RF Exposure / SAR Statement

No. : 25IE0109-HO-1

Applicant	**:**	**Panasonic Communications Co., Ltd.**
Type of Equipment	**:**	**Wireless Speakerphone**
Model No.	**:**	**KX-THA16**
FCC ID	**:**	**ACJ96NKX-THA16**

Panasonic Communications Co., Ltd. declares that Model : Wireless Speakerphone complies with FCC radiation exposure requirement specified in the FCC Rules 2.1093.
The "KX-THA16" has 88.31 mW of conducted Peak Output power and 144.54 mW of EIRP.
This kind of equipment is below 60/frequency[GHz] mW(TCB Exclusion List)
so that SAR testing is excluded. The Following calculation is the reference data for 20cm distance.

RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided with the "KX-THA16" as calculated
from FCC OET Bulletin 65 Appendix A, Table (B) Limits for General Population / Uncontrolled Exposure. This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1.0mW/cm^2 uncontrolled exposure limit. The Friis formula used was:

$$S = (P * G) / (4 * \pi * r^2)$$

Where

P =	**88.31**	**mW (Maximum peak output power)**		
G =	**1.64**	**Numerical Antenna gain; equal**	**2.14**	dBi
r =	**20.0**	**cm**		

For: KX-THA16 **S = 0.02876 mW/cm^2**

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EMI TEST REPORT

Test Report No. : 25IE0109-HO-1

Applicant	:	**Panasonic Communications Co., Ltd.**
Type of Equipment	:	**Wireless Speakerphone**
Model No.	:	**KX-THA16**
FCC ID	:	**ACJ96NKX-THA16**
Test standard	:	**FCC Part 15 Subpart C Section 15.207, Section 15.247 : 2005**
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. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.

Date of test:

May 17 to 27, 2005

Tested by:

Mitsuru Fujimura
EMC Service

Kenichi Adachi
EMC Service

Norihisa Hashimoto
EMC Service

Approved by :

Hironobu Shimoji
Group Leader of
EMC Service

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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	:	Wireless Speakerphone
Model No.	:	KX-THA16
Serial No.	:	0080F08013AD 0080F08013A5
Rating	:	AC120V/60Hz or DC3.6V, 1500mAh
Country of Manufacture	:	Japan
Receipt Date of Sample	:	May 23, 2005
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)

2.2 Product Description

Model No: KX-THA16 (referred to as the EUT in this report) is the Wireless Speakerphone.

Clock frequencies in the system	13.000MHz (standard clock) 117.000MHz (RFIC internal clock)
Equipment Type	Transceiver
Frequency of Operation	2402MHz – 2480MHz
Type of Modulation	FHSS
Antenna Type	Dipole (Main Antenna) and Chip (Sub Antenna)
Antenna Gain	2.14 dBi (Main Antenna), 1 dBi (Sub Antenna)
Mode of Operation	Duplex
ITU code	F1D
Power Supply (Inner)	DC2.5V

FCC 15.31 (e)
This EUT provides stable voltage(DC3.6V), and it is constantly converted into and provided with DC2.5V for the Operational voltage within RF Module. 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 fixed inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C : 2005
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits : 2005
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz : 2005

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin*0)	Results
1	Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	<Mode 1> 22.7 dB 20.2502MHz AV, N(Main antenna) <Mode 2> 22.6 dB 20.2496MHz AV, N (Main antenna)	Complied
2	Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)	Conducted	N/A	*See data.	Complied
3	20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)	Conducted	N/A		Complied
4	Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)(iii)	Conducted	N/A		Complied
5	Dwell time	ANSI C63.4:2003 13.Measurement of intentional radiators	Section15.247(a)(1)(iii)	Conducted	N/A		Complied
6	Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(b)(1)	Conducted	N/A		Complied
7	Band Edge Compliance	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d)	Conducted	N/A		Complied
8	Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d)	Conducted/ Radiated	N/A	<Mode 1> 5.2dB 320.002MHz QP, Vertical <Mode 2> 5.0dB 318.900MHz QP Vertical	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.

Uncertainty:
*The data listed in this report meets the limits unless the uncertainty is taken into consideration.
Conducted Emission
The measurement uncertainty (with a 95% confidence level) for this test is ±1.3dB.
Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ±4.5dB(3m)/ ±4.7dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ±5.2dB(3m)/ ±3.8dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ±6.6dB.
Other test except Conducted Emission and Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test is ±3.0dB.

*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 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
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	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	IC4247	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 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 and No.2 semi-anechoic and No.3 shielded room.

3.5 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

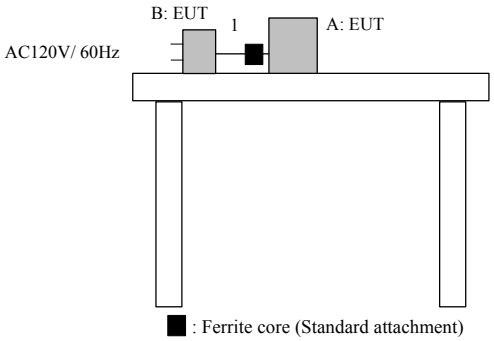
SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

The mode is used : [Mode1]
Transmitting mode(Packet size DH1, DH5)
Low Channel :2402MHz
Mid Channel :2441MHz
High Channel :2480MHz
Inquiry
*Remarks: AFH OFF mode: 79ch, AFH ON mode 20ch

[Mode2]
Transmitting mode(Packet size DH1, DH5)
Low Channel :2402MHz
Mid Channel :2440MHz
High Channel :2480MHz
*Remarks: AFH OFF mode: 40ch, AFH ON mode 20ch

4.2 * Configuration and peripherals



* Cabling was 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	FCC ID
A	Wireless Speakerphone	KX-THA16	0080F08013AD *1) 0080F08013A5 *2)	Panasonic Communications Co., Ltd.	ACJ96NKX-THA16 (EUT)
B	AC Adapter	PQLV203	24#A2-1A	Panasonic Communications Co., Ltd.	EUT

*1) Used for Spurious emission test and Conducted emission test
*2) Used for Antenna Terminal Conducted tests

List of cables used

No.	Name	Length (m)	Shield	Backshell Material
1	DC Cable	1.7	N	Polyvinyl chloride

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1m 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.

1) For the tests on EUT itself (as a stand alone equipment)
Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN /(AMN) to the input power source. 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 3**
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 3
Test result : Pass

[Radiated]
Test Procedure
EUT was placed on a platform of nominal size, 1.0m by 0.5m, 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).
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.

***Delta Marker Method (Measurement for Band-edge)**
STEP 1) Perform an in-band field strength measurement of the fundamental emission using the RBW table below.
STEP 2) Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 1% of the total span, and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission.
STEP 3) Subtract the delta measured in STEP 2) from the field strengths measured in STEP 1). The result is the field strength of band-edge.

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 15.205.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz(T/R) 20dBc : RBW: 100kHz VBW: 300kHz (S/A)	PK: RBW:1MHz/VBW: 1MHz AV: RBW:1MHz/VBW:10Hz 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 3
Test result : Pass

*There was no difference in levels at low/mid/high channels between 30MHz and 1GHz, and thus test was conducted at Tx 2441MHz only.

SECTION 7: Bandwidth

Test Procedure

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

Test data : **APPENDIX 3**
Test result : **Pass**

SECTION 8: Maximum Peak Output Power

Test Procedure
The Maximum Peak Output Power was measured with a power meter connected to the antenna port.

Test data : **APPENDIX 3**
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 3**
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 3**
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 3**
Test result : **Pass**

APPENDIX 1: Photographs of test setup

Conducted Emission

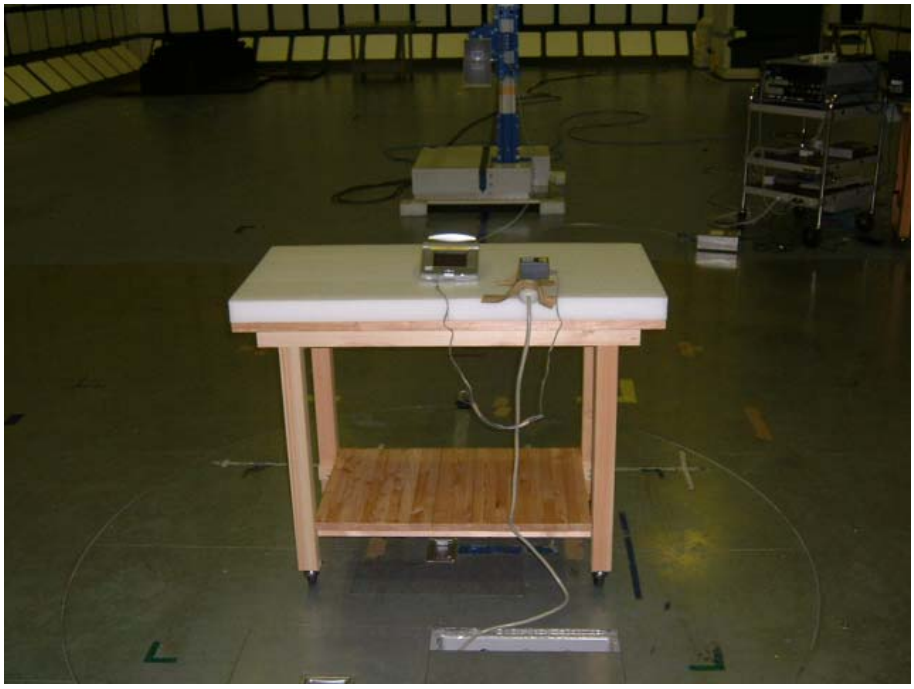
Front

Rear

Spurious Emission (Radiated)

Front

Rear

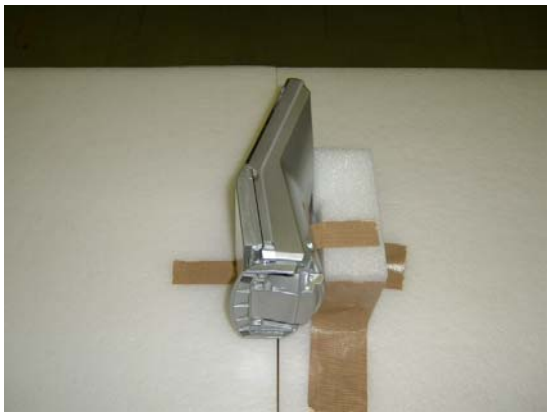


Worst Case Position
Main antenna (Y-axis:Horizontal / Y-axis:Vertical)
Sub antenna (X-axis:Horizontal / X-axis:Vertical)

X-axis

Y-axis

Z-axis



APPENDIX 2:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MCC-06	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	AT	2005/02/03 * 12
MAT-21	Attenuator (20dB) (above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	AT	2005/01/11 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	AT	2004/06/12 * 12
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE	2004/11/13 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE	2004/11/12 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2004/08/26 * 12
MPA-05	Pre Amplifier	TSJ	TSJ 1-26.5GHz PreAmp	RE	2004/06/12 * 12
MAT-01	Attenuator (20dB) (above1GHz)	Agilent	8490D,020	RE	2005/01/11 * 12
MHF-02	High Pass Filter	Tokimec	TF323DCA	RE	2004/09/18 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2005/02/03 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/01/10 * 12
MHA-02	Horn Antenna	EMCO	3160-09	RE	2005/01/10 * 12
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	CE	2005/04/11 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	CE	2005/02/24 * 12
MRENT-14	Spectrum Analyzer	Advantest	R3273	CE	2005/02/21 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	CE	2005/02/02 * 12
MLS-06	LISN (AMN)	Schwarzbeck	NSLK8127	CE	2005/02/04 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2005/02/24 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2004/10/14 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2004/10/14 * 12
MAT-07	Attenuator (6dB)	Weinschel Corp	2	RE	2004/12/16 * 12
MPA-06	Pre Amplifier	Hewlett Packard	8447D	RE	2004/08/29 * 12
MST-03	Power Meter	Agilent	E4416A	AT	2005/03/16 * 12
MPSE-04	Power sensor	Agilent	E9327A	AT	2005/03/29 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
Test Item:

CE: AC Main Conducted Emission
AT: Antenna terminal conducted measurement
RE: Radiated Spurious Emission

APPENDIX 3: Data of EMI test

Conducted Emission [Mode 1]

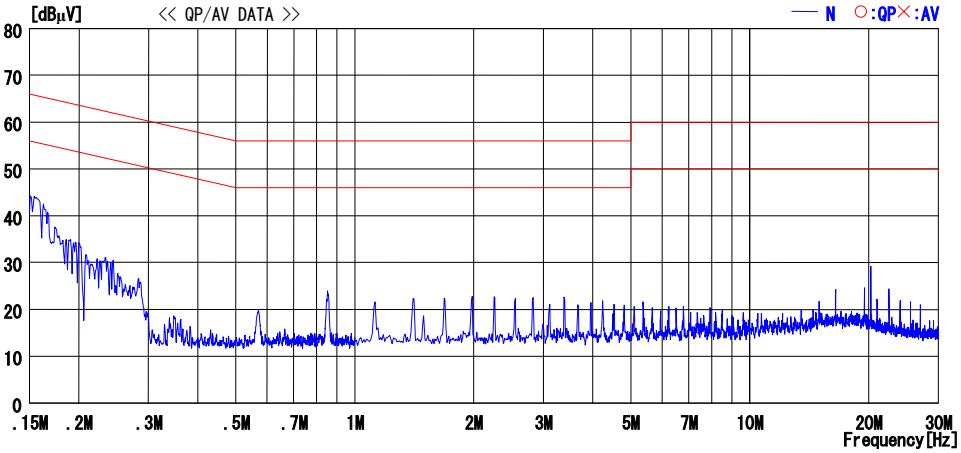
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/26 23:14:51

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode1 Tx2402 / Main Antenna DH5

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



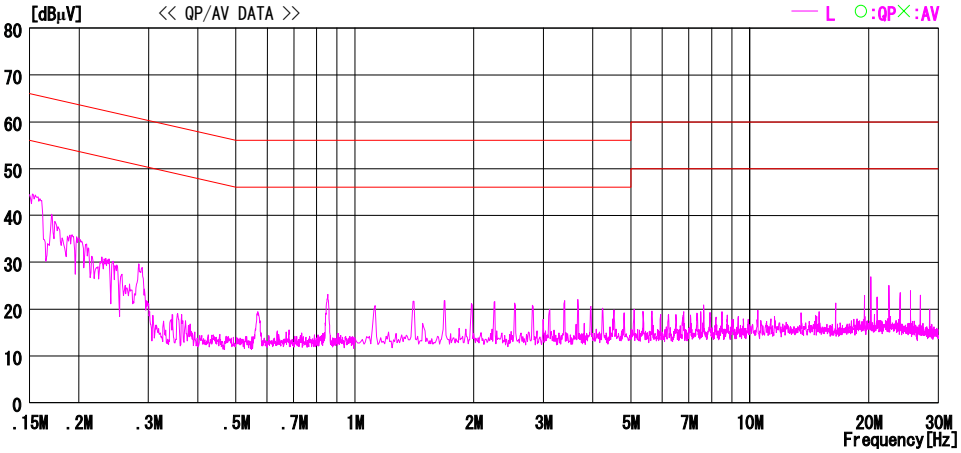


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 1]

