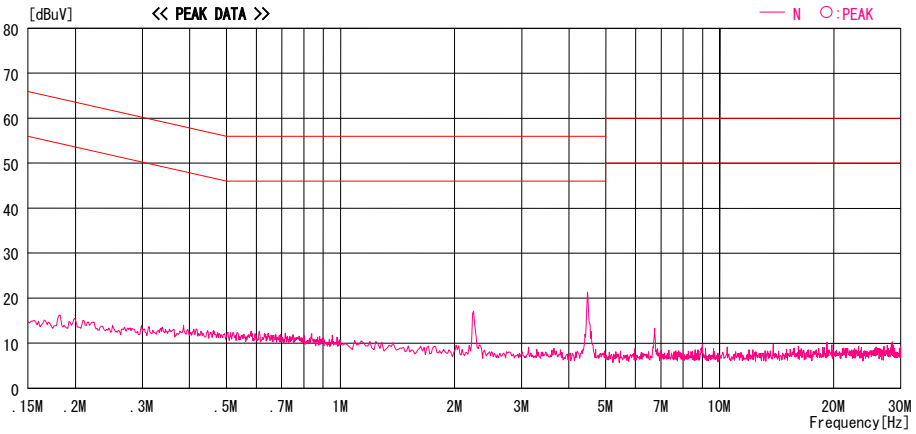
# DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 05:47:24

| | | | |
|---|---|---|---|
| Applicant | : Panasonic Communications Co., Ltd. | Report No. | : 27BE0153-HO |
| Kind of EUT | : Cordless Telephone (Handset) | Power | : AC 120V / 60Hz |
| Model No. | : KX-TG6051 (Handset) | Temp./Humi. | : 24 deg.C. / 57 % |
| Serial No. | : 2 | Operator | : Kenichi Adachi |

Mode / Remarks : Tx5838.187MHz : Ant 1

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



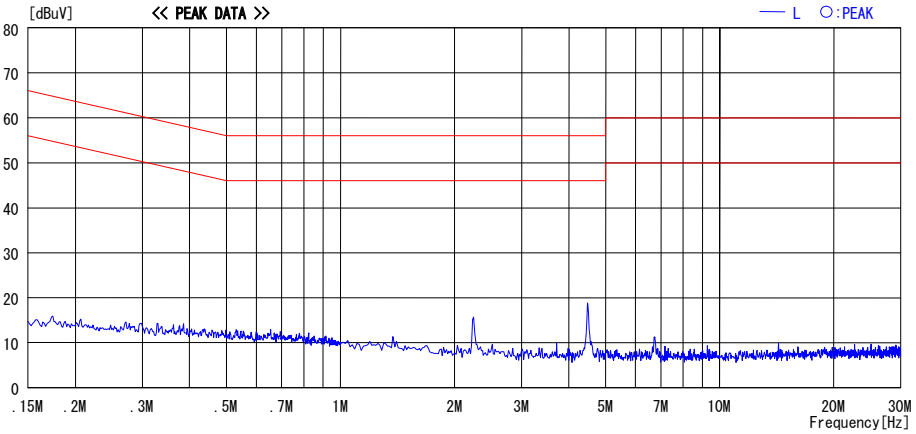




CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

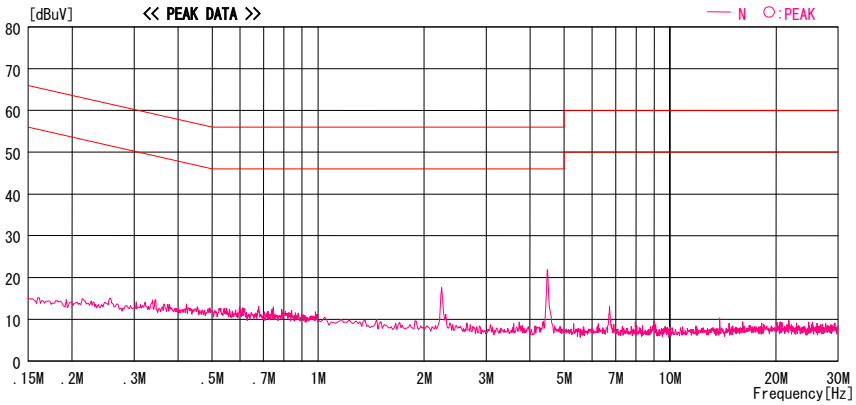
# DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Shielded Room
Date : 2006/10/12 05:43:29

| | | | |
|---|---|---|---|
| Applicant | : Panasonic Communications Co., Ltd. | Report No. | : 27BE0153-HO |
| Kind of EUT | : Cordless Telephone (Handset) | Power | : AC 120V / 60Hz |
| Model No. | : KX-TGA600 (Handset) | Temp./Humi. | : 24 deg.C. / 57 % |
| Serial No. | : 2 | Operator | : Motoya Imura |

Mode / Remarks : Tx 5838.187MHz : Ant 2,

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



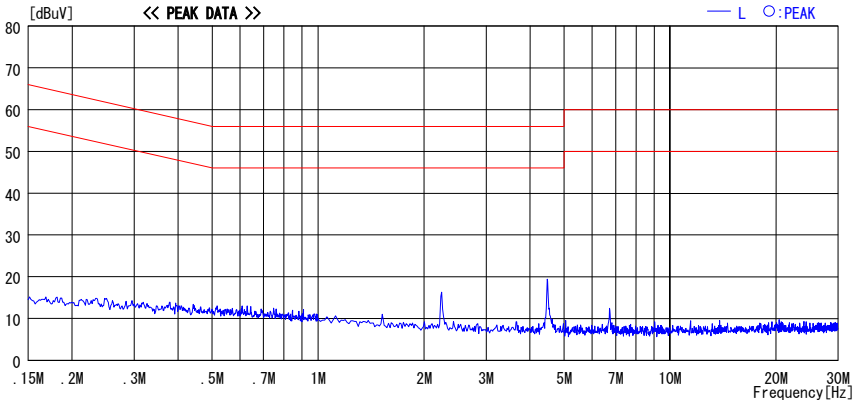




CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

# Carrier Frequency Separation

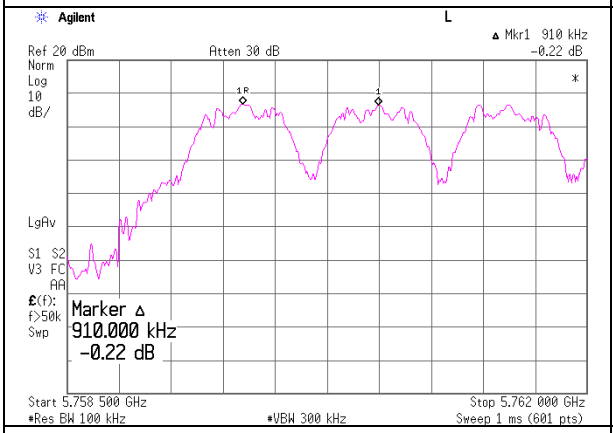
UL-Apex Co.,Ltd.
Head Office EMC Lab. No.6 Shielded Room

| | | | | | |
|---|---|---|---|---|---|
| Company | : | Panasonic Communications Co., Ltd. | Regulation | : | FCC 15.247(a)(1)(ii) |
| Equipment | : | Cordless Telephone (Handset) | Test Distance | : | - |
| Model | : | KX-TGA600 (Handset) | Date | : | 10/04/2006 |
| S/N | : | 1 | Temperature | : | 26 deg.C. |
| Power | : | DC3.6V | Humidity | : | 57 % |
| Mode | : | Tx (Hopping on) | Engineer | : | Kenichi Adachi |

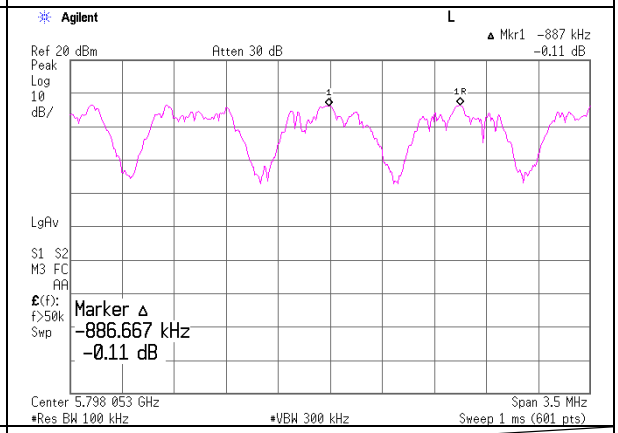
| Ch | Freq. [MHz] | Channel separation [MHz] | Limit |
|---|---|---|---|
| Low | 5759.702 | 0.910 | > 0.616MHz (20dB Bandwidth) or 0.025MHz (whichever is greater) |
| Mid | 5798.053 | 0.887 | > 0.612MHz (20dB Bandwidth) or 0.025MHz (whichever is greater) |
| High | 5838.187 | 0.846 | > 0.622MHz (20dB Bandwidth) or 0.025MHz (whichever is greater) |

# Carrier Frequency Separation

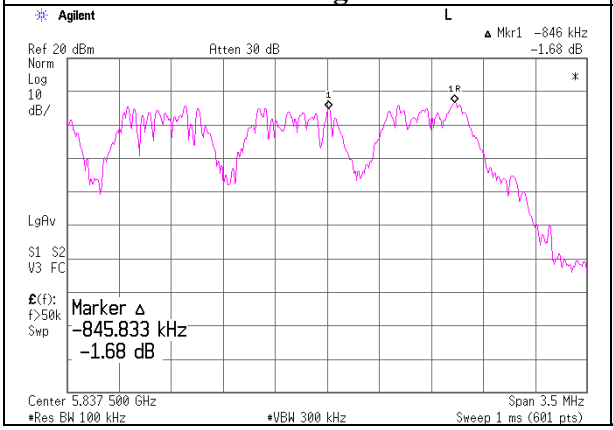
## Ch:Low

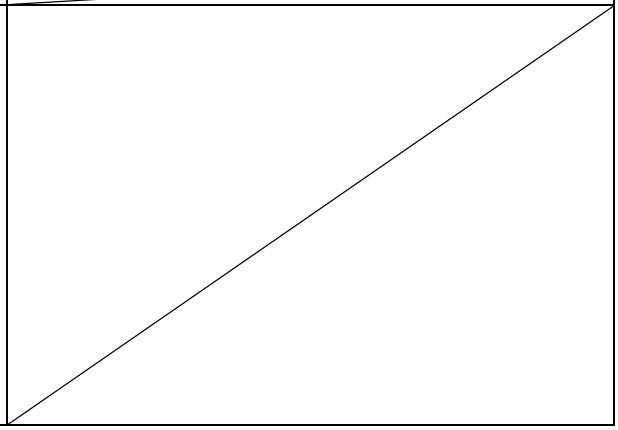



## Ch:Mid




## Ch:High



# 20dB Bandwidth

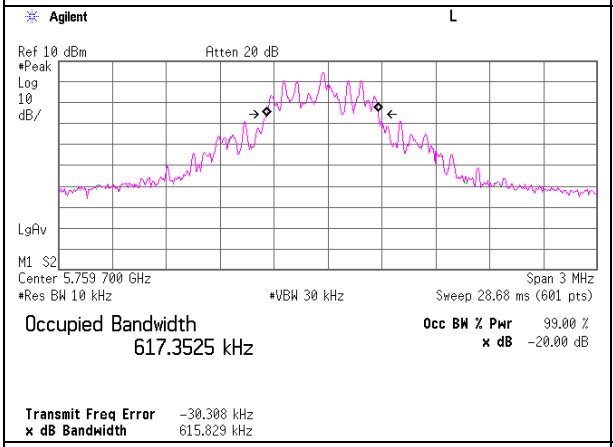
UL-Apex Co.,Ltd.
Head Office EMC Lab. No.6 Shielded Room

| | | | | | |
|---|---|---|---|---|---|
| Company | : | Panasonic Communications Co., Ltd. | Regulation | : | FCC15.247(a)(1) |
| Equipment | : | Cordless Telephone (Handset) | Test Distance | : | - |
| Model | : | KX-TGA600 (Handset) | Date | : | 10/04/2006 |
| S/N | : | 1 | Temperature | : | 26 deg.C. |
| Power | : | DC3.6V | Humidity | : | 57 % |
| Mode | : | Tx (Hopping off) | Engineer | : | Kenichi Adachi |

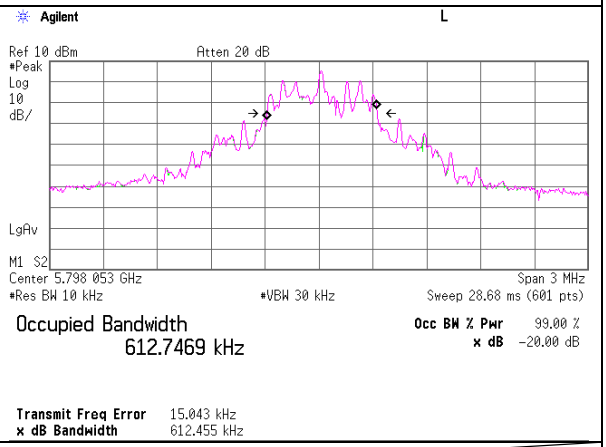
| Ch | Freq. [MHz] | 20dB Bandwidth [MHz] | Limit [MHz] |
|---|---|---|---|
| Low | 5759.702 | 615.829 | - |
| Mid | 5798.053 | 612.455 | - |
| High | 5838.187 | 621.915 | - |

# 20dB Bandwidth

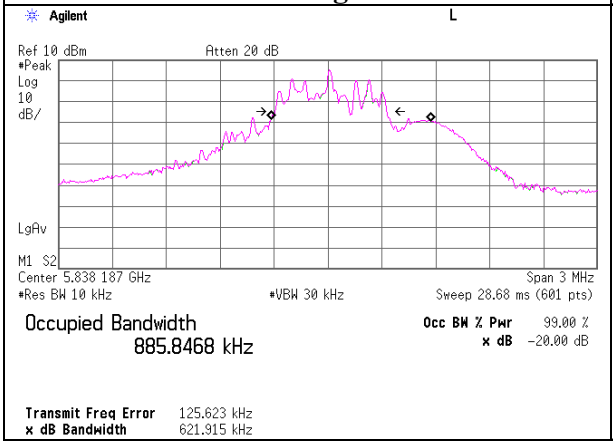
## Ch:Low




## Ch:Mid




## Ch:High



# Number of Hopping Frequency

UL-Apex Co.,Ltd.
Head Office EMC Lab. No.6 Shielded Room

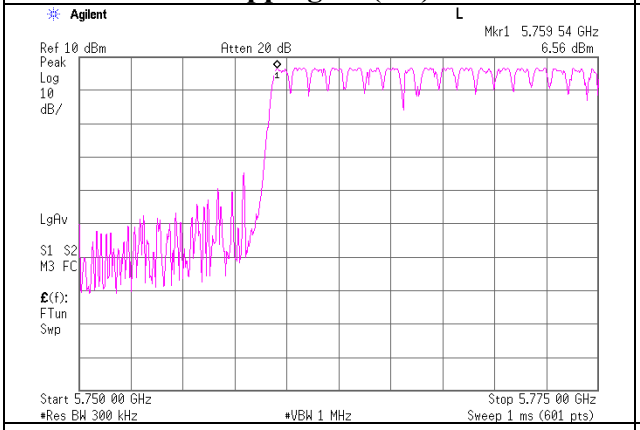
Company : Panasonic Communications Co., Ltd.
Equipment : Cordless Telephone (Handset)
Model : KX-TGA600 (Handset)
S/N : 1
Power : DC3.6V
Mode : Tx (Hopping on)

Regulation : FCC15.247(a)(1)(ii)
Test Distance : -
Date : 10/04/2006
Temperature : 26 deg.C.
Humidity : 57 %
Engineer : Kenichi Adachi

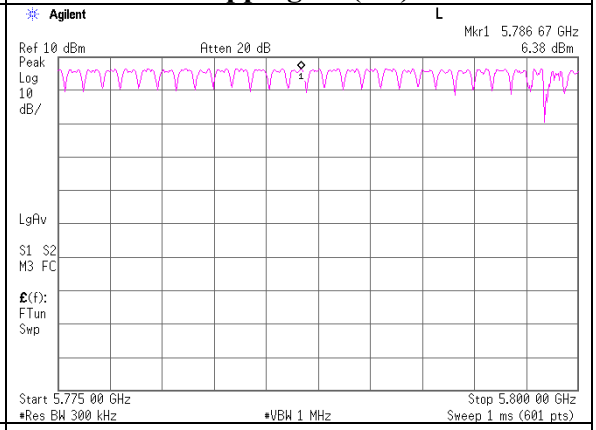
| Mode | Number of channel [time] | Limit [time] |
|---|---|---|
| Tx(Hopping on) | 89 | ≧75 |

# Number of Hopping Frequency

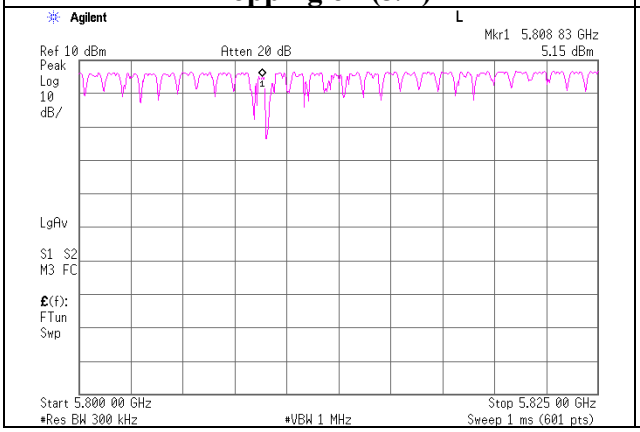
## Hopping on (1/4)



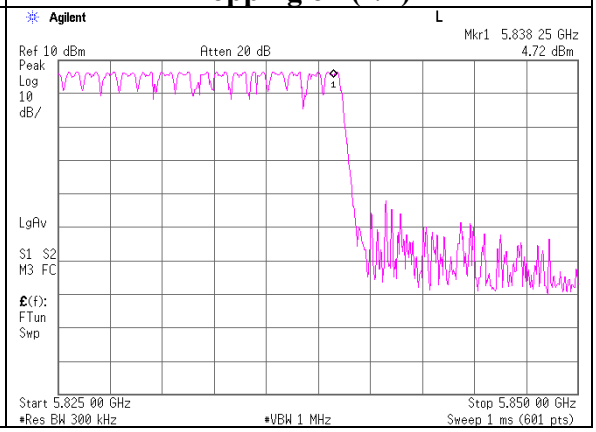

## Hopping on (2/4)




## Hopping on (3/4)




## Hopping on (4/4)



# Dwell time

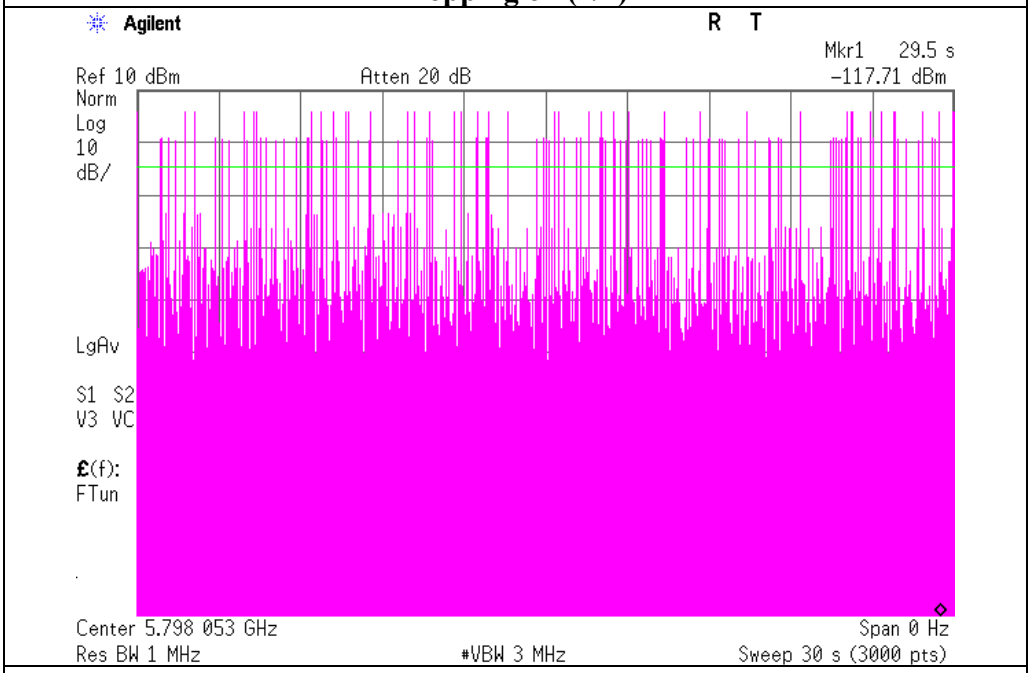
UL-Apex Co.,Ltd.
Head Office EMC Lab. No.6 Shielded Room

| | | | | | |
|---|---|---|---|---|---|
| Company | : | Panasonic Communications Co., Ltd. | Regulation | : | FCC15.247(a)(1)(ii) |
| Equipment | : | Cordless Telephone (Handset) | Test Distance | : | - |
| Model | : | KX-TGA600 (Handset) | Date | : | 10/04/2006 |
| S/N | : | 1 | Temperature | : | 26 deg.C. |
| Power | : | DC3.6V | Humidity | : | 57 % |
| Mode | : | Tx (Hopping on) | Engineer | : | Kenichi Adachi |