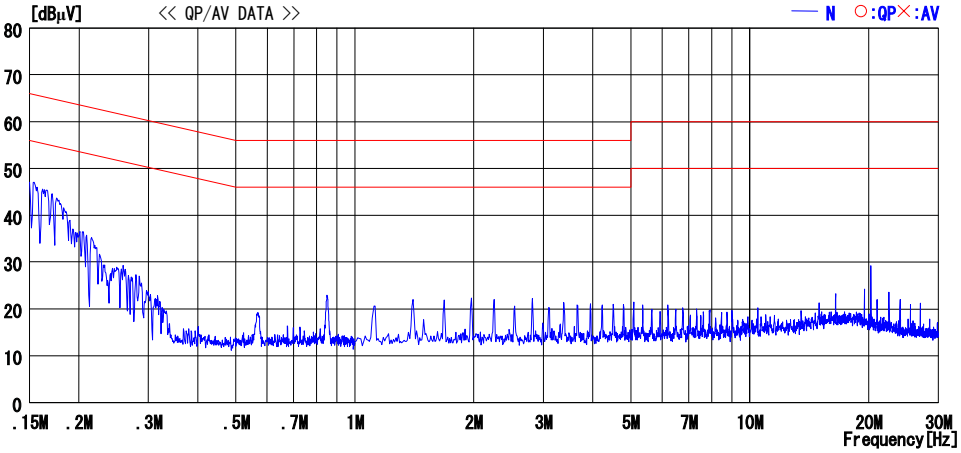
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/26 23:24:07

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode1 Tx2441 / Main Antenna DH5

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



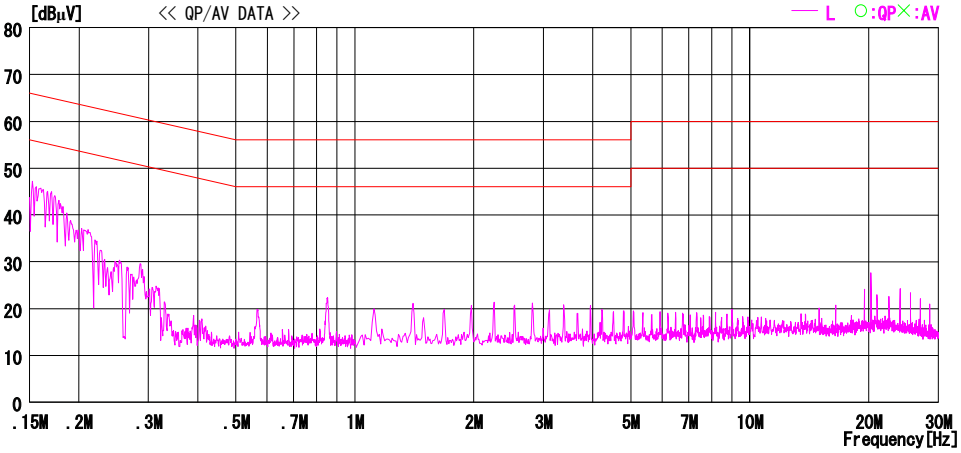


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 1]

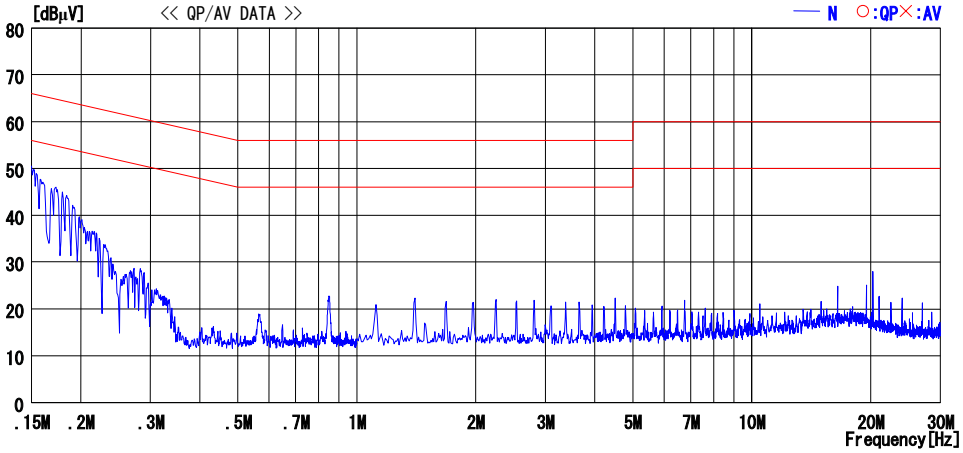
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/26 23:33:44

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode1 Tx2480 / Main Antenna DH5

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



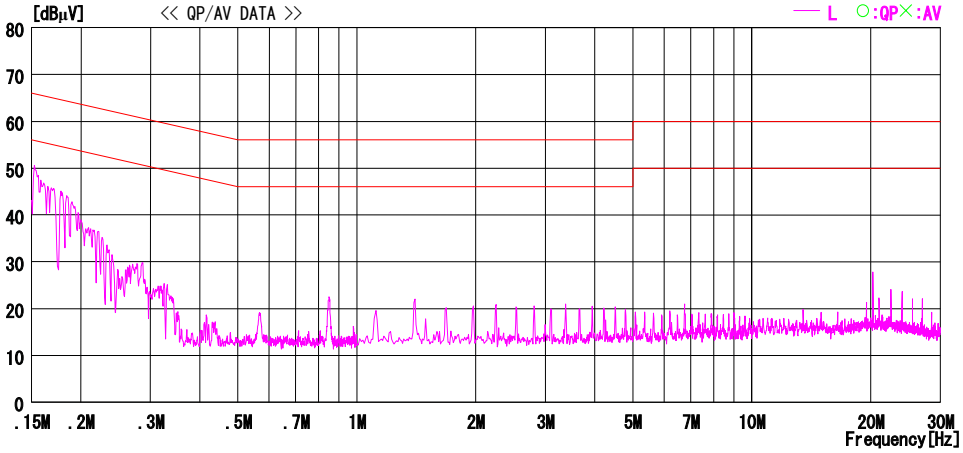


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 1]

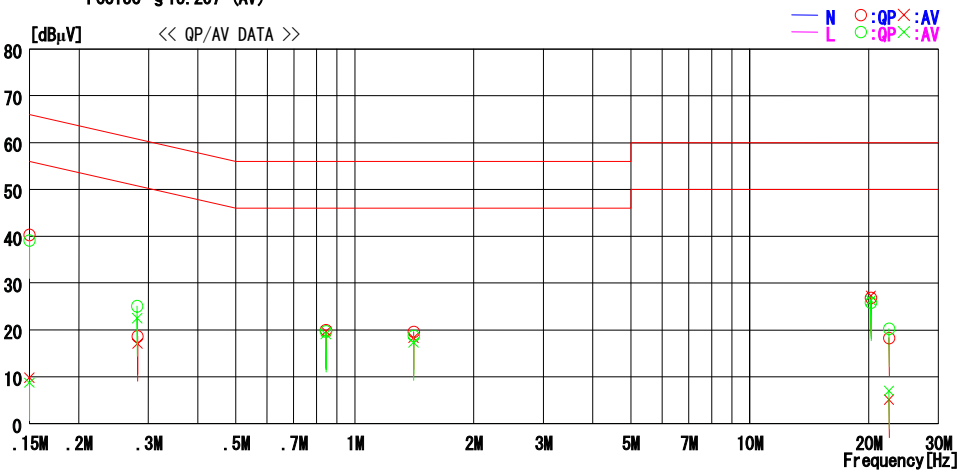
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/26 23:33:44

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode1 Tx2480 / Main Antenna DH5

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



NO	FREQ [MHz]	READING QP [dBμV]	READING AV [dBμV]	C.F [dB]	RESULT QP [dBμV]	RESULT AV [dBμV]	LIMIT QP [dBμV]	LIMIT AV [dBμV]	MARGIN QP [dB]	MARGIN AV [dB]	PHASE
1	0.1500	40.2	9.7	0.1	40.3	9.8	66.0	56.0	25.7	46.2	N
2	0.2818	18.5	17.0	0.1	18.6	17.1	60.8	50.8	42.2	33.7	N
3	0.8452	19.7	19.4	0.3	20.0	19.7	56.0	46.0	36.0	26.3	N
4	1.4082	19.2	17.9	0.4	19.6	18.3	56.0	46.0	36.4	27.7	N
5	20.2502	25.0	25.5	1.8	26.8	27.3	60.0	50.0	33.2	22.7	N
6	22.5011	16.3	3.1	2.0	18.3	5.1	60.0	50.0	41.7	44.9	N
7	0.1500	39.0	8.6	0.1	39.1	8.7	66.0	56.0	26.9	47.3	L
8	0.2811	25.0	22.4	0.1	25.1	22.5	60.8	50.8	35.7	28.3	L
9	0.8446	19.4	18.8	0.3	19.7	19.1	56.0	46.0	36.3	26.9	L
10	1.4084	18.3	16.9	0.4	18.7	17.3	56.0	46.0	37.3	28.7	L
11	20.2499	24.0	24.5	1.8	25.8	26.3	60.0	50.0	34.2	23.7	L
12	22.5016	18.2	5.0	2.0	20.2	7.0	60.0	50.0	39.8	43.0	L

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.

Conducted Emission [Mode 2]

(Main Antenna)

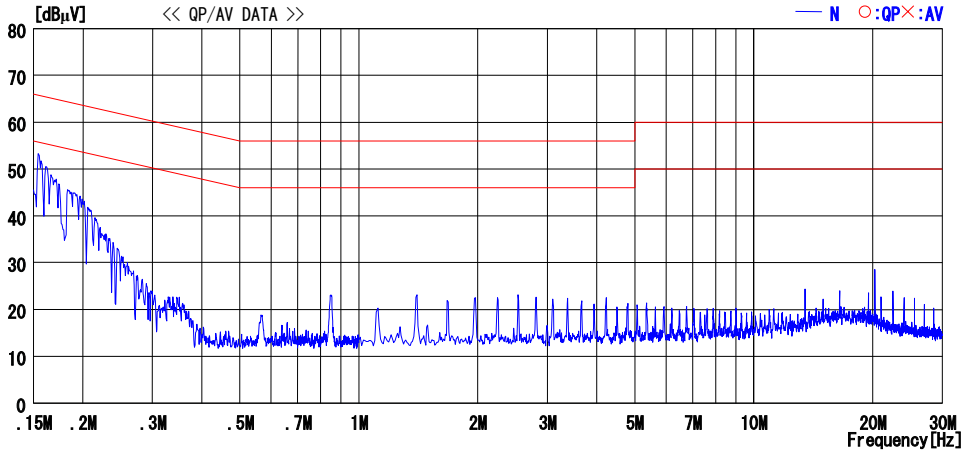
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 00:44:19

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2402 / Main Antenna DH5

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



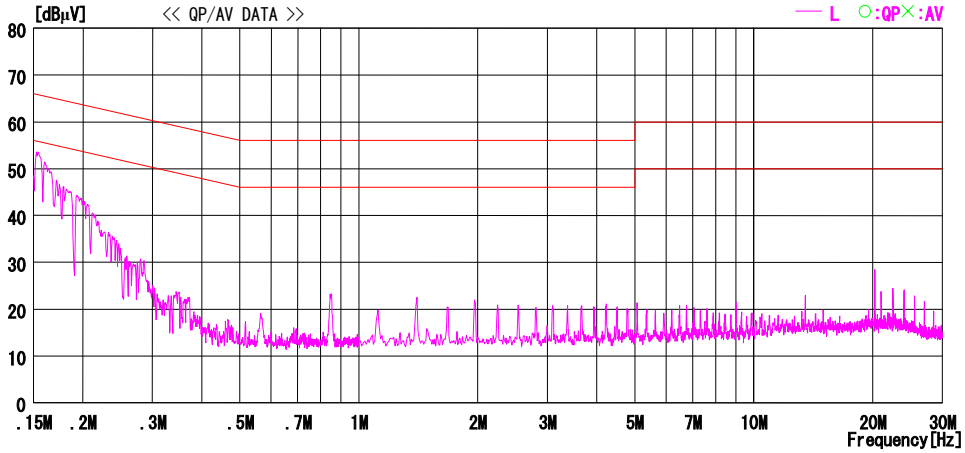


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 2]

(Main Antenna)

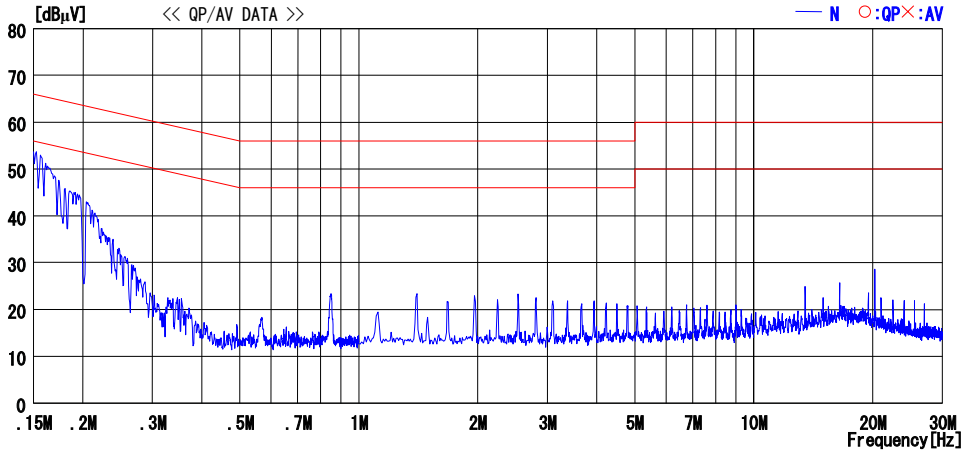
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 00:49:15

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2440 / Main Antenna DH5

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



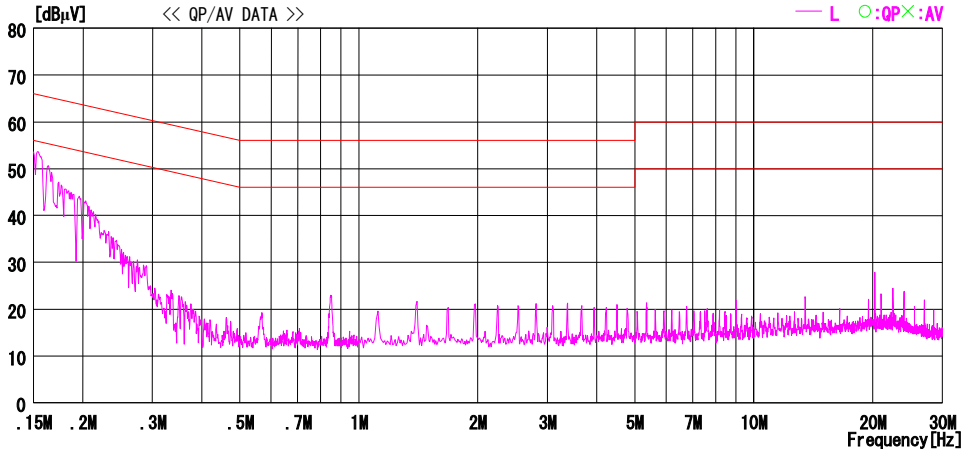


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 2]

(Main Antenna)

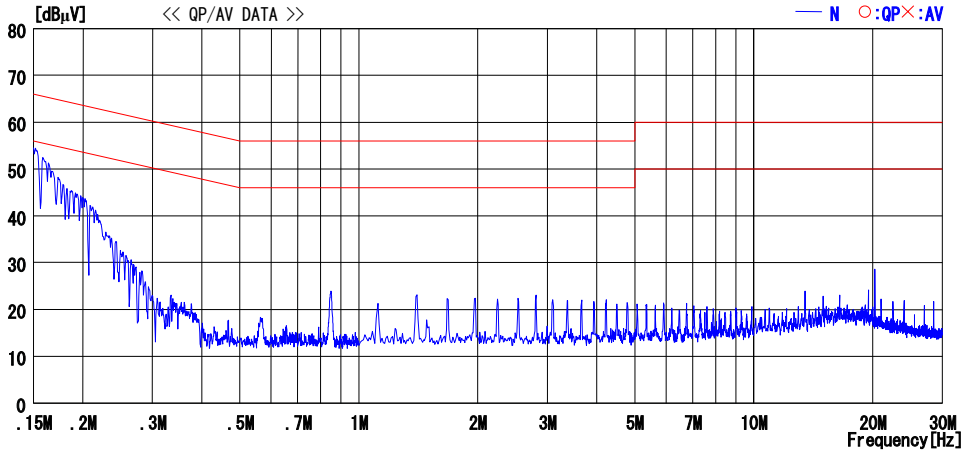
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 00:56:21