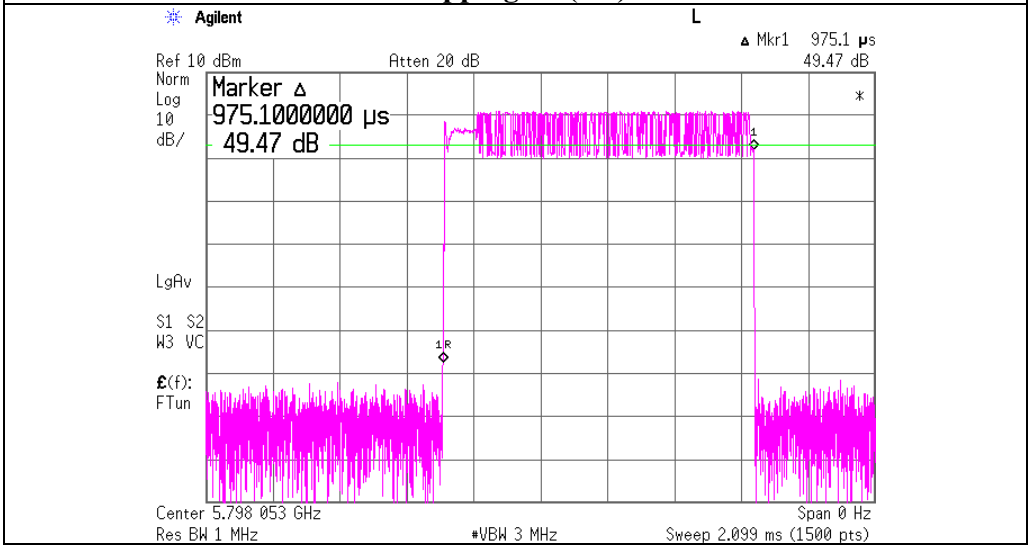
| Mode | Number of transmission in a 30 second period | Length of transmission time [msec] | Result [msec] | Limit [msec] |
|---|---|---|---|---|
| Tx (Hopping on) | 75 times / 30 sec. x 30.0 sec. = 75 times | 0.975 | 73 | 400 |

# Dwell time

## Hopping on (1/2)




## Hopping on (2/2)



# Maximum Peak Output Power

UL-Apex Co.,Ltd.
Head Office EMC Lab. No.6 Shielded Room

Company : Panasonic Communications Co., Ltd.
Equipment : Cordless Telephone (Handset)
Model : KX-TGA600 (Handset)
S/N : 1
Power : DC3.6V
Mode : Tx (Hopping off)

Regulation : FCC15.247(b)(1)
Test Distance : -
Date : 10/04/2006
Temperature : 26 deg.C.
Humidity : 57 %
Engineer : Kenichi Adachi

**Ant 2 (Worst)**

| Ch | Freq. [MHz] | P/M (PK) Reading [dBm] | Cable Loss [dB] | Atten. [dB] | Result [dBm] | Result [mW] | Limit [dBm] | Limit [mW] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| Low | 5759.702 | 7.44 | 0.00 | 10.14 | 17.58 | 57.28 | 30.00 | 1000 | 12.42 |
| Mid | 5798.053 | 7.86 | 0.00 | 10.13 | 17.99 | 62.95 | 30.00 | 1000 | 12.01 |
| High | 5838.187 | 8.13 | 0.00 | 10.13 | 18.26 | 66.99 | 30.00 | 1000 | 11.74 |

Sample Calculation:
Result = Reading + Cable Loss + Attenuator
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

**Ant 1**

| Ch | Freq. [MHz] | P/M (PK) Reading [dBm] | Cable Loss [dB] | Atten. [dB] | Result [dBm] | Result [mW] | Limit [dBm] | Limit [mW] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| Low | 5759.702 | 7.19 | 0.00 | 10.14 | 17.33 | 54.08 | 30.00 | 1000 | 12.67 |
| Mid | 5798.053 | 6.97 | 0.00 | 10.13 | 17.10 | 51.29 | 30.00 | 1000 | 12.90 |
| High | 5838.187 | 6.72 | 0.00 | 10.13 | 16.85 | 48.42 | 30.00 | 1000 | 13.15 |

Sample Calculation:
Result = Reading + Cable Loss + Attenuator
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

## Reference Data

Refer to SAR report(27BE0153-HO-E).

UL-Apex Co.,Ltd.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company : Panasonic Communications Co., Ltd.
Equipment : Cordless Telephone (Handset)
Model : KX-TGA600 (Handset)
S/N : 2
Power : DC3.6V
Mode : Tx (Hopping off), Worst Ant : Ant2

Regulation : FCC15.247(b)(1)
Test Distance : 3m
Date : 10/03/2006
Temperature : 24 deg.C.
Humidity : 62 %
Engineer : Kenichi Adachi

| No. | Frequency [MHz] | Electric Field Strength (After Factor Calculation) [dBuV/m] HOR | Electric Field Strength (After Factor Calculation) [dBuV/m] VER | SG Reading [dBm] HOR | SG Reading [dBm] VER | Tx Cable Loss [dB] | Tx Ant. Gain [dBi] | Tx Ant. ATT. Loss [dB] | RESULT (EIRP) [dBm] HOR | RESULT (EIRP) [dBm] VER |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5759.70 | 118.9 | 120.5 | 10.7 | 12.3 | 5.0 | 13.0 | 0.0 | 18.7 | 20.3 |
| 2 | 5798.05 | 118.5 | 118.9 | 10.3 | 10.7 | 5.0 | 13.0 | 0.0 | 18.4 | 18.7 |
| 3 | 5838.19 | 117.7 | 118.9 | 9.6 | 10.8 | 5.0 | 13.1 | 0.0 | 17.6 | 18.8 |

CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-26.5GHz)
Tx-ANTENNA : Shorted Dipole Antenna(30-120MHz), Dipole Antenna(120-1000MHz), Horn Antenna(1-26.5GHz)
Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.
With the result above, the effective radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.

# Radiated Spurious Emission (below 1GHz)

Tx, Low

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

## DATA OF RADIATED EMISSION TEST

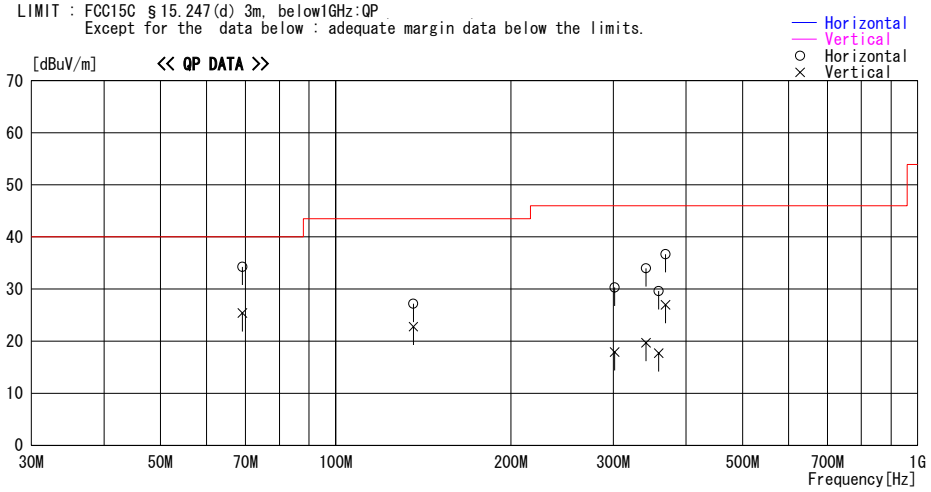
UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2006/10/03 17:38:13

Company : Panasonic Communications Co.,Ltd.
Kind of EUT : Handset of Cordless Phone
Model No. : KX-TGA600
Serial No. : 2

Report No. : 27BE0153-HO
Power : DC 3.6V
Temp./Humi. : 25deg.C / 60%
Operator : Kenichi Adachi

Mode / Remarks : Tx 5759.702MHz, EUT-max-axis(H: Z, V: Y), Worst-Ant: Ant2,

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP
Except for the data below : adequate margin data below the limits.




| Frequency | Reading | DET | Antenna Factor | Loss& Gain | Level | Angle | Height | Polar. | Limit | Margin | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [MHz] | [dBuV] | | [dB/m] | [dB] | [dBuV/m] | [Deg] | [cm] | | [dBuV/m] | [dB] | |
| 69.130 | 51.5 | QP | 7.3 | -24.5 | 34.3 | 307 | 286 | Hori. | 40.0 | 5.7 | |
| 69.151 | 42.6 | QP | 7.3 | -24.5 | 25.4 | 167 | 231 | Vert. | 40.0 | 14.6 | |
| 136.003 | 31.5 | QP | 14.8 | -23.5 | 22.8 | 323 | 197 | Vert. | 43.5 | 20.7 | |
| 136.003 | 35.9 | QP | 14.8 | -23.5 | 27.2 | 7 | 234 | Hori. | 43.5 | 16.3 | |
| 301.557 | 25.7 | QP | 14.5 | -22.3 | 17.9 | 197 | 134 | Vert. | 46.0 | 28.1 | |
| 301.562 | 38.1 | QP | 14.5 | -22.3 | 30.3 | 37 | 100 | Hori. | 46.0 | 15.7 | |
| 341.430 | 40.0 | QP | 16.0 | -22.0 | 34.0 | 40 | 100 | Hori. | 46.0 | 12.0 | |
| 341.430 | 25.7 | QP | 16.0 | -22.0 | 19.7 | 324 | 100 | Vert. | 46.0 | 26.3 | |
| 358.989 | 34.9 | QP | 16.6 | -21.9 | 29.6 | 43 | 100 | Hori. | 46.0 | 16.4 | |
| 358.986 | 23.0 | QP | 16.6 | -21.9 | 17.7 | 48 | 100 | Vert. | 46.0 | 28.3 | |
| 368.760 | 32.0 | QP | 16.9 | -21.9 | 27.0 | 49 | 242 | Vert. | 46.0 | 19.0 | |
| 368.777 | 41.7 | QP | 16.9 | -21.9 | 36.7 | 34 | 100 | Hori. | 46.0 | 9.3 | |

CHART:WITH FACTOR ANT TYPE : -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

# Radiated Spurious Emission (below 1GHz)

Tx, Mid

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

## DATA OF RADIATED EMISSION TEST

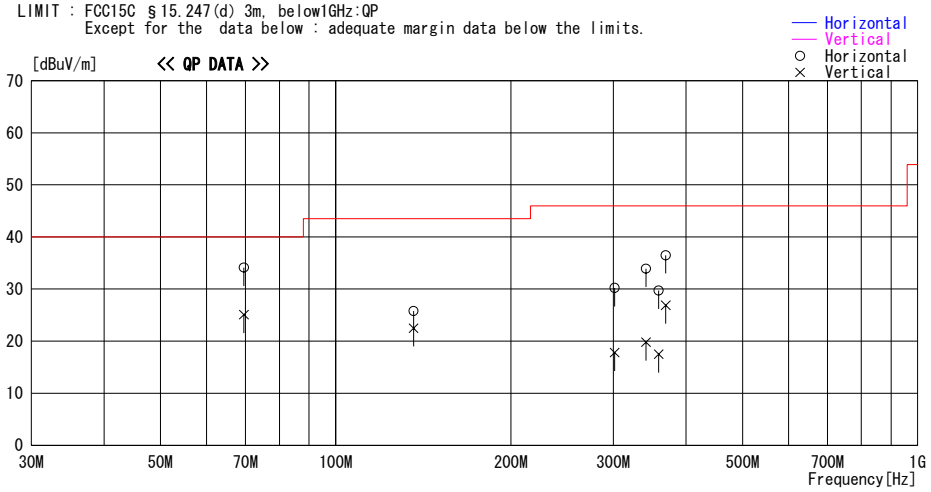
UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2006/10/03 22:37:43

Company : Panasonic Communications Co.,Ltd.
Kind of EUT : Handset of Cordless Phone
Model No. : KX-TGA600
Serial No. : 2

Report No. : 27BE0153-HO
Power : DC 3.6V
Temp./Humi. : 25deg.C / 60%
Operator : Kenichi Adachi

Mode / Remarks : Tx 5798.053MHz, EUT-max-axis(H: Z, V: Y), Worst-Ant: Ant2,

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP
Except for the data below : adequate margin data below the limits.




| Frequency | Reading | DET | Antenna Factor | Loss& Gain | Level | Angle | Height | Polar. | Limit | Margin | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [MHz] | [dBuV] | | [dB/m] | [dB] | [dBuV/m] | [Deg] | [cm] | | [dBuV/m] | [dB] | |
| 69.544 | 51.3 | QP | 7.3 | -24.5 | 34.1 | 305 | 291 | Hori. | 40.0 | 5.9 | |
| 69.565 | 42.4 | QP | 7.2 | -24.5 | 25.1 | 171 | 230 | Vert. | 40.0 | 14.9 | |
| 136.100 | 34.5 | QP | 14.8 | -23.5 | 25.8 | 5 | 237 | Hori. | 43.5 | 17.7 | |
| 136.100 | 31.2 | QP | 14.8 | -23.5 | 22.5 | 320 | 193 | Vert. | 43.5 | 21.0 | |
| 301.557 | 38.0 | QP | 14.5 | -22.3 | 30.2 | 36 | 100 | Hori. | 46.0 | 15.8 | |
| 301.571 | 25.6 | QP | 14.5 | -22.3 | 17.8 | 189 | 132 | Vert. | 46.0 | 28.2 | |
| 341.415 | 39.9 | QP | 16.0 | -22.0 | 33.9 | 42 | 100 | Hori. | 46.0 | 12.1 | |
| 341.426 | 25.8 | QP | 16.0 | -22.0 | 19.8 | 34 | 100 | Vert. | 46.0 | 26.2 | |
| 358.983 | 35.0 | QP | 16.6 | -21.9 | 29.7 | 326 | 100 | Hori. | 46.0 | 16.3 | |
| 358.989 | 22.8 | QP | 16.6 | -21.9 | 17.5 | 49 | 100 | Vert. | 46.0 | 28.5 | |
| 368.983 | 41.5 | QP | 16.9 | -21.9 | 36.5 | 44 | 236 | Hori. | 46.0 | 9.5 | |
| 368.987 | 31.9 | QP | 16.9 | -21.9 | 26.9 | 39 | 100 | Vert. | 46.0 | 19.1 | |

CHART:WITH FACTOR ANT TYPE : -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

# Radiated Spurious Emission (below 1GHz)

Tx, High

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

## DATA OF RADIATED EMISSION TEST

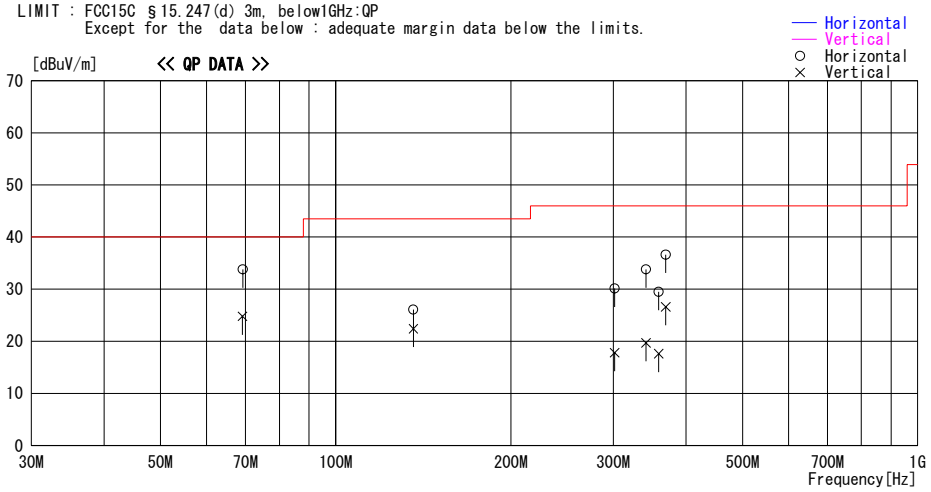
UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2006/10/03 22:58:43

Company : Panasonic Communications Co.,Ltd.
Kind of EUT : Handset of Cordless Phone
Model No. : KX-TGA600
Serial No. : 2

Report No. : 27BE0153-HO
Power : DC 3.6V
Temp./Humi. : 25deg.C / 60%
Operator : Kenichi Adachi

Mode / Remarks : Tx 5838.187MHz, EUT-max-axis(H: Z, V: Y), Worst-Ant: Ant2,

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP
Except for the data below : adequate margin data below the limits.




| Frequency | Reading | DET | Antenna Factor | Loss& Gain | Level | Angle | Height | Polar. | Limit | Margin | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [MHz] | [dBuV] | | [dB/m] | [dB] | [dBuV/m] | [Deg] | [cm] | | [dBuV/m] | [dB] | |
| 69.250 | 51.0 | QP | 7.3 | -24.5 | 33.8 | 298 | 289 | Hori. | 40.0 | 6.2 | |
| 69.180 | 42.0 | QP | 7.3 | -24.5 | 24.8 | 169 | 232 | Vert. | 40.0 | 15.2 | |
| 136.005 | 34.8 | QP | 14.8 | -23.5 | 26.1 | 8 | 241 | Hori. | 43.5 | 17.4 | |
| 136.004 | 31.1 | QP | 14.8 | -23.5 | 22.4 | 328 | 190 | Vert. | 43.5 | 21.1 | |
| 301.563 | 37.9 | QP | 14.5 | -22.3 | 30.1 | 31 | 100 | Hori. | 46.0 | 15.9 | |
| 301.535 | 25.6 | QP | 14.5 | -22.3 | 17.8 | 184 | 134 | Vert. | 46.0 | 28.2 | |
| 341.438 | 39.8 | QP | 16.0 | -22.0 | 33.8 | 39 | 100 | Hori. | 46.0 | 12.2 | |
| 341.440 | 25.7 | QP | 16.0 | -22.0 | 19.7 | 36 | 100 | Vert. | 46.0 | 26.3 | |
| 358.982 | 34.8 | QP | 16.6 | -21.9 | 29.5 | 322 | 100 | Hori. | 46.0 | 16.5 | |
| 358.985 | 22.9 | QP | 16.6 | -21.9 | 17.6 | 56 | 100 | Vert. | 46.0 | 28.4 | |
| 368.983 | 41.6 | QP | 16.9 | -21.9 | 36.6 | 45 | 232 | Hori. | 46.0 | 9.4 | |
| 368.983 | 31.6 | QP | 16.9 | -21.9 | 26.6 | 40 | 100 | Vert. | 46.0 | 19.4 | |

CHART:WITH FACTOR ANT TYPE : -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

# Radiated Spurious Emission (above 1GHz)

UL-Apex Co.,Ltd.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company : Panasonic Communications Co., Ltd.
Equipment : Cordless Telephone (Handset)
Model : KX-TGA600 (Handset)
S/N : 2
Power : DC3.6V
Mode : Tx 5759.702MHz
Position : H: Z-axis, V: Y-axis, Worst Ant: Ant2

Regulation : FCC15.247(d)
Test Distance : 3m / 1m / 0.5m / 0.2m
Date : 10/02/2006, 10/03/2006, 10/03/2006
Temperature : 24 deg.C. ,23deg.C. , 25 deg.C.
Humidity : 62 % ,67% , 60 %
Engineer : Kenichi Adachi, Shinya Watanabe

**PK DETECT** (RBW: 1MHz, VBW: 1MHz)

| No. | FREQ | S/A READING | | ANT | AMP | CABLE | Hi-Pass | RESULT | | Limit | MARGIN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HOR | VER | Factor | GAIN | LOSS | Filter | HOR | VER | PK | HOR | VER |
| | [MHz] | [dBuV] | | [dB/m] | [dB] | [dB] | [dB] | [dBuV/m] | | [dBuV/m] | [dB] | |
| **Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss** | | | | | | | | | | | | |
| 1 | 5150.00 | 43.0 | 43.3 | 33.8 | 31.6 | 3.6 | 0.0 | 48.8 | 49.1 | 74.0 | 25.2 | 24.9 |
| 2 | 5424.98 | 43.9 | 45.0 | 33.9 | 31.7 | 3.7 | 9.9 | 59.7 | 60.8 | 74.0 | 14.3 | 13.2 |
| **Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 3 | 11519.40 | 58.0 | 59.6 | 40.7 | 33.1 | 5.6 | 0.8 | 62.5 | 64.1 | 74.0 | 11.5 | 9.9 |
| 4 | 17279.11 | 55.9 | 56.6 | 42.3 | 31.9 | 6.9 | 0.6 | 64.3 | 65.0 | 74.0 | 9.7 | 9.0 |
| 5 | 23038.81 | 57.8 | 57.2 | 40.3 | 31.9 | 6.4 | 0.6 | 63.7 | 63.1 | 74.0 | 10.3 | 10.9 |
| **Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 6 | 28798.50 | 48.2 | 46.8 | 45.3 | 24.3 | 7.3 | 0.0 | 60.9 | 59.5 | 74.0 | 13.1 | 14.5 |
| **Test distance 0.2meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 7 | 34558.20 | 55.4 | 52.0 | 45.2 | 24.6 | 8.2 | 0.0 | 60.7 | 57.3 | 74.0 | 13.3 | 16.7 |

**AV DETECT** (RBW: 1MHz, VBW: 10Hz)

| No. | FREQ | S/A READING | | ANT | AMP | CABLE | Hi-Pass | RESULT | | Limit | MARGIN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HOR | VER | Factor | GAIN | LOSS | Filter | HOR | VER | AV | HOR | VER |
| | [MHz] | [dBuV] | | [dB/m] | [dB] | [dB] | [dB] | [dBuV/m] | | [dBuV/m] | [dB] | |
| **Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss** | | | | | | | | | | | | |
| 1 | 5150.00 | 29.3 | 29.5 | 33.8 | 31.6 | 3.6 | 0.0 | 35.1 | 35.3 | 54.0 | 18.9 | 18.7 |
| 2 | 5424.98 | 26.6 | 27.0 | 33.9 | 31.7 | 3.7 | 9.9 | 42.4 | 42.8 | 54.0 | 11.6 | 11.2 |
| **Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 3 | 11519.40 | 35.7 | 36.6 | 40.7 | 33.1 | 5.6 | 0.8 | 40.2 | 41.1 | 54.0 | 13.8 | 12.9 |
| 4 | 17279.11 | 35.8 | 36.6 | 42.3 | 31.9 | 6.9 | 0.6 | 44.2 | 45.0 | 54.0 | 9.8 | 9.0 |
| 5 | 23038.81 | 36.5 | 36.1 | 40.3 | 31.9 | 6.4 | 0.6 | 42.4 | 42.0 | 54.0 | 11.6 | 12.0 |
| **Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 6 | 28798.50 | 32.0 | 31.5 | 45.3 | 24.3 | 7.3 | 0.0 | 44.7 | 44.2 | 54.0 | 9.3 | 9.8 |
| **Test distance 0.2meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 7 | 34558.20 | 39.0 | 38.0 | 45.2 | 24.6 | 8.2 | 0.0 | 44.3 | 43.3 | 54.0 | 9.7 | 10.7 |