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2480 / Main Antenna DH5

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



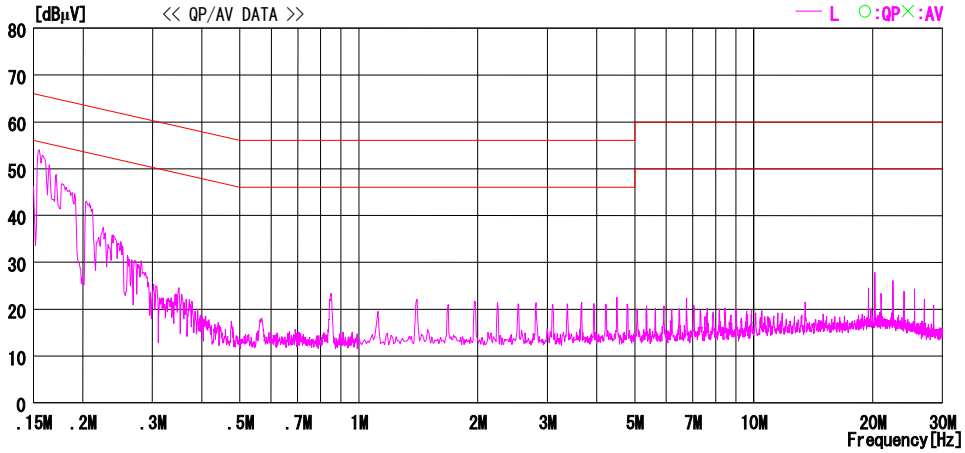


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 2]

(Main Antenna)

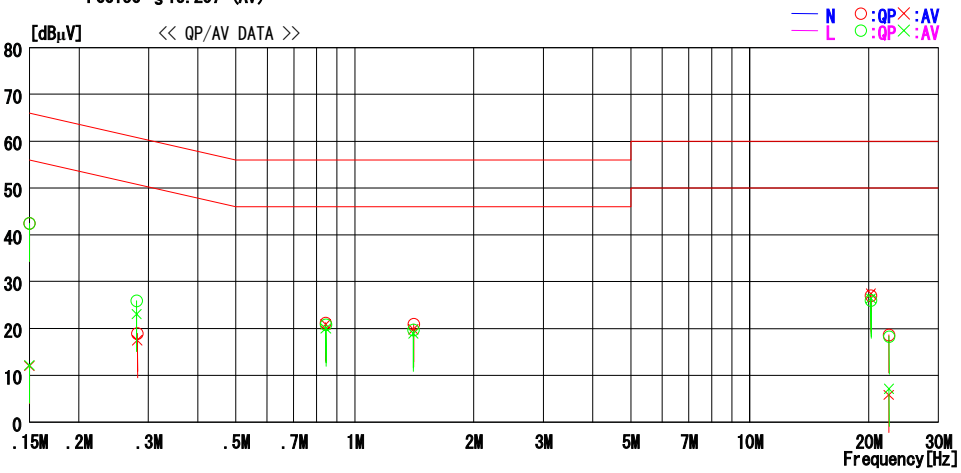
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 00:56:21

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2480 / Main Antenna DH5

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



NO	FREQ [MHz]	READING QP [dBμV]	READING AV [dBμV]	C.F [dB]	RESULT QP [dBμV]	RESULT AV [dBμV]	LIMIT QP [dBμV]	LIMIT AV [dBμV]	MARGIN QP [dB]	MARGIN AV [dB]	PHASE
1	0.1500	42.3	11.9	0.1	42.4	12.0	66.0	56.0	23.6	44.0	N
2	0.2815	18.8	17.4	0.1	18.9	17.5	60.8	50.8	41.9	33.3	N
3	0.8437	20.9	20.6	0.3	21.2	20.9	56.0	46.0	34.8	25.1	N
4	1.4075	20.5	19.4	0.4	20.9	19.8	56.0	46.0	35.1	26.2	N
5	20.2496	25.2	25.6	1.8	27.0	27.4	60.0	50.0	33.0	22.6	N
6	22.5004	16.6	3.8	2.0	18.6	5.8	60.0	50.0	41.4	44.2	N
7	0.1500	42.3	12.0	0.1	42.4	12.1	66.0	56.0	23.6	43.9	L
8	0.2800	25.8	23.0	0.1	25.9	23.1	60.8	50.8	34.9	27.7	L
9	0.8447	20.5	19.7	0.3	20.8	20.0	56.0	46.0	35.2	26.0	L
10	1.4069	19.3	18.5	0.4	19.7	18.9	56.0	46.0	36.3	27.1	L
11	20.2506	24.2	24.6	1.8	26.0	26.4	60.0	50.0	34.0	23.6	L
12	22.5042	16.3	5.1	2.0	18.3	7.1	60.0	50.0	41.7	42.9	L

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.

Conducted Emission [Mode 2]

(Sub Antenna)

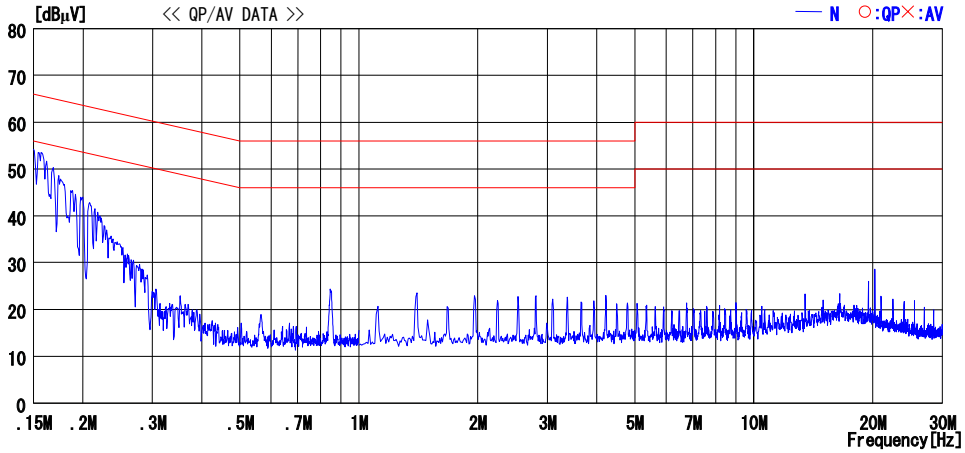
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 01:15:30

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2402 / Sub Antenna DH5

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



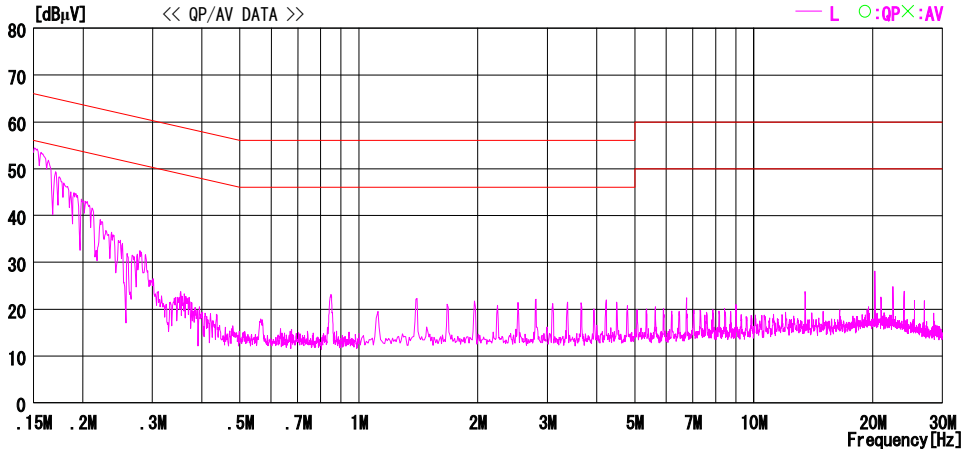


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 2]

(Sub Antenna)

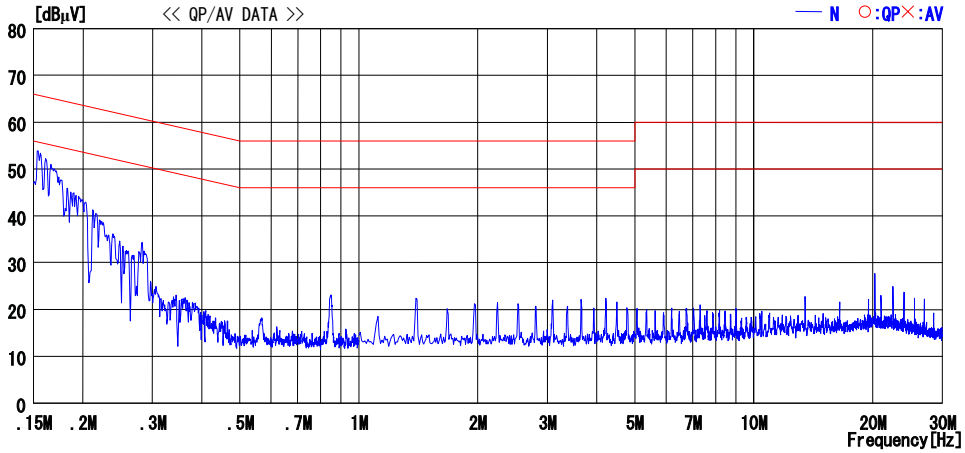
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 01:20:03

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2440 / Sub Antenna DH5

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



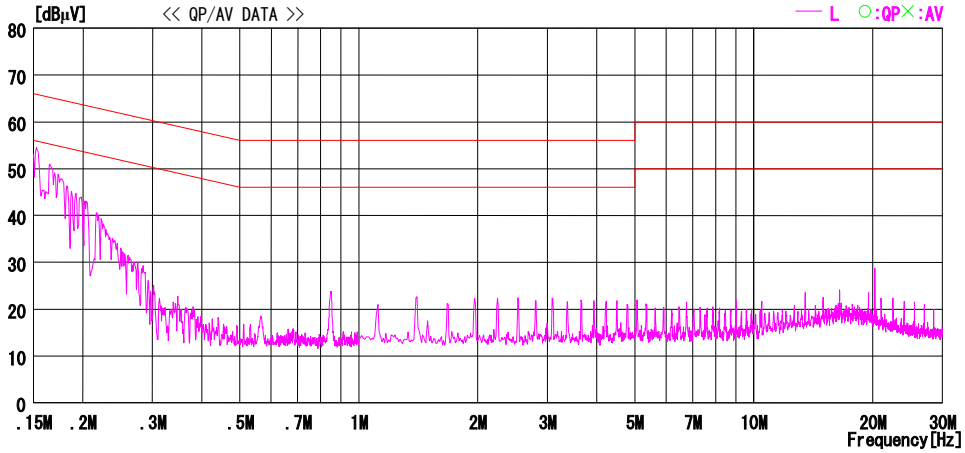


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 2]

(Sub Antenna)

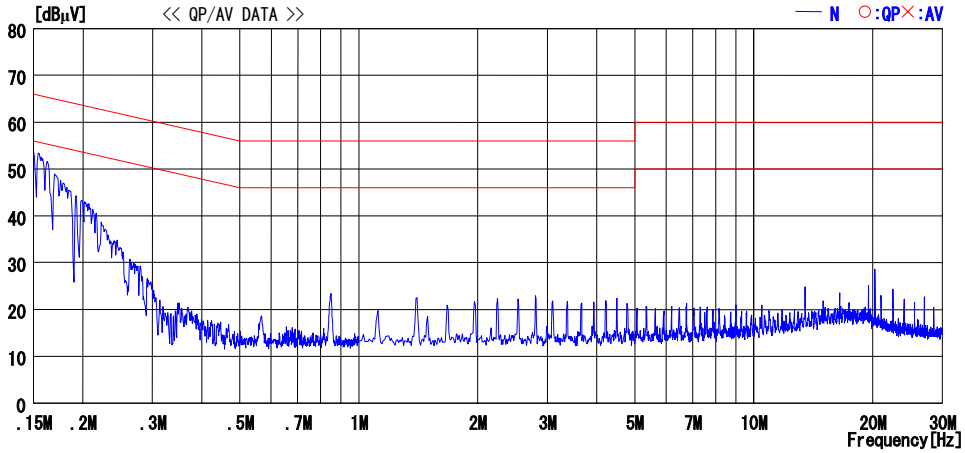
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 01:24:27

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2480 / Sub Antenna DH5

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



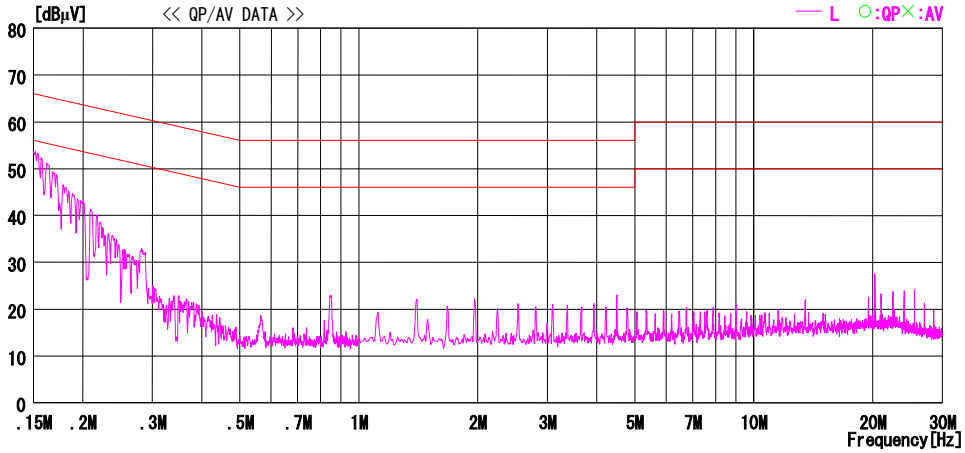


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission [Mode 2]

(Sub Antenna)

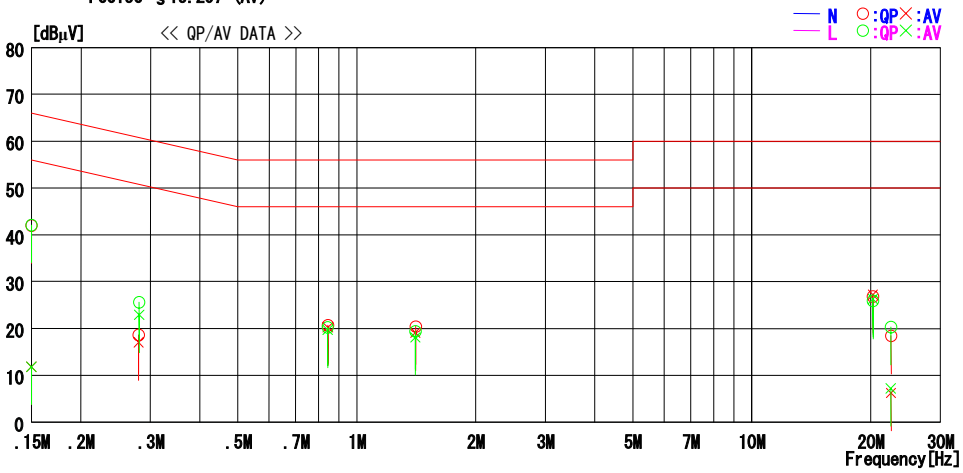
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/05/27 01:24:27

Applicant	: Panasonic Communications Co.,Ltd	Report No.	: 25IE0109-HO
Kind of EUT	: Wireless Speakerphone	Power	: AC120V/60Hz
Model No.	: KX-THA16	Temp℃/Humi%	: 25deg.C / 42%
Serial No.	: 0080 F080 13AD	Operator	: Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2480 / Sub Antenna DH5

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



NO	FREQ [MHz]	READING QP [dBμV]	READING AV [dBμV]	C.F [dB]	RESULT QP [dBμV]	RESULT AV [dBμV]	LIMIT QP [dBμV]	LIMIT AV [dBμV]	MARGIN QP [dB]	MARGIN AV [dB]	PHASE
1	0.1500	41.9	11.7	0.1	42.0	11.8	66.0	56.0	24.0	44.2	N
2	0.2801	18.5	16.9	0.1	18.6	17.0	60.8	50.8	42.2	33.8	N
3	0.8447	20.4	19.9	0.3	20.7	20.2	56.0	46.0	35.3	25.8	N
4	1.4073	20.0	18.7	0.4	20.4	19.1	56.0	46.0	35.6	26.9	N
5	20.2489	25.0	25.4	1.8	26.8	27.2	60.0	50.0	33.2	22.8	N
6	22.5011	16.4	4.2	2.0	18.4	6.2	60.0	50.0	41.6	43.8	N
7	0.1500	42.0	11.7	0.1	42.1	11.8	66.0	56.0	23.9	44.2	L
8	0.2810	25.5	22.8	0.1	25.6	22.9	60.8	50.8	35.2	27.9	L
9	0.8434	19.9	19.4	0.3	20.2	19.7	56.0	46.0	35.8	26.3	L
10	1.4072	19.0	17.7	0.4	19.4	18.1	56.0	46.0	36.6	27.9	L
11	20.2511	24.1	24.5	1.8	25.9	26.3	60.0	50.0	34.1	23.7	L
12	22.5000	18.3	5.2	2.0	20.3	7.2	60.0	50.0	39.7	42.8	L

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.