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56 dB
Test Distance 0.2m : Distance Factor(Dfac) = 20log(3/0.2) = 23.52 dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

# Radiated Spurious Emission (above 1GHz)

UL-Apex Co.,Ltd.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company : Panasonic Communications Co., Ltd.
Equipment : Cordless Telephone (Handset)
Model : KX-TGA600 (Handset)
S/N : 2
Power : DC3.6V
Mode : Tx 5798.053MHz
Position : H: Z-axis, V: Y-axis, Worst Ant: Ant2

Regulation : FCC15.247(d)
Test Distance : 3m / 1m / 0.5m / 0.2m
Date : 10/02/2006, 10/03/2006, 10/03/2006
Temperature : 24 deg.C. ,23deg.C. , 25 deg.C.
Humidity : 62 % ,67% , 60 %
Engineer : Kenichi Adachi, Shinya Watanabe

**PK DETECT** (RBW: 1MHz, VBW: 1MHz)

| No. | FREQ | S/A READING | | ANT | AMP | CABLE | Hi-Pass | RESULT | | Limit | MARGIN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HOR | VER | Factor | GAIN | LOSS | Filter | HOR | VER | PK | HOR | VER |
| | [MHz] | [dBuV] | | [dB/m] | [dB] | [dB] | [dB] | [dBuV/m] | | [dBuV/m] | [dB] | |
| **Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss** | | | | | | | | | | | | |
| 1 | 5150.00 | 42.8 | 42.6 | 33.8 | 31.6 | 3.6 | 0.0 | 48.6 | 48.4 | 74.0 | 25.4 | 25.6 |
| 2 | 5383.24 | 44.8 | 46.6 | 33.9 | 31.7 | 3.7 | 9.9 | 60.6 | 62.4 | 74.0 | 13.4 | 11.6 |
| **Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 3 | 11596.11 | 61.9 | 61.9 | 40.7 | 33.1 | 5.7 | 0.7 | 66.4 | 66.4 | 74.0 | 7.6 | 7.6 |
| 4 | 17394.16 | 57.0 | 53.8 | 42.9 | 31.9 | 6.9 | 0.6 | 66.0 | 62.8 | 74.0 | 8.0 | 11.2 |
| 5 | 23192.21 | 56.0 | 54.7 | 40.1 | 31.8 | 6.4 | 0.6 | 61.8 | 60.5 | 74.0 | 12.2 | 13.5 |
| **Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 6 | 28990.28 | 45.8 | 47.9 | 45.3 | 24.4 | 7.4 | 0.0 | 58.5 | 60.6 | 74.0 | 15.5 | 13.4 |
| **Test distance 0.2meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 7 | 34788.32 | 55.3 | 53.6 | 45.1 | 24.5 | 8.3 | 0.0 | 60.7 | 59.0 | 74.0 | 13.3 | 15.0 |

**AV DETECT** (RBW: 1MHz, VBW: 10Hz)

| No. | FREQ | S/A READING | | ANT | AMP | CABLE | Hi-Pass | RESULT | | Limit | MARGIN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HOR | VER | Factor | GAIN | LOSS | Filter | HOR | VER | AV | HOR | VER |
| | [MHz] | [dBuV] | | [dB/m] | [dB] | [dB] | [dB] | [dBuV/m] | | [dBuV/m] | [dB] | |
| **Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss** | | | | | | | | | | | | |
| 1 | 5150.00 | 28.9 | 29.0 | 33.8 | 31.6 | 3.6 | 0.0 | 34.7 | 34.8 | 54.0 | 19.3 | 19.2 |
| 2 | 5383.24 | 26.5 | 27.2 | 33.9 | 31.7 | 3.7 | 9.9 | 42.3 | 43.0 | 54.0 | 11.7 | 11.0 |
| **Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 3 | 11596.11 | 36.6 | 36.0 | 40.7 | 33.1 | 5.7 | 0.7 | 41.1 | 40.5 | 54.0 | 12.9 | 13.5 |
| 4 | 17394.16 | 35.9 | 35.6 | 42.9 | 31.9 | 6.9 | 0.6 | 44.9 | 44.6 | 54.0 | 9.1 | 9.4 |
| 5 | 23192.21 | 35.9 | 35.5 | 40.1 | 31.8 | 6.4 | 0.6 | 41.7 | 41.3 | 54.0 | 12.3 | 12.7 |
| **Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 6 | 28990.28 | 31.3 | 31.6 | 45.3 | 24.4 | 7.4 | 0.0 | 44.0 | 44.3 | 54.0 | 10.0 | 9.7 |
| **Test distance 0.2meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 7 | 34788.32 | 38.0 | 38.6 | 45.1 | 24.5 | 8.3 | 0.0 | 43.4 | 44.0 | 54.0 | 10.6 | 10.0 |

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56 dB
Test Distance 0.2m : Distance Factor(Dfac) = 20log(3/0.2) = 23.52 dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

# Radiated Spurious Emission (above 1GHz)

UL-Apex Co.,Ltd.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company : Panasonic Communications Co., Ltd.
Equipment : Cordless Telephone (Handset)
Model : KX-TGA600 (Handset)
S/N : 2
Power : DC3.6V
Mode : Tx 5838.187MHz
Position : H: Z-axis, V: Y-axis, Worst Ant: Ant2

Regulation : FCC15.247(d)
Test Distance : 3m / 1m / 0.5m / 0.2m
Date : 10/02/2006, 10/03/2006, 10/03/2006
Temperature : 24 deg.C. ,23deg.C. , 25 deg.C.
Humidity : 62 % ,67% , 60 %
Engineer : Kenichi Adachi, Shinya Watanabe

**PK DETECT** (RBW: 1MHz, VBW: 1MHz)

| No. | FREQ | S/A READING | | ANT | AMP | CABLE | Hi-Pass | RESULT | | Limit | MARGIN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HOR | VER | Factor | GAIN | LOSS | Filter | HOR | VER | PK | HOR | VER |
| | [MHz] | [dBuV] | | [dB/m] | [dB] | [dB] | [dB] | [dBuV/m] | | [dBuV/m] | [dB] | |
| **Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss** | | | | | | | | | | | | |
| 1 | 5150.00 | 42.6 | 42.4 | 33.8 | 31.6 | 3.6 | 0.0 | 48.4 | 48.2 | 74.0 | 25.6 | 25.8 |
| 2 | 5423.30 | 48.7 | 48.9 | 33.9 | 31.7 | 3.7 | 9.9 | 64.5 | 64.7 | 74.0 | 9.5 | 9.3 |
| **Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 3 | 11676.37 | 62.0 | 62.8 | 40.7 | 33.1 | 5.7 | 0.7 | 66.5 | 67.3 | 74.0 | 7.5 | 6.7 |
| 4 | 17514.56 | 56.2 | 53.6 | 43.5 | 31.8 | 6.9 | 0.5 | 65.8 | 63.2 | 74.0 | 8.2 | 10.8 |
| 5 | 23352.75 | 54.0 | 54.2 | 40.0 | 31.8 | 6.4 | 0.6 | 59.7 | 59.9 | 74.0 | 14.3 | 14.1 |
| **Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 6 | 29190.90 | 47.1 | 45.7 | 45.4 | 24.4 | 7.4 | 0.0 | 59.9 | 58.5 | 74.0 | 14.1 | 15.5 |
| **Test distance 0.2meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 7 | 35029.30 | 56.3 | 51.4 | 45.0 | 24.4 | 8.4 | 0.0 | 61.8 | 56.9 | 74.0 | 12.2 | 17.1 |

**AV DETECT** (RBW: 1MHz, VBW: 10Hz)

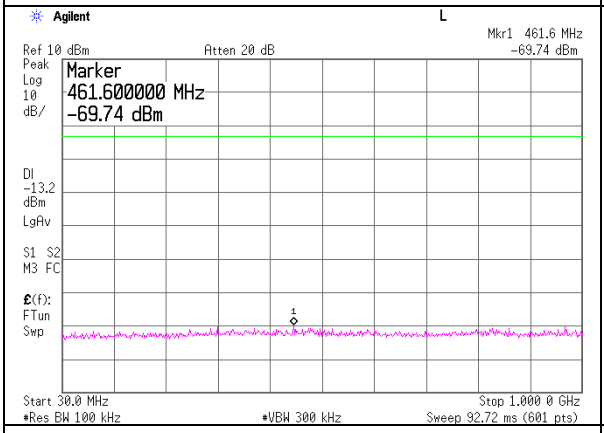
| No. | FREQ | S/A READING | | ANT | AMP | CABLE | Hi-Pass | RESULT | | Limit | MARGIN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HOR | VER | Factor | GAIN | LOSS | Filter | HOR | VER | AV | HOR | VER |
| | [MHz] | [dBuV] | | [dB/m] | [dB] | [dB] | [dB] | [dBuV/m] | | [dBuV/m] | [dB] | |
| **Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss** | | | | | | | | | | | | |
| 1 | 5150.00 | 29.5 | 29.3 | 33.8 | 31.6 | 3.6 | 0.0 | 35.3 | 35.1 | 54.0 | 18.7 | 18.9 |
| 2 | 5423.30 | 28.1 | 28.4 | 33.9 | 31.7 | 3.7 | 9.9 | 43.9 | 44.2 | 54.0 | 10.1 | 9.8 |
| **Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 3 | 11676.37 | 37.0 | 36.1 | 40.7 | 33.1 | 5.7 | 0.7 | 41.5 | 40.6 | 54.0 | 12.5 | 13.4 |
| 4 | 17514.56 | 36.0 | 35.1 | 43.5 | 31.8 | 6.9 | 0.5 | 45.6 | 44.7 | 54.0 | 8.4 | 9.3 |
| 5 | 23352.75 | 36.2 | 36.0 | 40.0 | 31.8 | 6.4 | 0.6 | 41.9 | 41.7 | 54.0 | 12.1 | 12.3 |
| **Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 6 | 29190.90 | 31.4 | 31.2 | 45.4 | 24.4 | 7.4 | 0.0 | 44.2 | 44.0 | 54.0 | 9.8 | 10.0 |
| **Test distance 0.2meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac** | | | | | | | | | | | | |
| 7 | 35029.30 | 39.7 | 38.5 | 45.0 | 24.4 | 8.4 | 0.0 | 45.2 | 44.0 | 54.0 | 8.8 | 10.0 |

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56 dB
Test Distance 0.2m : Distance Factor(Dfac) = 20log(3/0.2) = 23.52 dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