[Mode 1]

Carrier Frequency Separation [Mode 1]

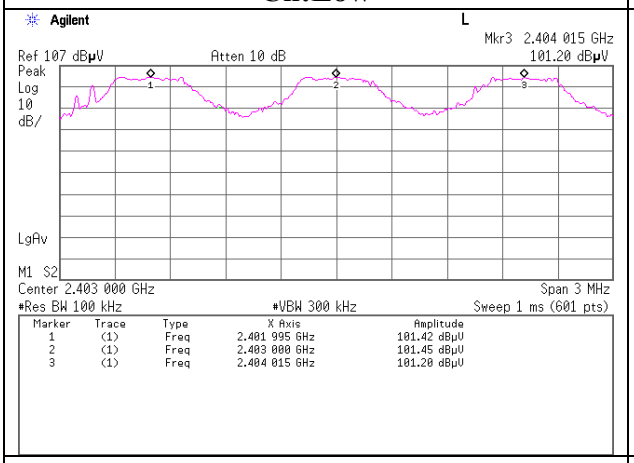
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx(Hopping on)/Inquiry	ENGINEER	:	Mitsuru Fuimura

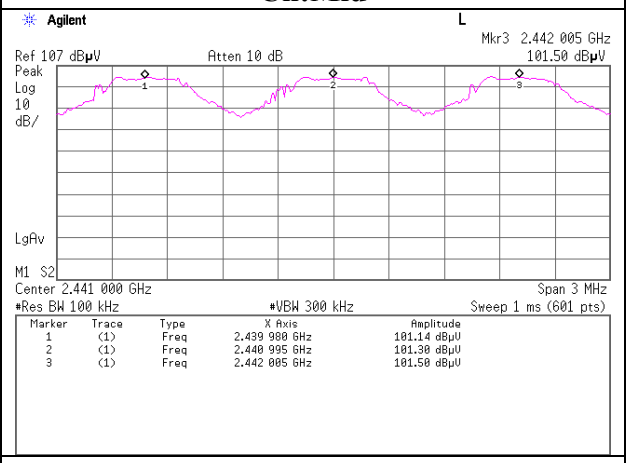
Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.005	> 25kHz or two-thirds of 20dB Bandwidth
Mid	2441.0	1.010	> 25kHz or two-thirds of 20dB Bandwidth
High	2480.0	1.000	> 25kHz or two-thirds of 20dB Bandwidth
Inquiry	2441.0	1.970	> 25kHz or two-thirds of 20dB Bandwidth

Carrier Frequency Separation [Mode 1]

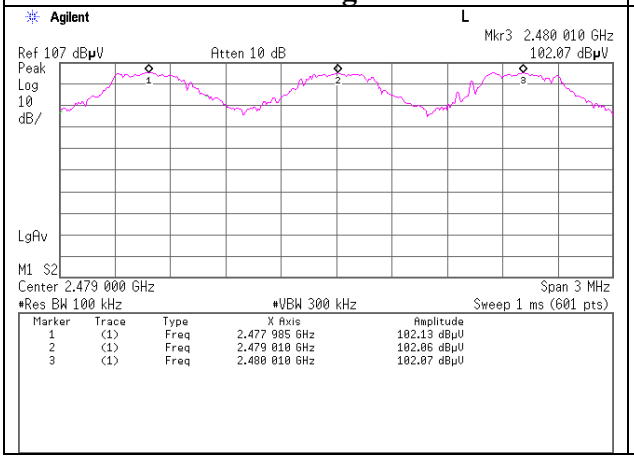
Ch:Low



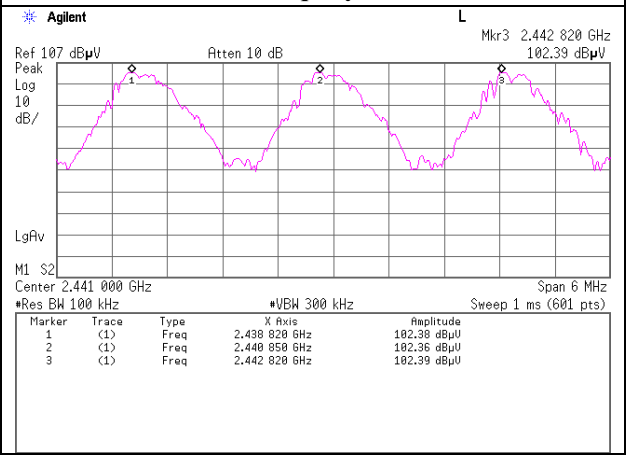
Ch:Mid



Ch:High



Inquiry



20dB Bandwidth [Mode 1]

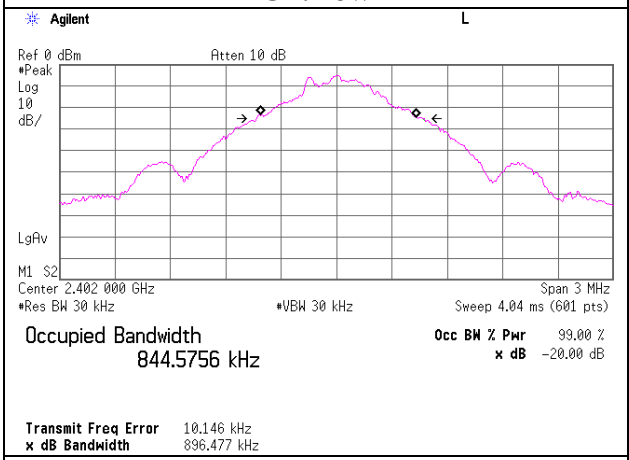
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx (Hopping off) /Inquiry	ENGINEER	:	Mitsuru Fujimura

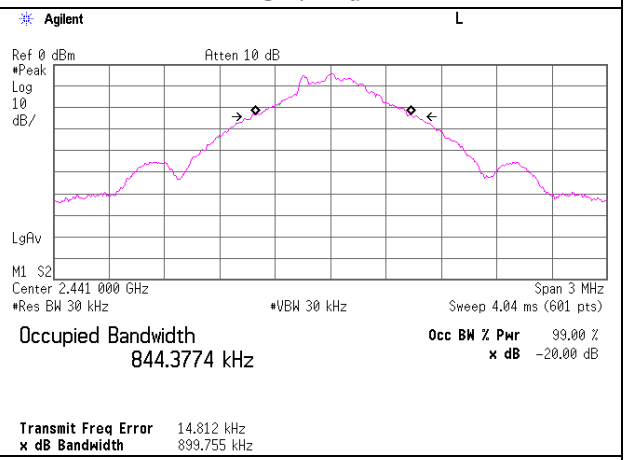
Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.896	-
Mid	2441.0	0.900	-
High	2480.0	0.905	-
Inquiry	2441.0	0.821	-

20dB Bandwidth [Mode 1]

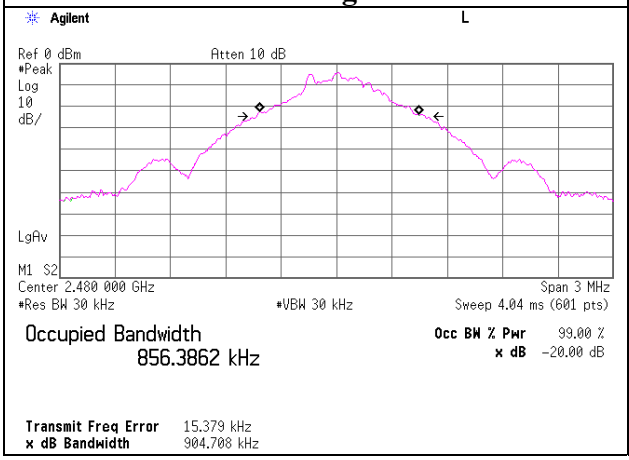
Ch:Low



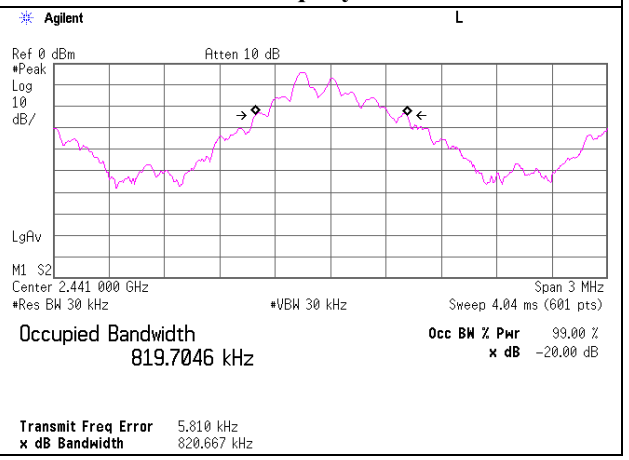
Ch:Mid



Ch:High



Inquiry



Number of Hopping Frequency [Mode 1]

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	FCC15.247(a)(1)(iii)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx (Hopping on) /Inquiry	ENGINEER	:	Mitsuru Fujimura

Mode 1, AFH off

Mode	Number of channel [time]	Limit [time]
Tx(Hopping on)	79	≧15

Mode 1, AFH off

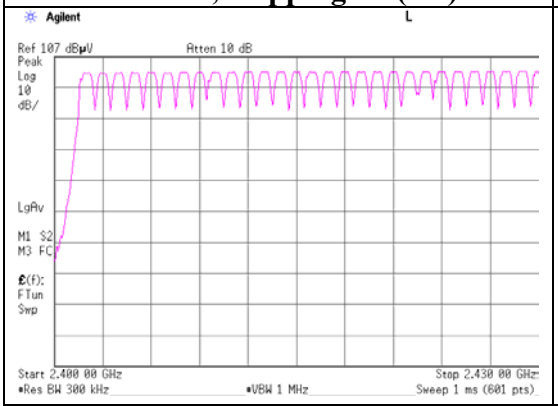
Mode	Number of channel [time]	Limit [time]
Inquiry	32	≧15

Mode 1, AFH on

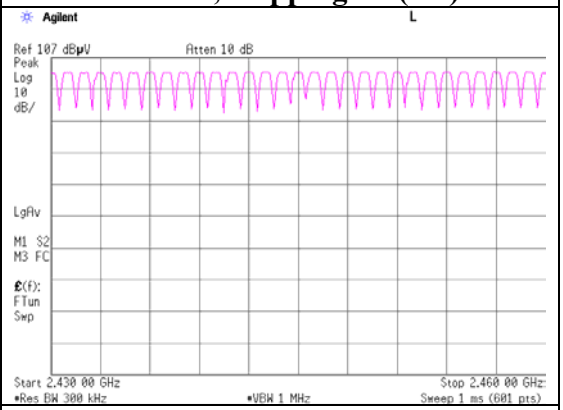
Mode	Number of channel [time]	Limit [time]
Tx(Hopping on)	20	≧15

Number of Hopping Frequency [Mode 1]

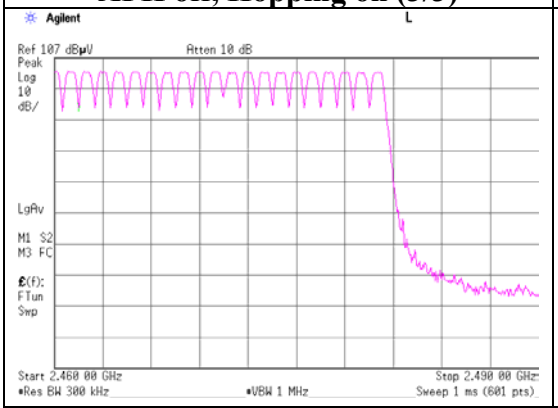
AFH off, Hopping on (1/3)



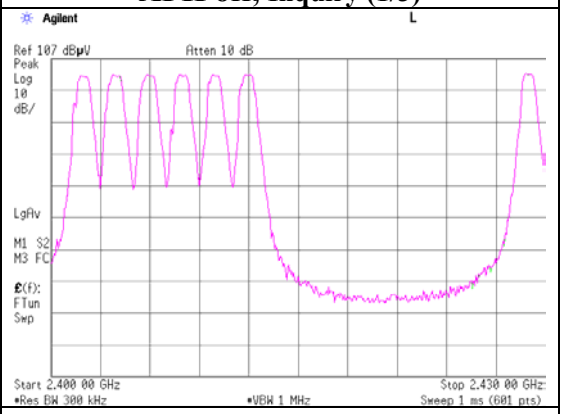
AFH off, Hopping on (2/3)



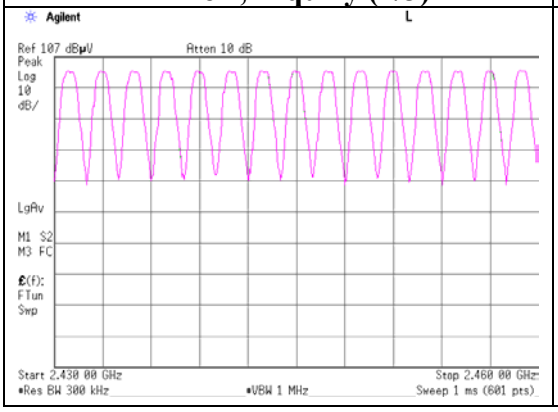
AFH off, Hopping on (3/3)



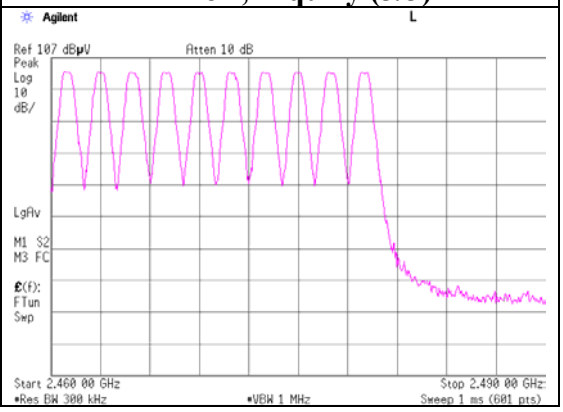
AFH off, Inquiry (1/3)



AFH off, Inquiry (2/3)

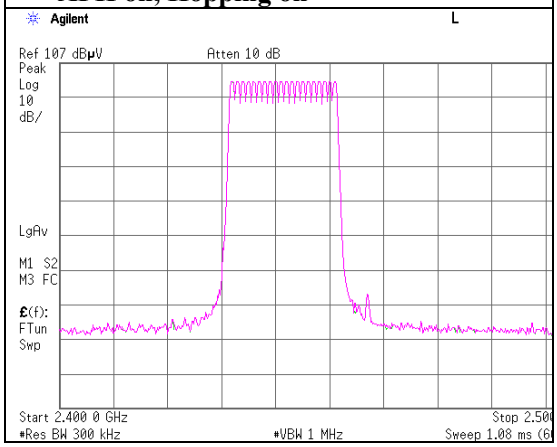


AFH off, Inquiry (3/3)



Number of Hopping Frequency [Mode 1]

AFH on, Hopping on



Dwell Time [Mode 1]

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	FCC15.247(a)(1)(iii)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx (Hopping on) /Inquiry	ENGINEER	:	Mitsuru Fujimura

Mode 1, AFH off

Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	52 times /5sec. x 31.6 = 328.64 times	0.573	188	400
DH5	16 times / 5 sec. x 31.6 = 101.12 times	3.150	319	400
Inquiry	10 times / 0.1sec. x 12.8 = 1280 times	0.233	298	400

Mode 1, AFH on

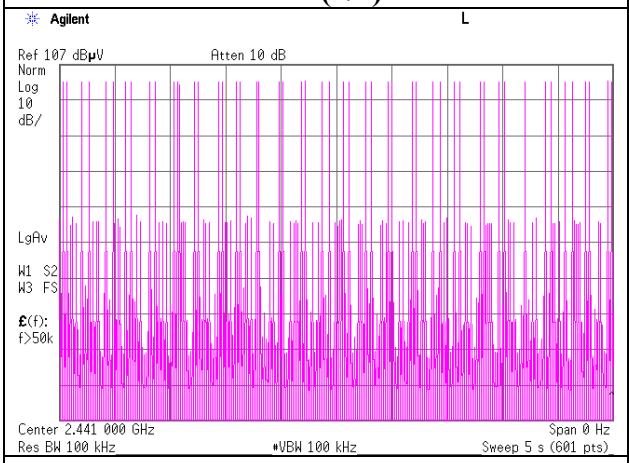
Mode	Number of transmission in a 8(20 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	54 times /1sec. x 8 = 432.00 times	0.580	251	400
DH5	71 times / 5 sec. x 8 = 113.60 times	3.100	352	400

Dwell Factor caliculation for Spurious emissions : = 20 x log ((3.100 [ms] x (71 / (5[s] /0.100 [s]))) / 100 [ms]) = -27.1 dB

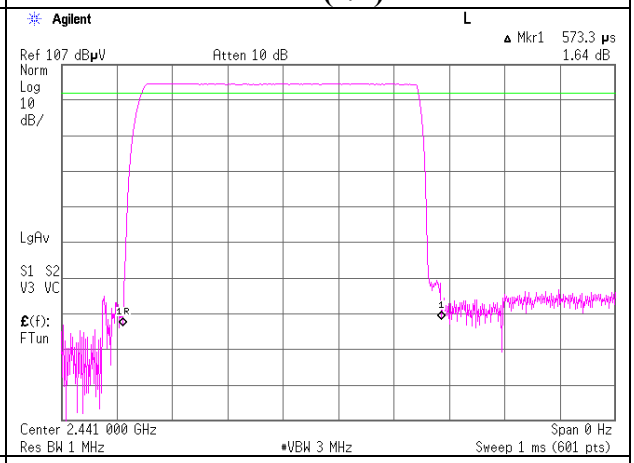
Dwell Time [Mode 1]

AFH off

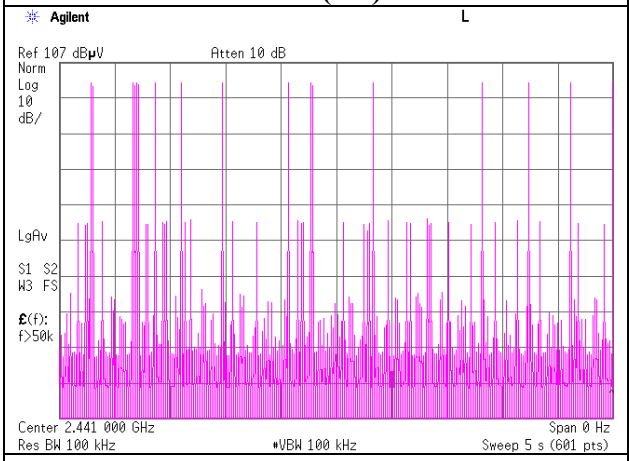
DH1 (1/2)



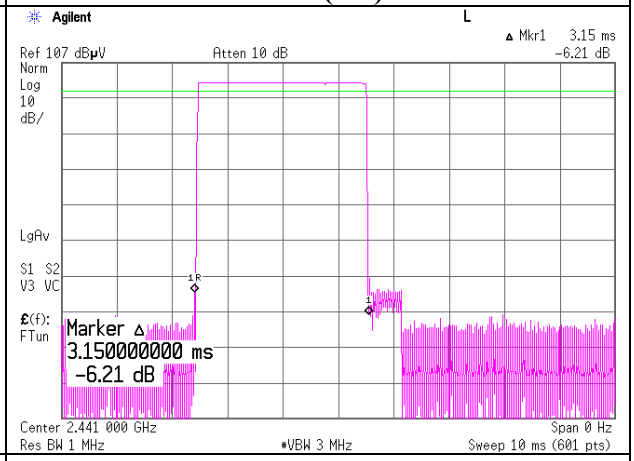
DH1 (2/2)



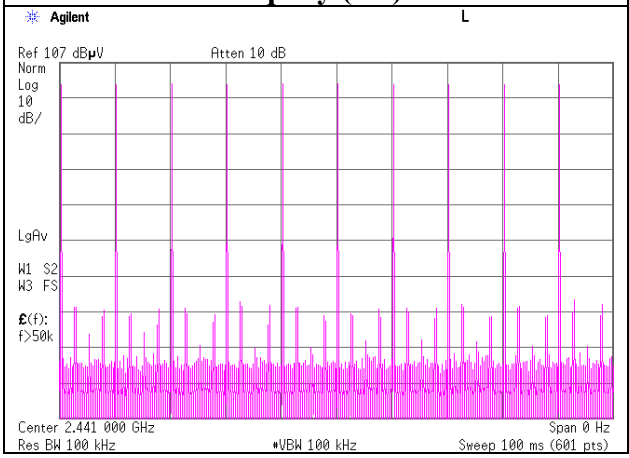
DH5 (1/2)



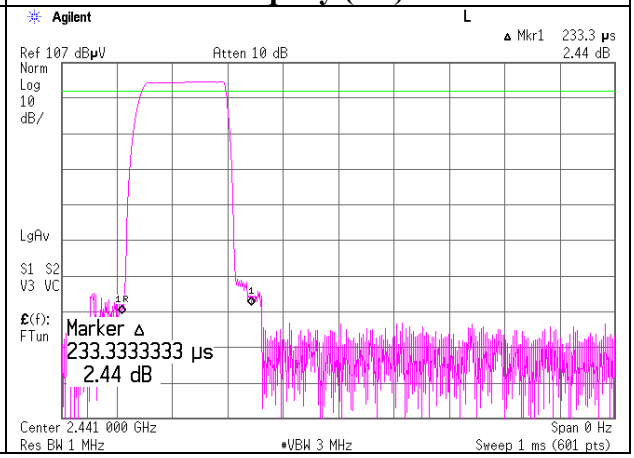
DH5 (2/2)



Inquiry (1/2)



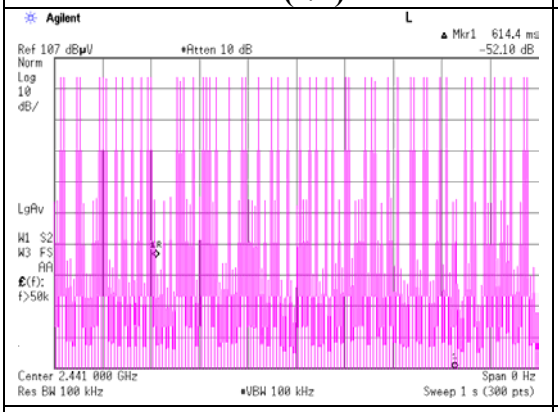
Inquiry (2/2)



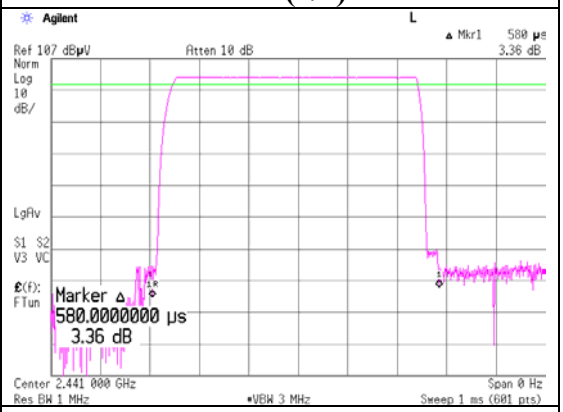
Dwell Time [Mode 1]

AFH on

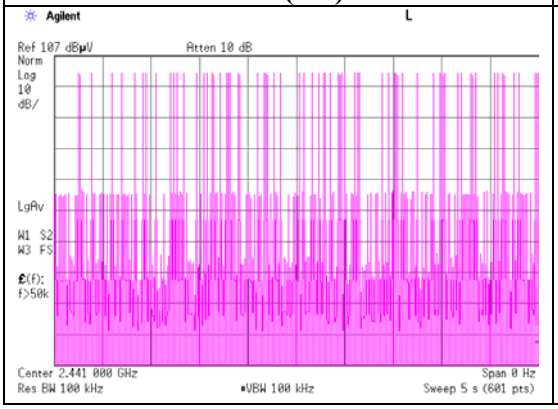
DH1 (1/2)



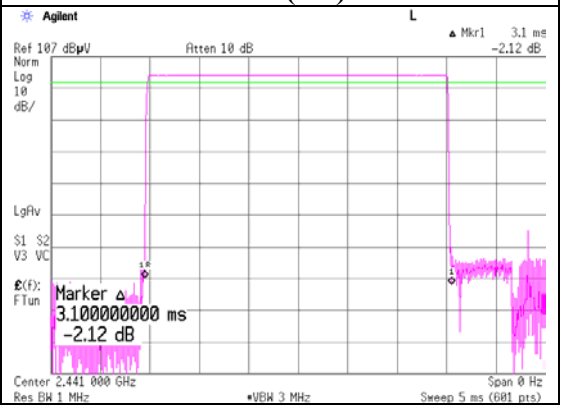
DH1 (2/2)



DH5 (1/2)



DH5 (2/2)



Maximum Peak Output Power [Mode 1]

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Panasonic Communications Co.,Ltd.	REGULATION	: Fcc Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Wireless Speakerphone	TEST DISTANCE	: -
MODEL	: KX-THA16	DATE	: 05/17/2005
S/ N	: 0080F08013A5	TEMPERATURE	: 25deg.C
POWER	: AC120V / 60Hz	HUMIDITY	: 35%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Mitsuru Fujimura

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2402.0	-4.12	0.00	20.00	15.88	20.96	5.08
Mid	2441.0	-4.79	0.00	20.00	15.21	20.96	5.75
High	2480.0	-5.44	0.00	20.00	14.56	20.96	6.40
Inquiry	2441.0	-4.06	0.00	20.00	15.94	20.96	5.02

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

Radiated Spurious Emission [Mode1]

* 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

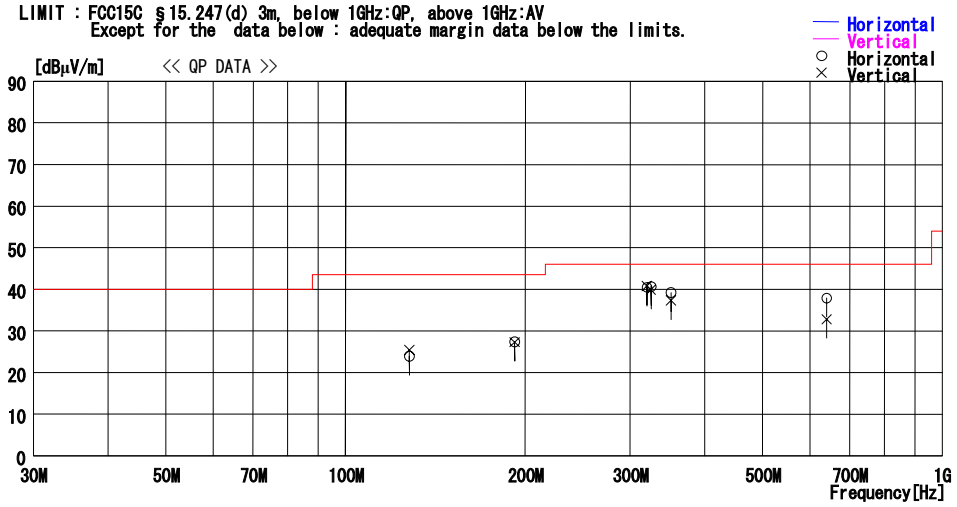
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Panasonic Communications Co.,Ltd.
Kind of EUT : Wireless Speakerphone
Model No. : KX-THA16
Serial No. : 0080 F080 13AD

Report No. : 25IE0109-HO
Power : Ac120V/60Hz
Temp℃/Humi% : 25deg.C / 36%
Operator : Norihisa Hashimoto

Mode / Remarks : Mode1 Tx2441MHz DH5 / Main Antenna / Max-axis

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dBμV]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dBμV/m]	LIMIT [dBμV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
—— Horizontal ——										
1	128.002	30.7	13.7	6.9	27.4	23.9	43.5	19.6	292	70
2	192.001	30.2	17.0	7.4	27.2	27.4	43.5	16.1	100	100
3	319.999	43.8	15.6	8.0	26.9	40.5	46.0	5.5	100	73
4	324.998	43.9	15.7	8.0	26.9	40.7	46.0	5.3	100	91
5	351.000	41.5	16.7	8.1	27.1	39.2	46.0	6.8	100	115
6	639.997	36.8	20.0	9.4	28.3	37.9	46.0	8.1	106	195
—— Vertical ——										
7	128.003	32.2	13.7	6.9	27.4	25.4	43.5	18.1	100	31
8	192.000	30.1	17.0	7.4	27.2	27.3	43.5	16.2	100	208
9	320.002	44.1	15.6	8.0	26.9	40.8	46.0	5.2	144	306
10	324.999	43.1	15.7	8.0	26.9	39.9	46.0	6.1	178	303
11	350.998	39.6	16.7	8.1	27.1	37.3	46.0	8.7	145	196
12	639.997	31.7	20.0	9.4	28.3	32.8	46.0	13.2	100	3

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

*There was no difference in levels at low/mid/high channels between 30MHz and 1GHz, and thus test was conducted at Tx 2441MHz only.