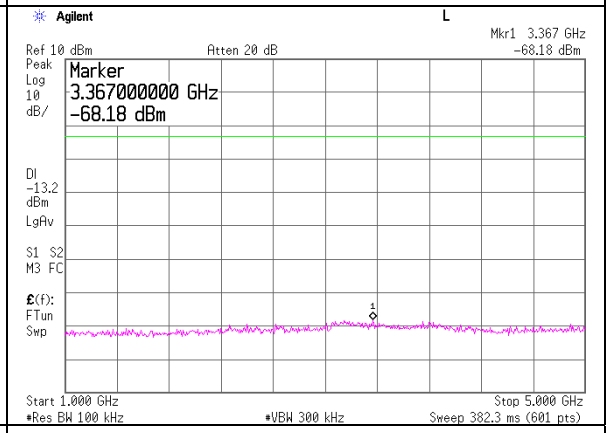
# Conducted Spurious Emission

## Ch:Low

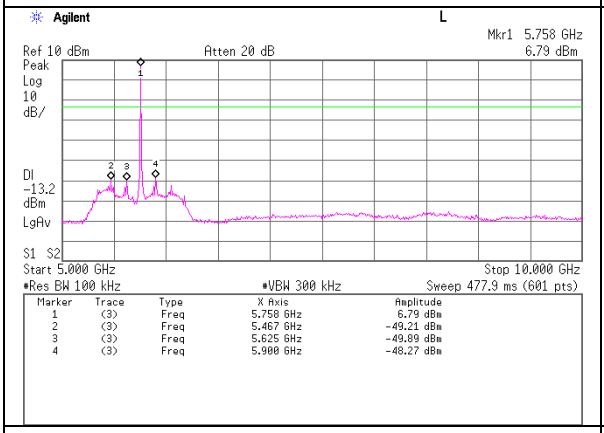
### 30MHz-1GHz



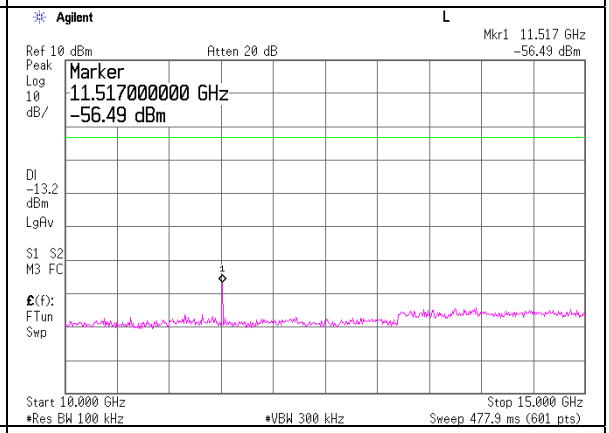

### 1GHz-5GHz



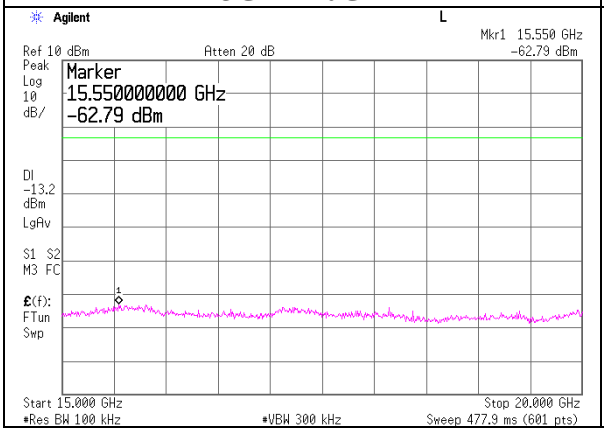

### 5GHz-10GHz



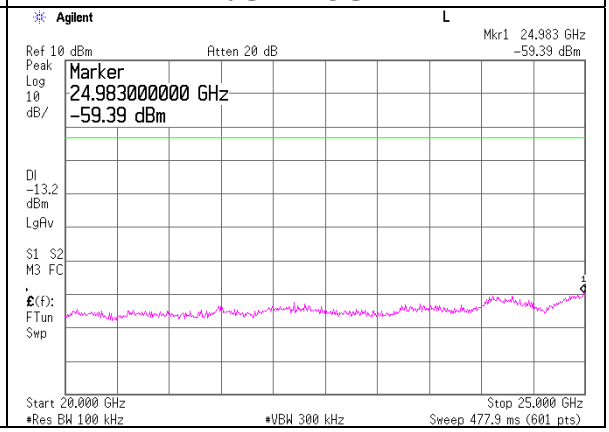

### 10GHz-15GHz




### 15GHz-20GHz



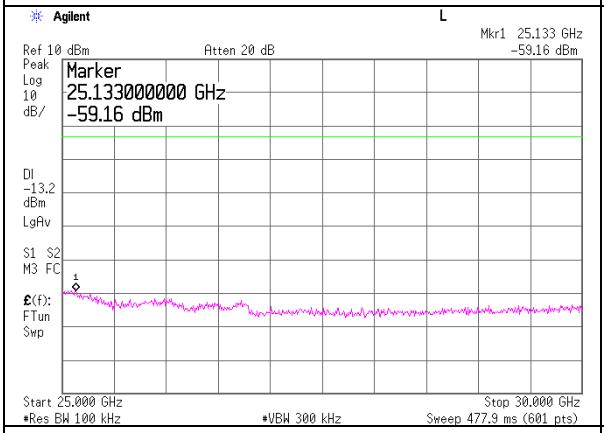

### 20GHz-25GHz



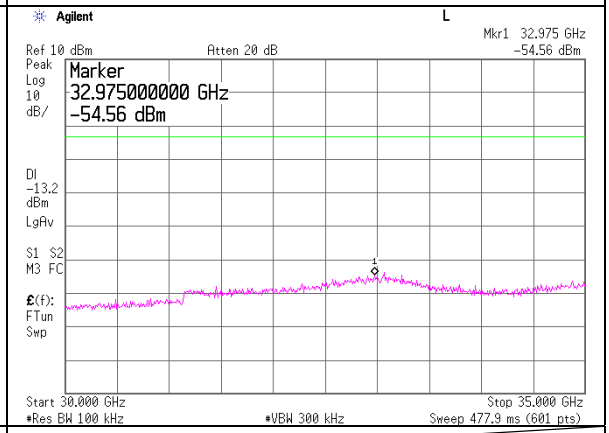
## Conducted Spurious Emission

### Ch:Low

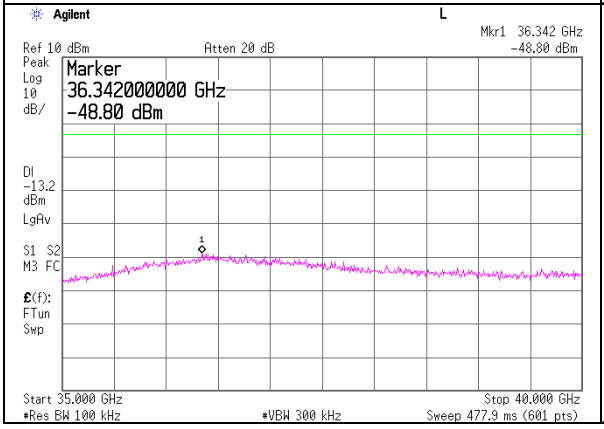
**25MHz-30GHz**

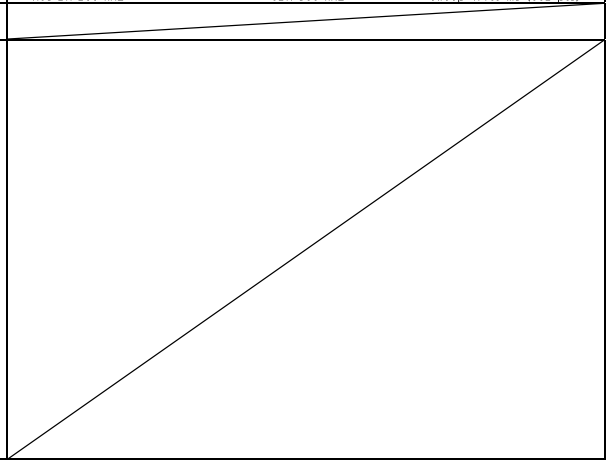



**30GHz-35GHz**



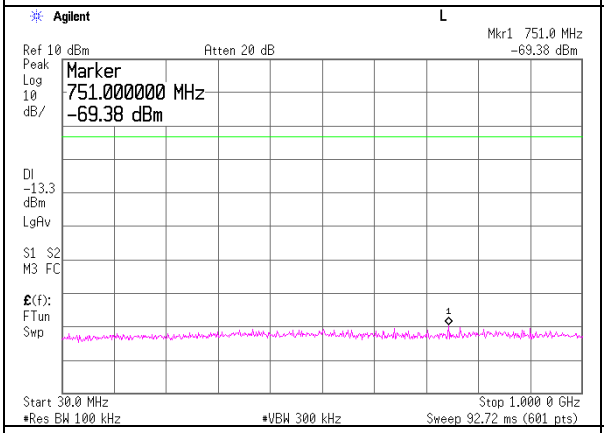

**35GHz-40GHz**



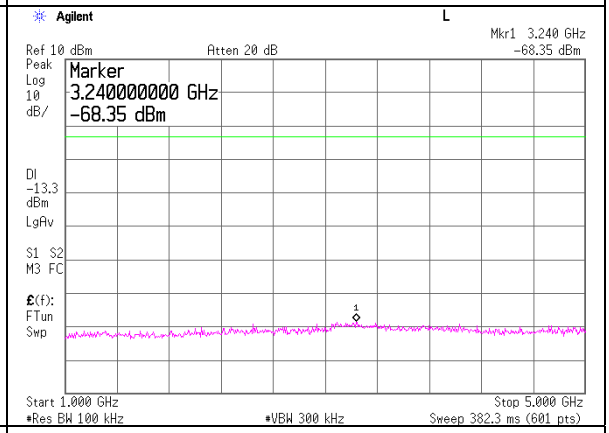



# Conducted Spurious Emission
## Ch:Mid

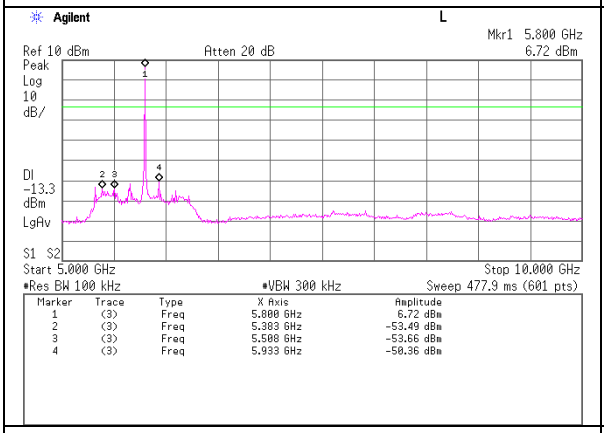
### 30MHz-1GHz



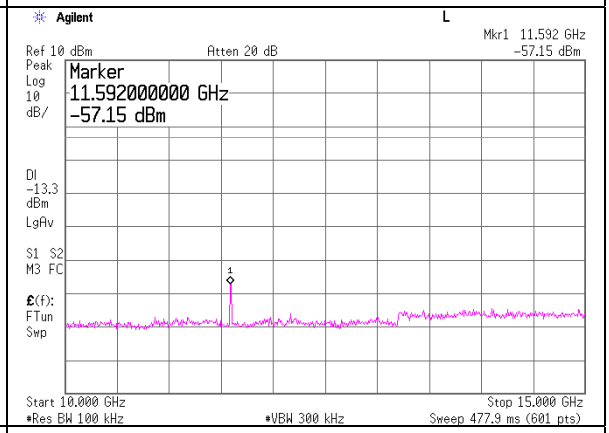

### 1GHz-5GHz



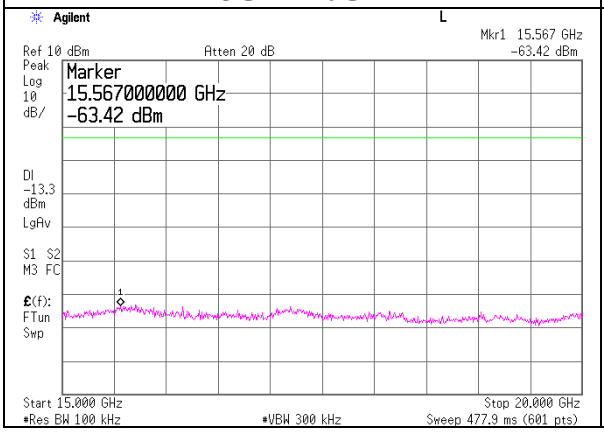

### 5GHz-10GHz



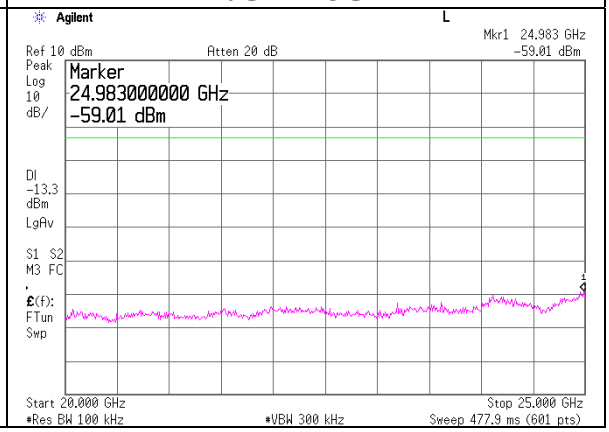

### 10GHz-15GHz




### 15GHz-20GHz



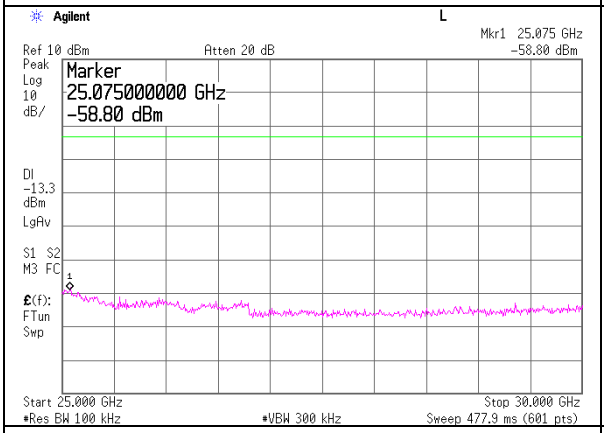

### 20GHz-25GHz



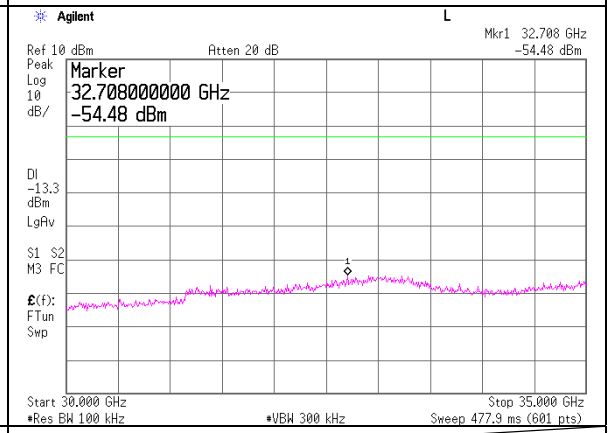
# Conducted Spurious Emission

## Ch:Mid

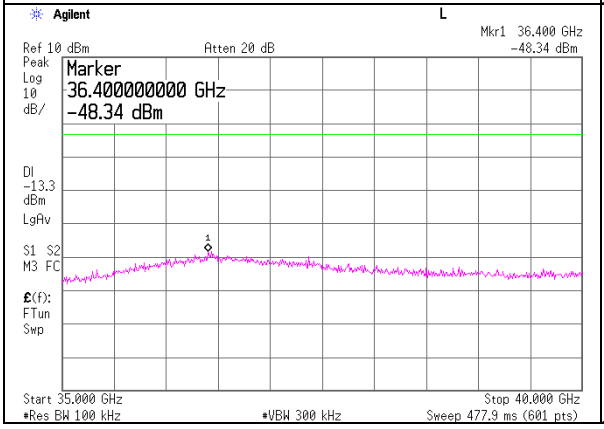
### 25MHz-30GHz

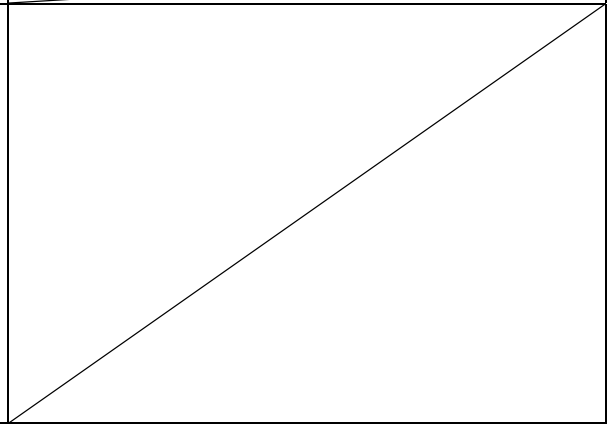



### 30GHz-35GHz



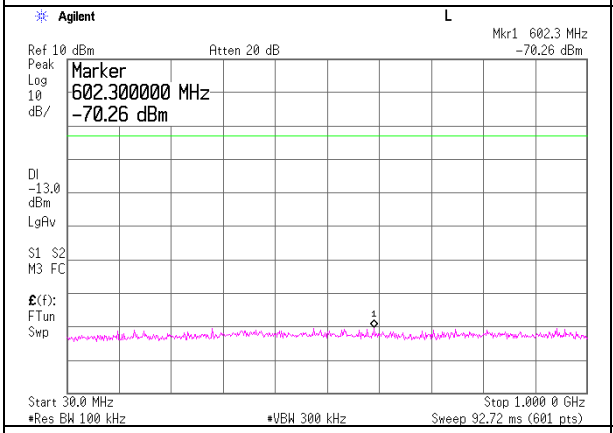

### 35GHz-40GHz



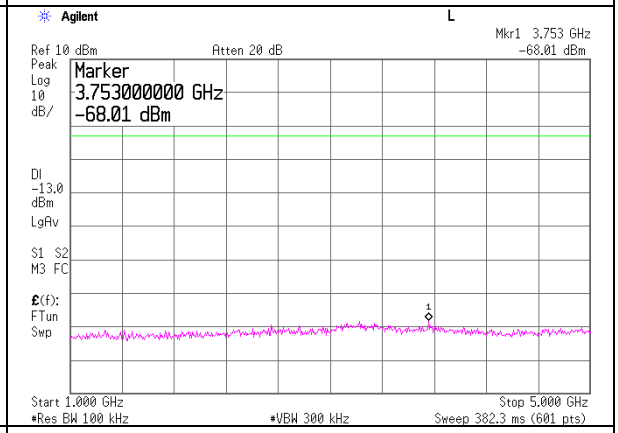



# Conducted Spurious Emission
## Ch:High

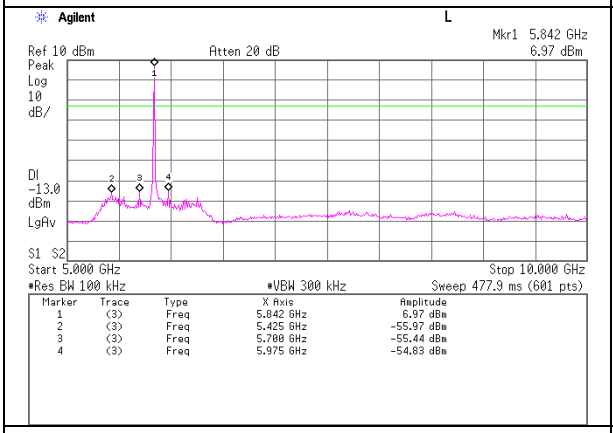
### 30MHz-1GHz



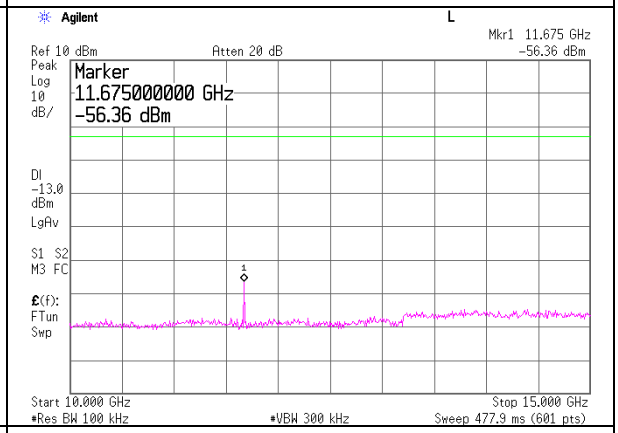

### 1GHz-5GHz



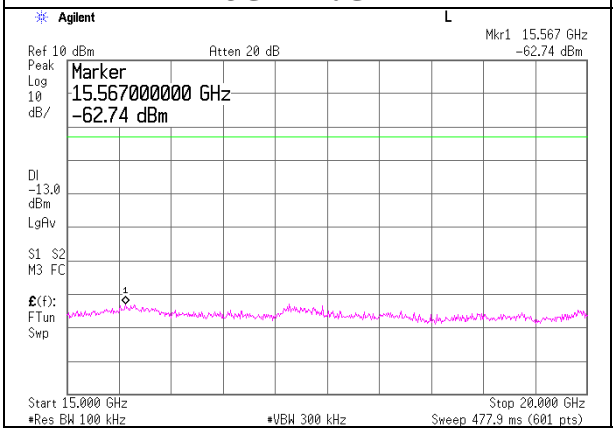

### 5GHz-10GHz



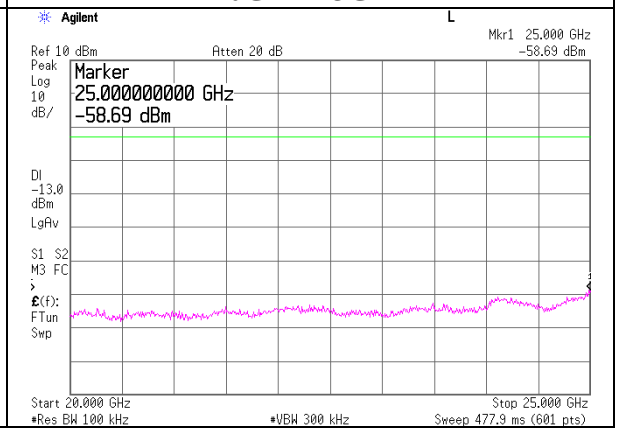

### 10GHz-15GHz




### 15GHz-20GHz



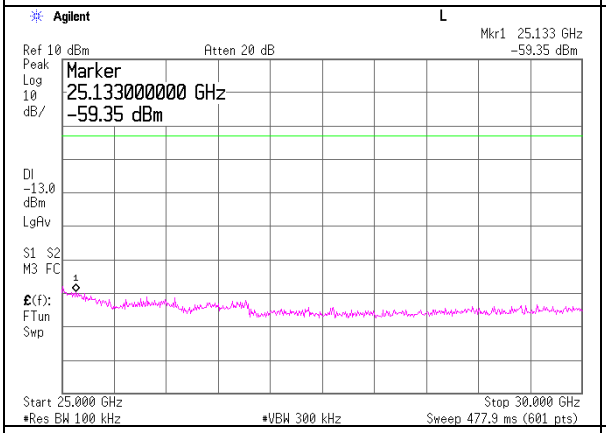