Radiated Spurious Emission [Mode1]

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode1, Tx 2402MHz	HUMIDITY	: 45%	41%
Remarks	: Hor Y-axis, Ver Y-axis Main Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2388.2	50.8	51.6	31.0	39.9	2.6	0.0	0.0	44.5	45.3	74.0	29.5	28.7
2*	2400.0	97.3	96.0	30.9	39.9	2.6	0.0	0.0	90.9	89.6	74.0	-	-
3	4804.1	54.0	54.2	34.9	41.2	3.9	1.0	0.0	52.6	52.8	74.0	21.4	21.2
4	7206.3	56.1	56.3	37.6	40.4	4.8	0.4	0.0	58.5	58.7	74.0	15.5	15.3
5	8481.8	58.3	59.2	36.9	39.6	5.2	0.1	0.0	60.9	61.8	74.0	13.1	12.2
6	9608.2	47.7	50.4	36.3	39.5	5.6	0.1	0.0	50.2	52.9	74.0	23.8	21.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
7	12010.6	49.1	48.5	41.4	39.6	6.6	0.1	0.0	48.1	47.5	74.0	25.9	26.5
8	14411.0	52.4	52.5	41.7	41.0	6.7	0.2	0.0	50.5	50.6	74.0	23.5	23.4
9	16814.0	47.9	48.0	44.7	41.7	7.1	1.1	0.0	49.6	49.7	74.0	24.4	24.3
10	19216.0	45.8	46.0	40.1	40.3	7.6	2.0	0.0	45.7	45.9	74.0	28.3	28.1
11	21618.0	45.8	45.9	39.8	35.4	8.3	2.4	0.0	51.4	51.5	74.0	22.6	22.5
12	24020.0	45.7	45.6	40.4	32.9	8.2	0.1	0.0	52.0	51.9	74.0	22.0	22.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2388.2	38.2	37.4	31.0	39.9	2.6	0.0	-27.1	4.7	3.9	54.0	49.3	50.1
2*	2400.0	80.5	79.4	30.9	39.9	2.6	0.0	-27.1	47.0	45.9	54.0	-	-
3	4804.1	44.9	44.6	34.9	41.2	3.9	1.0	-27.1	16.3	16.0	54.0	37.7	38.0
4	7206.3	48.1	48.0	37.6	40.4	4.8	0.4	-27.1	23.4	23.2	54.0	30.6	30.8
5	8481.8	51.3	52.6	36.9	39.6	5.2	0.1	-27.1	26.8	28.0	54.0	27.2	26.0
6	9608.2	35.4	39.6	36.3	39.5	5.6	0.1	-27.1	10.7	15.0	54.0	43.3	39.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
7	12010.6	35.4	36.5	41.4	39.6	6.6	0.1	-27.1	7.3	8.3	54.0	46.7	45.7
8	14411.0	39.0	38.7	41.7	41.0	6.7	0.2	-27.1	10.0	9.7	54.0	44.0	44.3
9	16814.0	34.5	34.4	44.7	41.7	7.1	1.1	-27.1	9.1	9.0	54.0	44.9	45.0
10	19216.0	32.2	32.2	40.1	40.3	7.6	2.0	-27.1	5.0	5.0	54.0	49.0	49.0
11	21618.0	32.7	32.7	39.8	35.4	8.3	2.4	-27.1	11.1	11.1	54.0	42.9	42.9
12	24020.0	32.5	32.4	40.4	32.9	8.2	0.1	-27.1	11.6	11.5	54.0	42.4	42.5

* Reference data

20dBc(Fundamental 2402MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	ATT	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	LOSS	Factor	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
0	2402.2	120.5	120.6	30.9	39.9	2.7	0.0	0.0	114.2	114.3	-	-	-
2	2400.0	63.0	62.9	30.9	39.9	2.6	0.0	0.0	56.6	56.5	Funda-20dB	37.6	37.8

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.40*10^{-3}$ / $100*10^{-3}$) = -27.1 dB

Radiated Spurious Emission [Mode1]

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode1, Tx 2441MHz	HUMIDITY	: 45%	41%
Remarks	: Hor Y-axis, Ver Y-axis Main Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4881.8	53.9	54.0	35.3	41.2	3.9	1.0	0.0	52.9	53.0	74.0	21.1	21.0
2	7323.7	55.6	55.8	37.8	40.4	4.8	0.5	0.0	58.3	58.5	74.0	15.7	15.5
3	8478.3	55.9	59.1	36.9	39.6	5.2	0.1	0.0	58.5	61.7	74.0	15.5	12.3
4	9763.4	47.3	50.0	36.2	39.6	5.6	0.2	0.0	49.7	52.4	74.0	24.3	21.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12205.6	49.0	49.6	41.5	39.8	6.6	0.3	0.0	48.1	48.7	74.0	25.9	25.3
6	14646.7	50.5	51.9	42.2	40.9	6.7	0.2	0.0	49.2	50.6	74.0	24.8	23.4
7	17087.0	47.9	47.8	44.5	41.8	7.1	1.1	0.0	49.3	49.2	74.0	24.7	24.8
8	19528.0	45.7	45.6	40.3	39.8	7.9	2.2	0.0	46.8	46.7	74.0	27.2	27.3
9	21969.0	45.8	45.7	39.8	35.9	8.2	1.0	0.0	49.4	49.3	74.0	24.6	24.7
10	24410.0	45.7	45.8	40.4	33.8	8.4	0.6	0.0	51.8	51.9	74.0	22.2	22.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4881.8	44.2	44.3	35.3	41.2	3.9	1.0	-27.1	16.0	16.1	54.0	38.0	37.9
2	7323.7	45.3	45.3	37.8	40.4	4.8	0.5	-27.1	20.9	20.9	54.0	33.1	33.1
3	8478.3	48.8	53.0	36.9	39.6	5.2	0.1	-27.1	24.2	28.5	54.0	29.8	25.5
4	9763.4	34.5	39.5	36.2	39.6	5.6	0.2	-27.1	9.8	14.8	54.0	44.2	39.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12205.6	35.3	36.5	41.5	39.8	6.6	0.3	-27.1	7.3	8.5	54.0	46.7	45.5
6	14646.7	36.1	36.9	42.2	40.9	6.7	0.2	-27.1	7.7	8.4	54.0	46.3	45.6
7	17087.0	34.5	34.4	44.5	41.8	7.1	1.1	-27.1	8.7	8.6	54.0	45.3	45.4
8	19528.0	32.2	32.2	40.3	39.8	7.9	2.2	-27.1	6.2	6.1	54.0	47.8	47.9
9	21969.0	32.6	32.7	39.8	35.9	8.2	1.0	-27.1	9.0	9.1	54.0	45.0	44.9
10	24410.0	32.2	32.4	40.4	33.8	8.4	0.6	-27.1	11.1	11.4	54.0	42.9	42.6

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.40*10^{-3}$ / $100*10^{-3}$) = -27.1 dB

Radiated Spurious Emission [Mode1]

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode1, Tx 2480MHz	HUMIDITY	: 45%	41%
Remarks	: Hor Y-axis, Ver Y-axis Main Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1*	2483.5	71.3	69.6	30.8	40.0	2.5	0.0	0.0	64.6	62.9	74.0	-	-
2	4960.3	54.2	54.5	35.8	41.3	3.9	1.1	0.0	53.7	54.0	74.0	20.3	20.0
3	7440.3	56.4	56.6	37.9	40.3	4.8	0.7	0.0	59.5	59.7	74.0	14.5	14.3
4	8483.7	56.7	59.8	36.9	39.6	5.2	0.1	0.0	59.3	62.4	74.0	14.7	11.6
5	9920.4	49.7	50.2	36.2	39.6	5.8	0.3	0.0	52.4	52.9	74.0	21.6	21.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12400.1	50.8	51.5	41.6	40.0	6.6	0.4	0.0	49.9	50.6	74.0	24.1	23.4
7	14880.0	52.3	52.0	42.6	40.9	6.9	0.5	0.0	51.9	51.6	74.0	22.1	22.4
8	17360.0	48.3	48.1	44.4	41.6	7.1	0.9	0.0	49.6	49.4	74.0	24.4	24.6
9	19840.0	45.9	45.8	40.4	39.4	8.0	1.5	0.0	46.9	46.8	74.0	27.1	27.2
10	22320.0	45.7	45.9	39.8	35.3	8.2	1.0	0.0	49.9	50.1	74.0	24.1	23.9
11	24800.0	45.8	46.3	40.7	34.6	8.6	1.3	0.0	52.3	52.8	74.0	21.7	21.2

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1*	2483.5	62.2	60.6	30.8	40.0	2.5	0.0	-27.1	28.4	26.8	54.0	-	-
2	4960.3	43.9	44.2	35.8	41.3	3.9	1.1	-27.1	16.2	16.5	54.0	37.8	37.5
3	7440.3	48.7	48.0	37.9	40.3	4.8	0.7	-27.1	24.6	24.0	54.0	29.4	30.0
4	8483.7	53.3	50.2	36.9	39.6	5.2	0.1	-27.1	28.8	25.6	54.0	25.2	28.4
5	9920.4	36.3	39.4	36.2	39.6	5.8	0.3	-27.1	11.8	15.0	54.0	42.2	39.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12400.1	36.7	38.2	41.6	40.0	6.6	0.4	-27.1	8.7	10.2	54.0	45.3	43.8
7	14880.0	38.6	37.7	42.6	40.9	6.9	0.5	-27.1	11.1	10.2	54.0	42.9	43.8
8	17360.0	34.3	34.5	44.4	41.6	7.1	0.9	-27.1	8.5	8.7	54.0	45.5	45.3
9	19840.0	32.2	32.2	40.4	39.4	8.0	1.5	-27.1	6.1	6.1	54.0	47.9	47.9
10	22320.0	32.6	32.5	39.8	35.3	8.2	1.0	-27.1	9.7	9.5	54.0	44.3	44.5
11	24800.0	32.4	32.4	40.7	34.6	8.6	1.3	-27.1	11.7	11.7	54.0	42.3	42.3

* Reference data

Marker-Delta Method (Delta chart: RBW:50kHz (= SPAN / 100), VBW: 200kHz, SPAN: 5MHz)

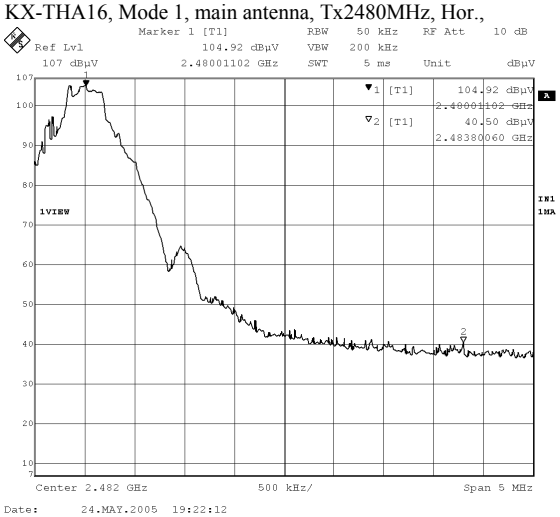
No.	FREQ	Carrier Level - delta S/A READING (PK)		ANT	AMP	CABLE	ATT	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	LOSS	Factor [dB]	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]		[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Carrier Reading - Delta + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
PK DETECT													
1	2483.5	56.5	57.3	30.8	40.0	2.5	0.0	0.0	49.8	50.6	74.0	24.2	23.4
AV DETECT													
1	2483.5	47.5	47.9	30.8	40.0	2.5	0.0	0.0	40.8	41.2	54.0	13.2	12.8

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.40*10^{-3}$ / $100*10^{-3}$) = -27.1 dB

[Reference data]

Delta marker chart

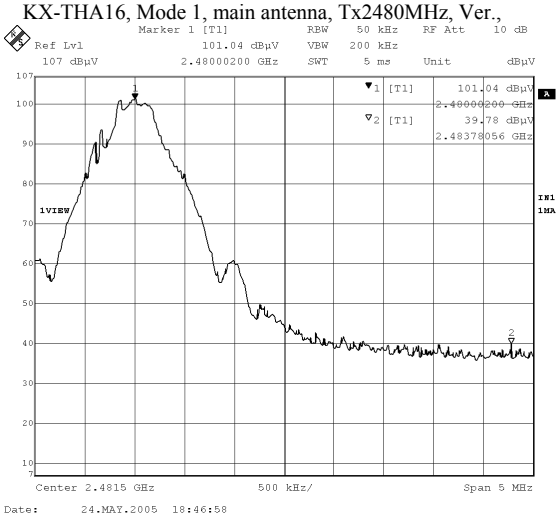
KX-THA16, Mode 1, main antenna, Tx2480MHz, Hor.,



RBW = span 5MHz / 100 = 50kHz
VBW = RBW x 3 = 150kHz -> 200kHz

Carrier read to 2483.80060MHz read
-64.4dB

KX-THA16, Mode 1, main antenna, Tx2480MHz, Ver.,



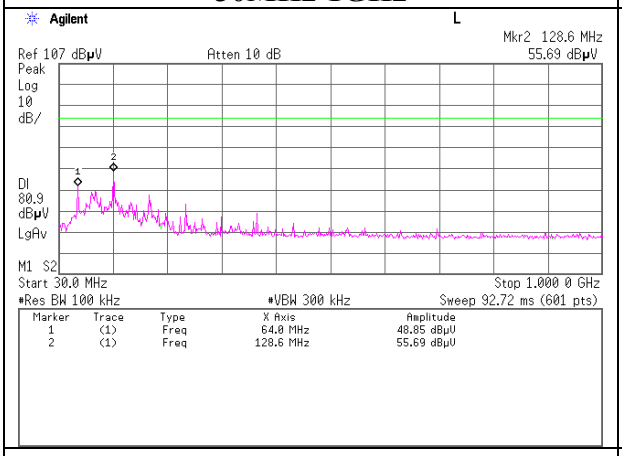
RBW = span 5MHz / 100 = 50kHz
VBW = RBW x 3 = 150kHz -> 200kHz

Carrier read to 2483.78056MHz read
-61.2dB

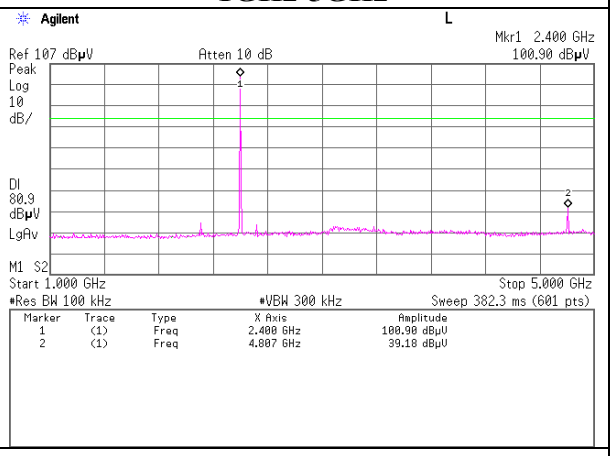
Conducted Spurious Emission [Mode1]

Ch:Low

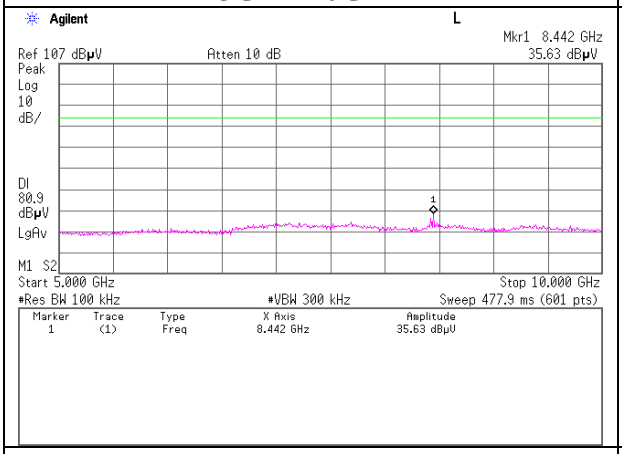
30MHz-1GHz



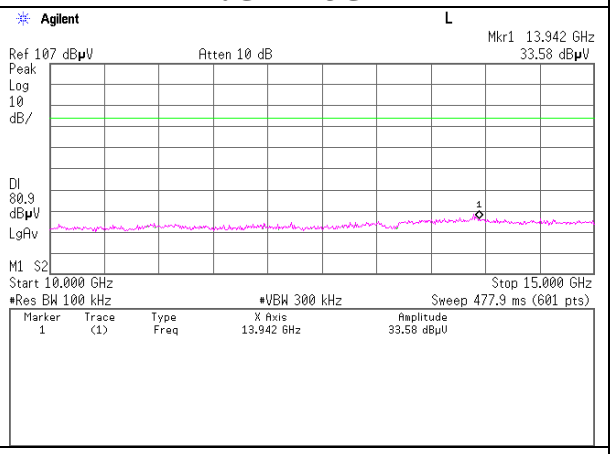
1GHz-5GHz



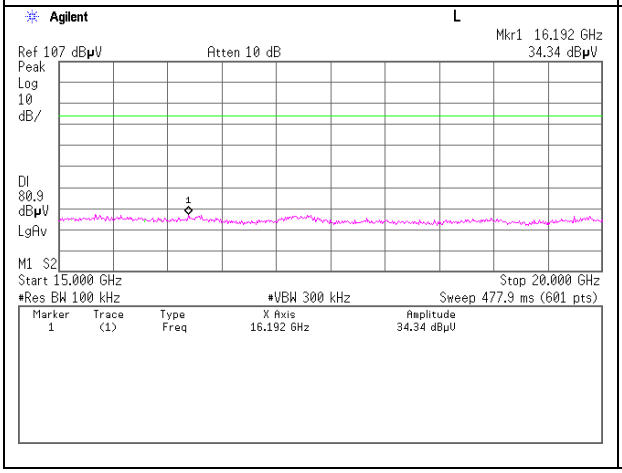
5GHz-10GHz



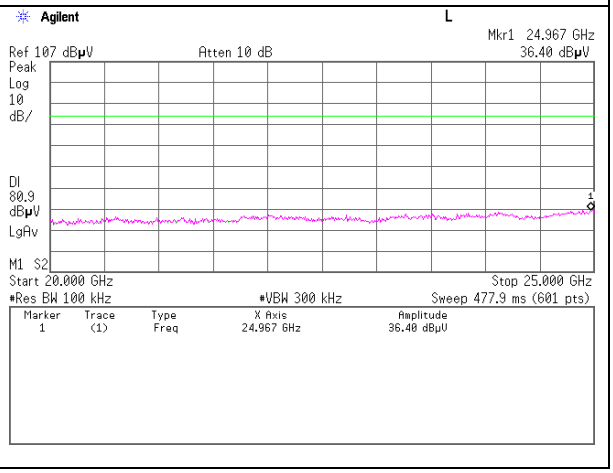
10GHz-15GHz



15GHz-20GHz



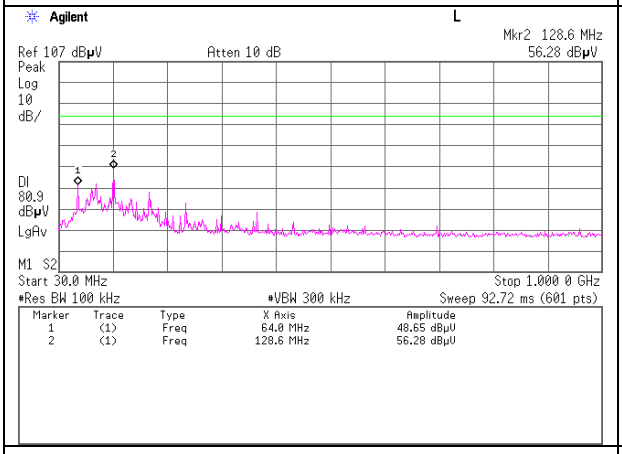
20GHz-25GHz



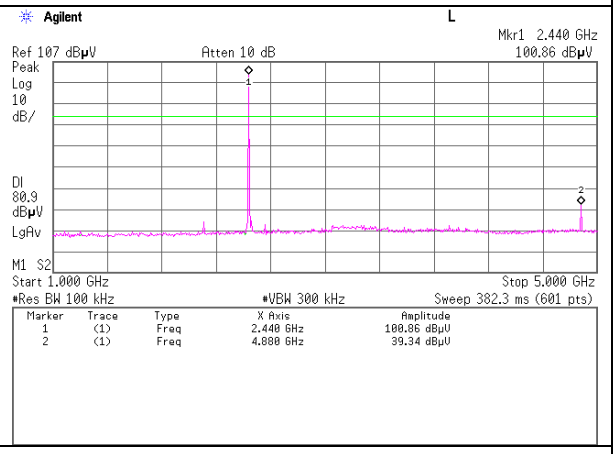
Conducted Spurious Emission [Mode1]

Ch:Mid

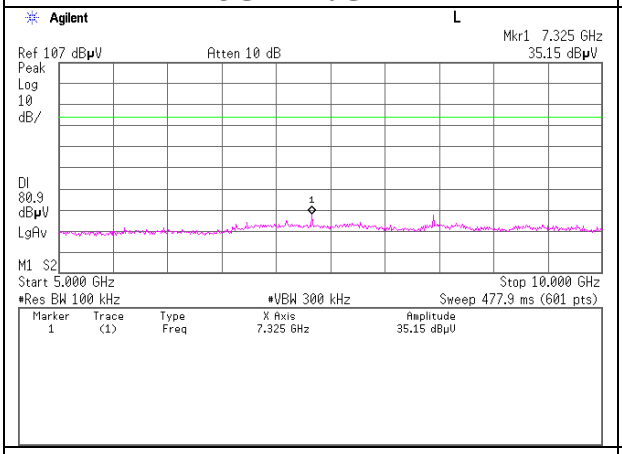
30MHz-1GHz



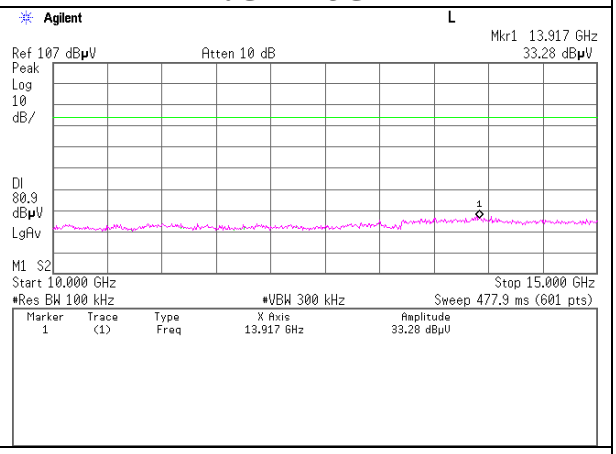
1GHz-5GHz



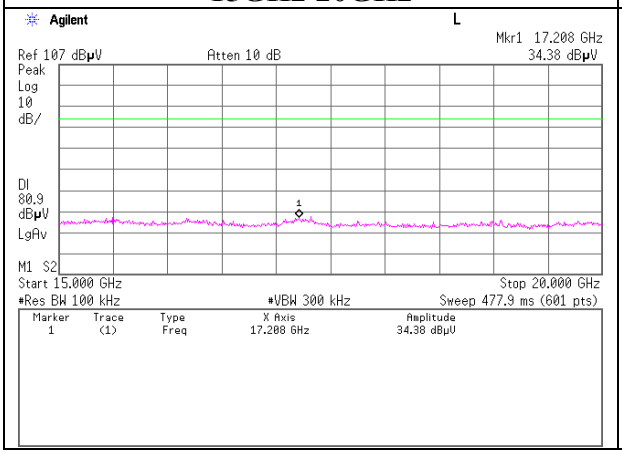
5GHz-10GHz



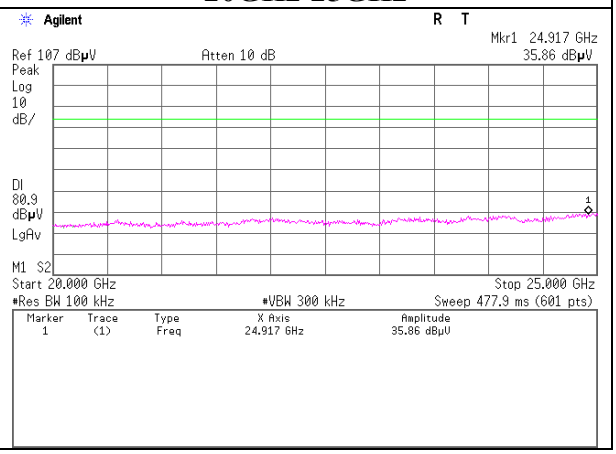
10GHz-15GHz



15GHz-20GHz



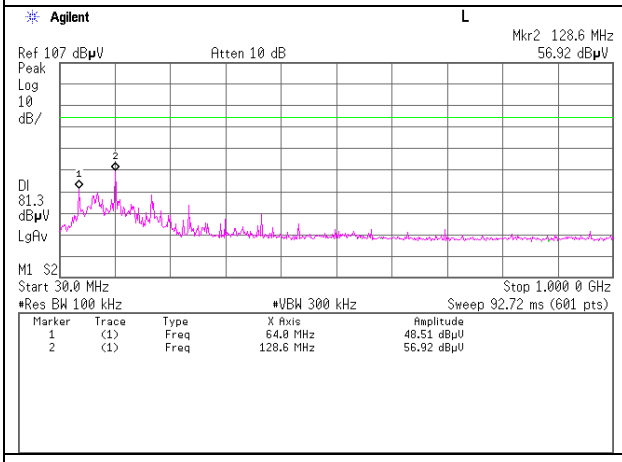
20GHz-25GHz



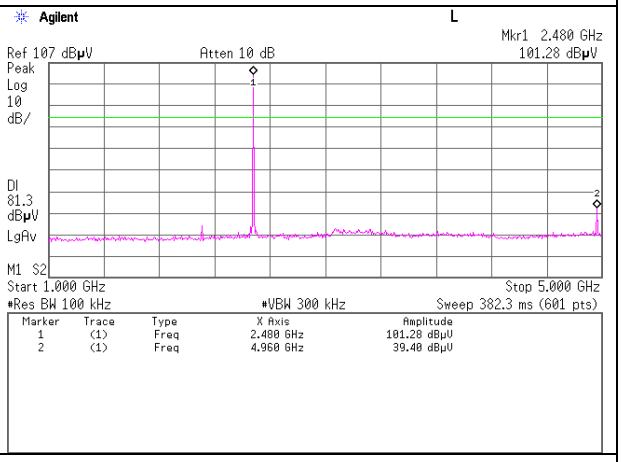
Conducted Spurious Emission [Mode1]

Ch:High

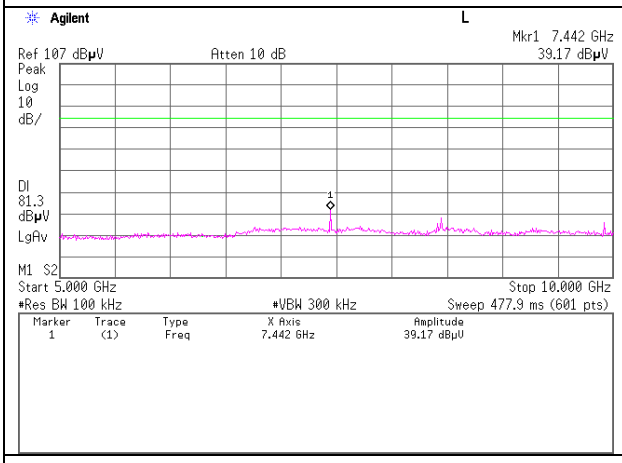
30MHz-1GHz



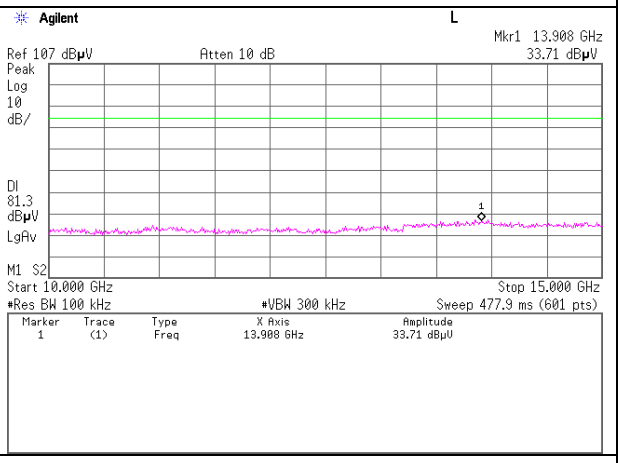
1GHz-5GHz



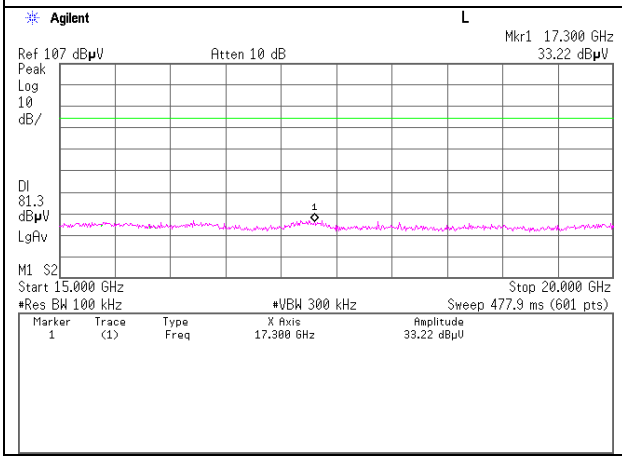
5GHz-10GHz



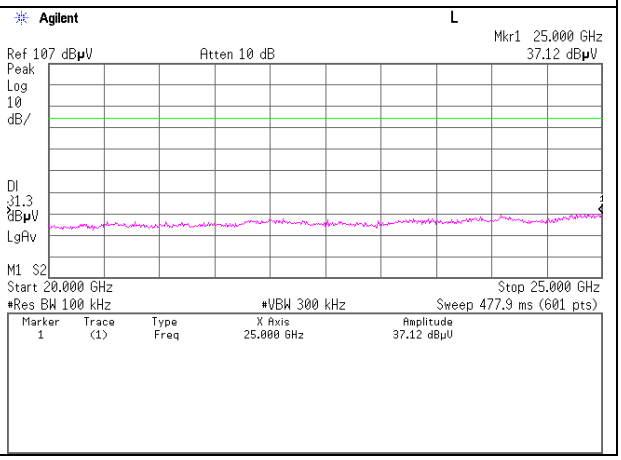
10GHz-15GHz



15GHz-20GHz



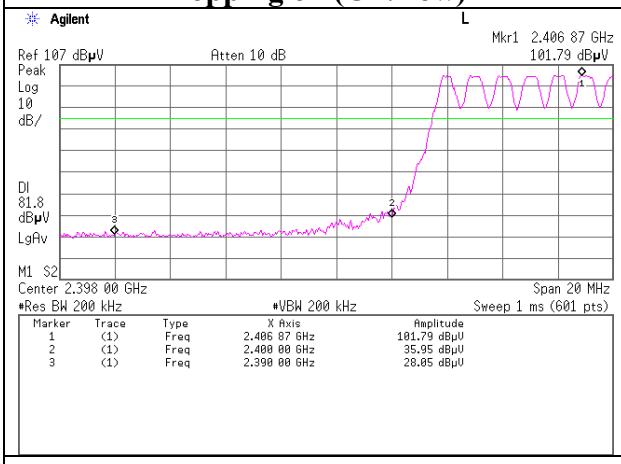
20GHz-25GHz



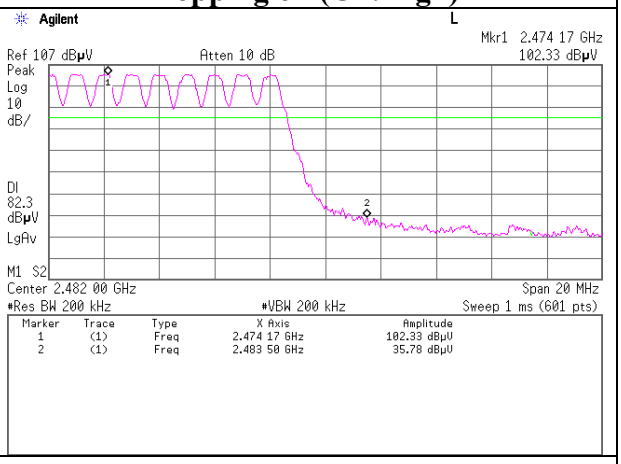
Conducted Spurious Emission [Mode1]