### 20GHz-25GHz



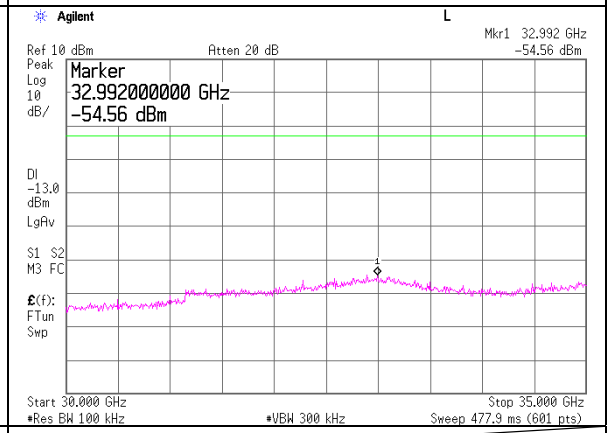
# Conducted Spurious Emission

## Ch:High

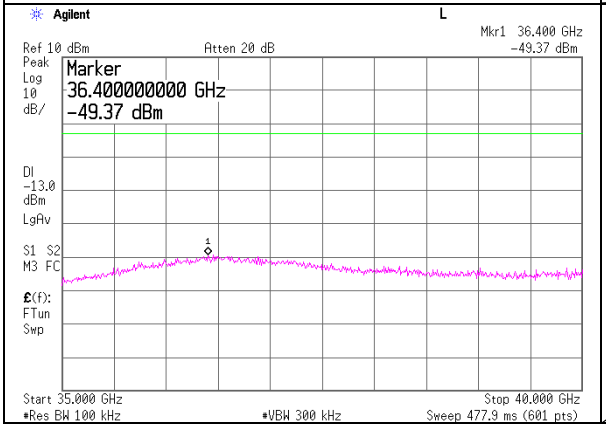
### 25MHz-30GHz

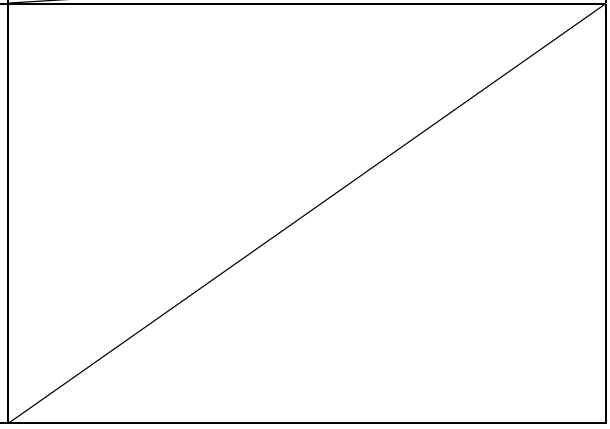



### 30GHz-35GHz



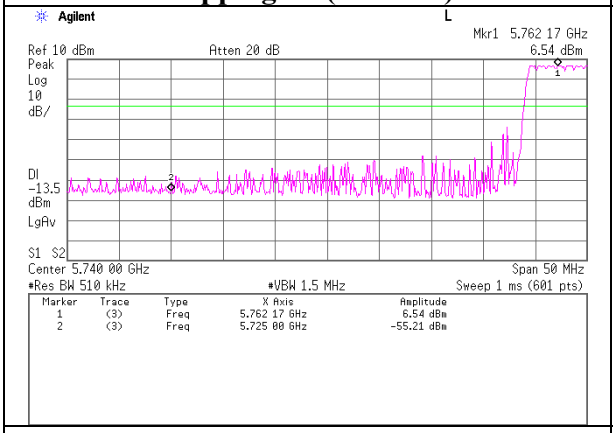

### 35GHz-40GHz



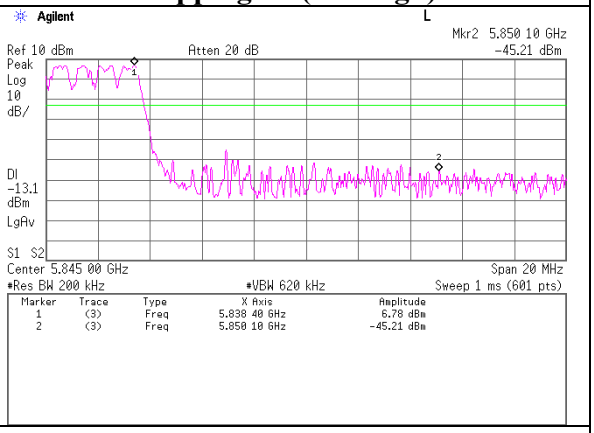



# Conducted Spurious Emission
## Band Edge compliance

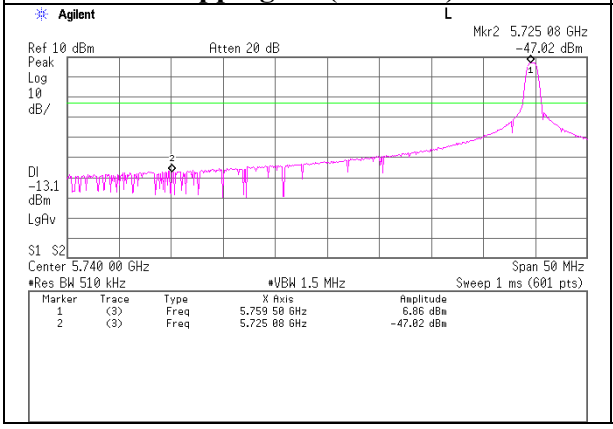
### Hopping on (Ch:Low)



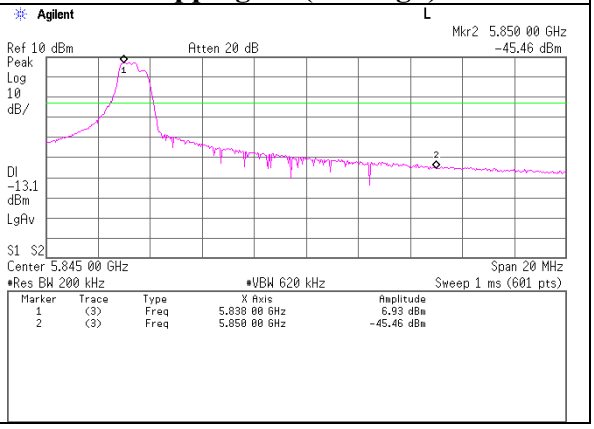

### Hopping on (Ch:High)




### Hopping off (Ch:Low)




### Hopping off (Ch:High)



# APPENDIX 3:Test instruments

**EMI test equipment**

| Control No. | Instrument | Manufacturer | Model No | Test Item | Calibration Date * Interval(month) |
|---|---|---|---|---|---|
| MOS-02 | Digital Humidity Indicator | N.T | NT-1800 | CE | 2004/11/25 * 24 |
| MCC-13 | Coaxial Cable | Fujikura/Agilent | - | CE | 2006/02/23 * 12 |
| MJG-51 | Conversion adapter | - | 101 21 | CE | - |
| MAEC-03 | Anechoic Chamber | TDK | Semi Anechoic Chamber 3m | RE | 2006/03/03 * 12 |
| MSA-04 | Spectrum Analyzer | Agilent | E4448A | RE / CE / AT | 2006/06/02 * 12 |
| MCC-56 | Microwave Cable | Suhner | SUCOFLEX104 | RE | 2006/04/15 * 12 |
| MPA-11 | MicroWave System Amplifier | Agilent | 83017A | RE | 2006/03/27 * 12 |
| MAT-23 | Attenuator(10dB) DC-18GHz | Orient Microwave | BX10-0476-00 | RE | 2006/03/18 * 12 |
| MHA-20 | Horn Antenna 1-18GHz | Schwarzbeck | BBHA9120D | RE | 2006/04/06 * 12 |
| MOS-12 | Thermo-Hygrometer | Custom | CTH-180 | RE | 2006/01/19 * 24 |
| MSTW-14 | EMI measurement program | TSJ | TEPTO-DV | RE / CE | - |
| MHF-11 | High Pass Filter 7-30GHz | TOKIMEC | TF37NCCC | RE | 2006/06/21 * 12 |
| MHA-01 | Horn Antenna 18-26.5G | EMCO | 3160-09 | RE | 2006/01/09 * 12 |
| MCC-63 | Microwave Cable 1-40GHz | Suhner | SUCOFLEX102 | RE | 2006/09/22 * 12 |
| MAT-25 | Attenuator(10dB) (above1GHz) | Agilent | 8493C | RE /AT | 2006/06/02 * 12 |
| MPA-03 | Microwave System Power Amplifier | Agilent | 83050A | RE | 2006/05/16 * 12 |
| MHA-03 | Horn Antenna 26.5-40GHz | EMCO | 3160-10 | RE | 2006/01/09 * 12 |
| MCC-51 | Coaxial cable | UL Apex | - | RE | 2006/03/11 * 12 |
| MPA-13 | Pre Amplifier | SONOA INSTRUMENT | 310 | RE | 2006/03/25 * 12 |
| MAT-30 | Attenuator(6dB) | TME | UFA-01 | RE | 2006/03/11 * 12 |
| MBA-03 | Biconical Antenna | Schwarzbeck | BBA9106 | RE | 2006/01/29 * 12 |
| MLA-03 | Logperiodic Antenna | Schwarzbeck | USLP9143 | RE | 2006/01/29 * 12 |
| MOS-14 | Thermo-Hygrometer | Custom | CTH-180 | AT | 2006/01/19 * 24 |
| MRENT-35 | Power Meter | Anritsu | ML2496A | AT | 2006/04/25 * 12 |
| MRENT-34 | Power sensor | Anritsu | MA2411B | AT | 2006/04/25 * 12 |
| MCC-26 | Microwave Cable 1G-26.5GHz | Suhner | SUCOFLEX104 | AT | 2006/08/29 * 12 |
| MAEC-02 | Anechoic Chamber | TDK | Semi Anechoic Chamber 3m | CE | 2006/04/10 * 12 |
| MJM-06 | Measure | PROMART | SEN1955 | CE/RE | - |
| MTR-03 | Test Receiver | Rohde & Schwarz | ESCI | CE | 2006/03/04 * 12 |

**The expiration date of the calibration is the end of the expired month.**
**All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.**
**Test Item:**

**CE: AC Main Conducted Emission**
**RE: Radiated Spurious Emission**
**AT: Antenna Terminal Conducted Spurious Emission and Maximum Peak Output Power**
**And Carrier Frequency Separation[FHSS] and 20dB Bandwidth[FHSS]**
**And Number of Hopping Frequency[FHSS] and Dwell time[FHSS]**