Band Edge compliance

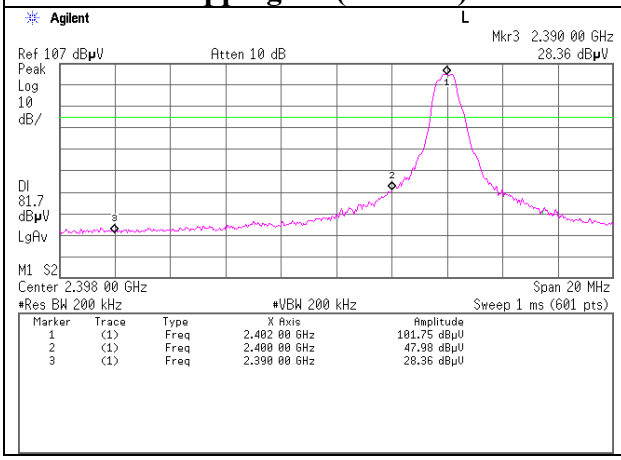
Hopping on (Ch:Low)



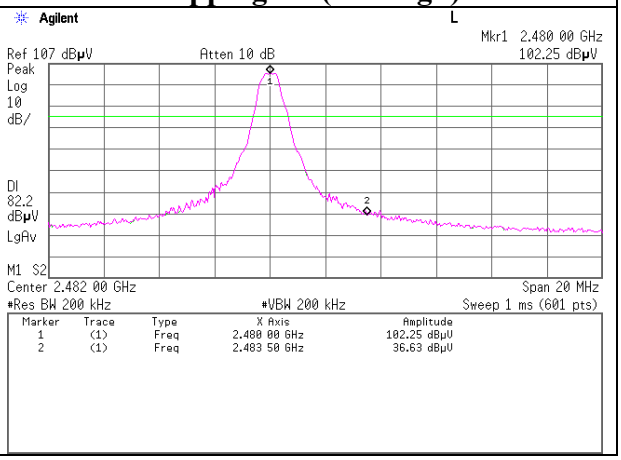
Hopping on (Ch:High)



Hopping off (Ch:Low)



Hopping off (Ch:High)



[Mode 2]

Carrier Frequency Separation [Mode2]

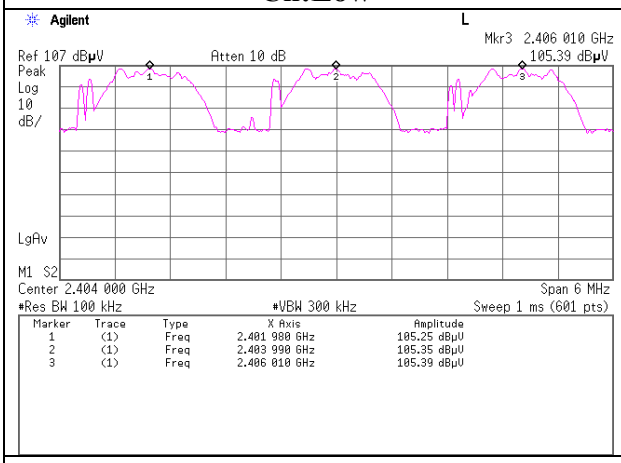
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx(Hopping on)	ENGINEER	:	Mitsuru Fujimura

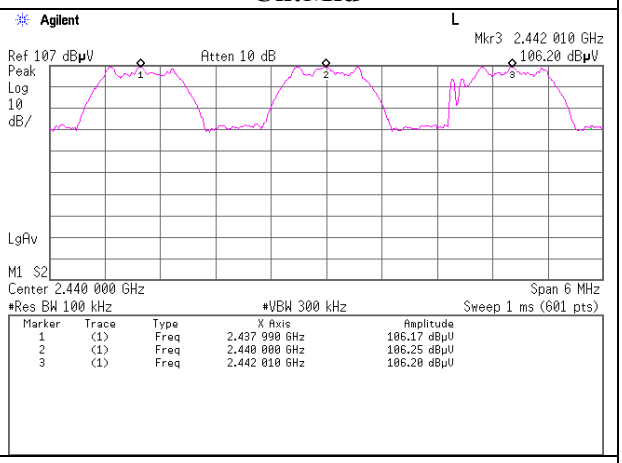
Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	2.010	> 25kHz or two-thirds of 20dB Bandwidth
Mid	2440.0	2.010	> 25kHz or two-thirds of 20dB Bandwidth
High	2480.0	1.990	> 25kHz or two-thirds of 20dB Bandwidth

Carrier Frequency Separation [Mode2]

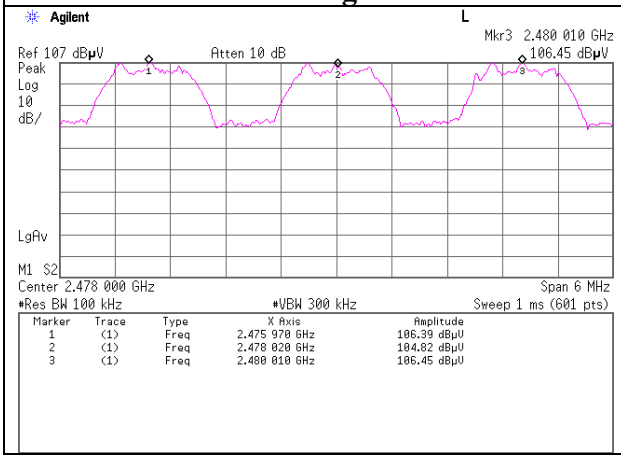
Ch:Low



Ch:Mid



Ch:High



20dB Bandwidth [Mode2]

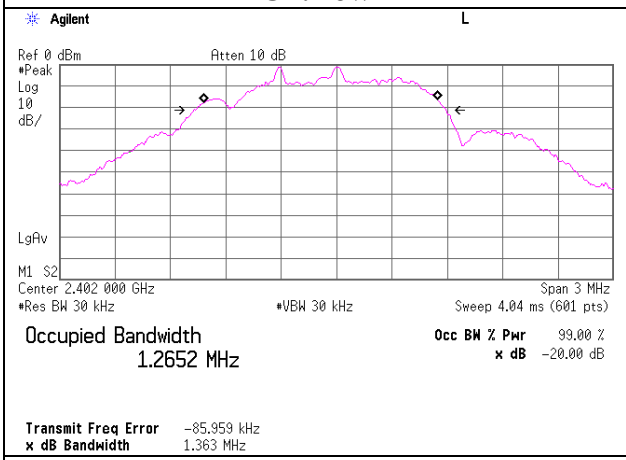
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx (Hopping off)	ENGINEER	:	Mitsuru Fujimura

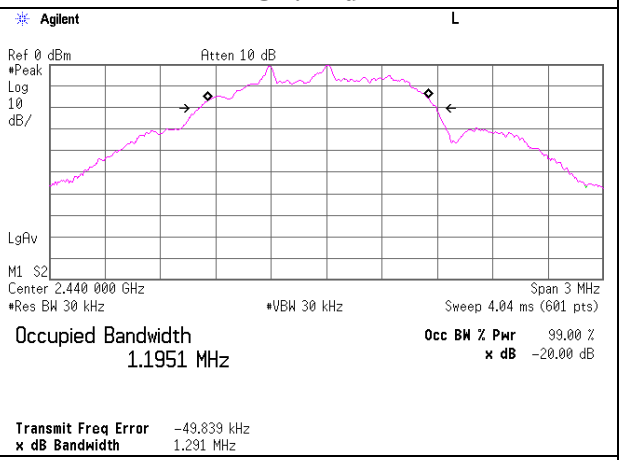
Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	1.363	-
Mid	2440.0	1.291	-
High	2480.0	1.173	-

20dB Bandwidth [Mode2]

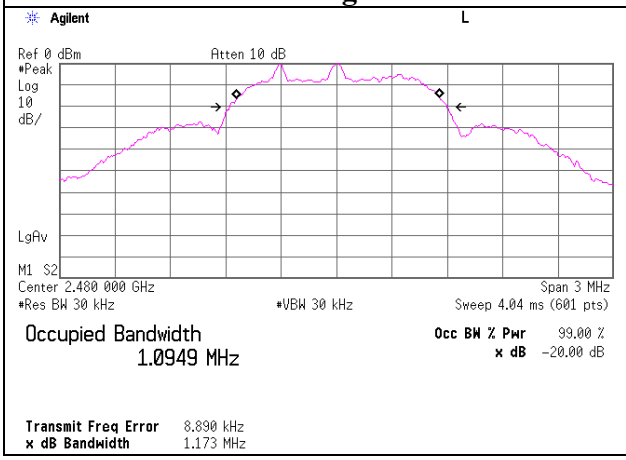
Ch:Low



Ch:Mid



Ch:High



Number of Hopping Frequency [Mode2]

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	:	Panasonic Communications Co.,Ltd.	REGULATION	:	FCC15.247(a)(1)(iii)
EQUIPMENT	:	Wireless Speakerphone	TEST DISTANCE	:	-
MODEL	:	KX-THA16	DATE	:	05/17/2005
S/ N	:	0080F08013A5	TEMPERATURE	:	25deg.C
POWER	:	AC120V / 60Hz	HUMIDITY	:	35%
MODE	:	Tx (Hopping on)	ENGINEER	:	Mitsuru Fujimura

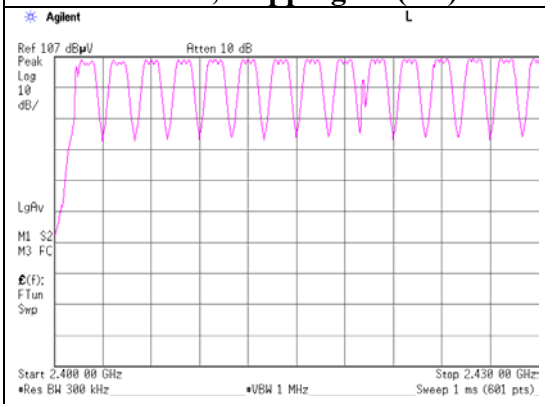
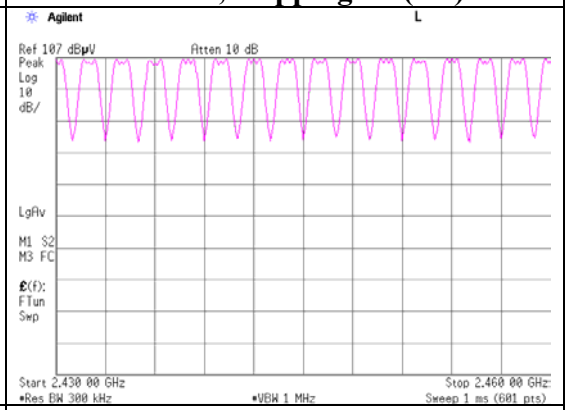
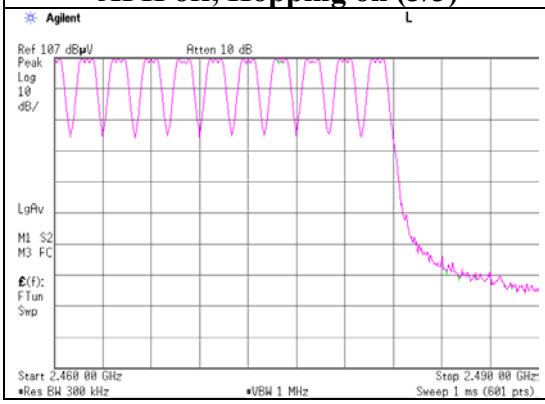
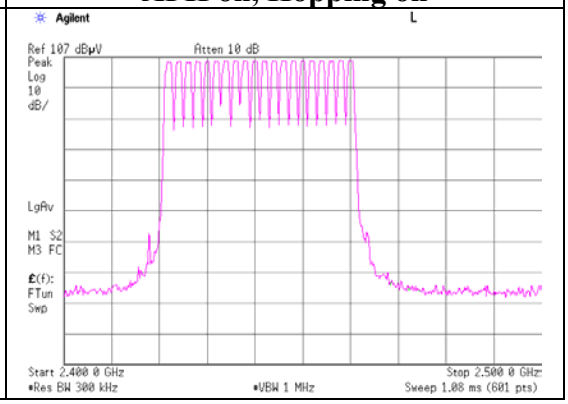
Mode 2, AFH off

Mode	Number of channel [time]	Limit [time]
Tx(Hopping on)	40	≧15

Mode 2, AFH on

Mode	Number of channel [time]	Limit [time]
Tx(Hopping on)	20	≧15

Number of Hopping Frequency [Mode2]

AFH off, Hopping on (1/3)	AFH off, Hopping on (2/3)
	
AFH off, Hopping on (3/3)	**AFH on, Hopping on**
	

Dwell Time [Mode2]

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Panasonic Communications Co.,Ltd.	REGULATION	: FCC15.247(a)(1)(iii)
EQUIPMENT	: Wireless Speakerphone	TEST DISTANCE	: -
MODEL	: KX-THA16	DATE	: 05/17/2005
S/N	: 0080F08013A5	TEMPERATURE	: 25deg.C
POWER	: AC120V / 60Hz	HUMIDITY	: 35%
MODE	: Tx (Hopping on)	ENGINEER	: Mitsuru Fujimura

Mode 2, AFH off

Mode	Number of transmission in a 16(40 Hopping x 0.4) second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	100 times /5sec. x 16 = 320 times	0.577	185	400
DH5	33 times /5 sec. x 16 = 105.6 times	3.117	329	400

Mode 2, AFH on

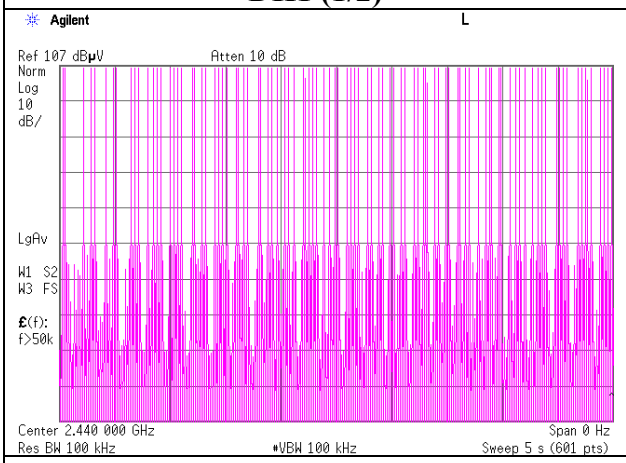
Mode	Number of transmission in a 16(40 Hopping x 0.4) second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	44 times /1sec. x 8 = 352.0 times	0.580	204	400
DH5	78 times /5 sec. x 8 = 124.8 times	3.083	385	400

*Dwell Factor caliculation for Spurious emissions : = 20 x log ((3.083 [ms] x (78 / (5[s] /0.100 [s]))) / 100 [ms]) = -26.4 dB

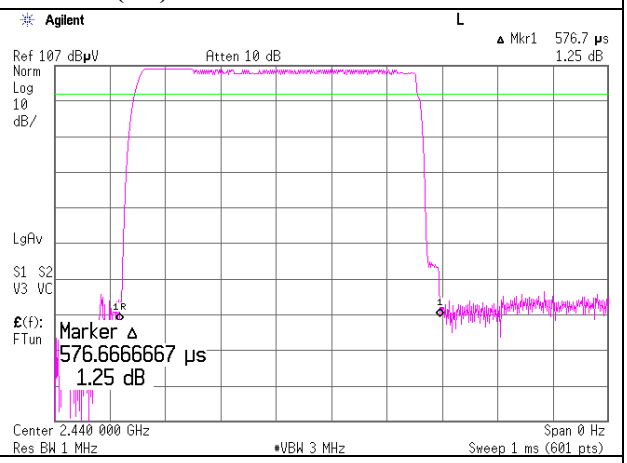
Dwell Time [Mode2]

AFH off

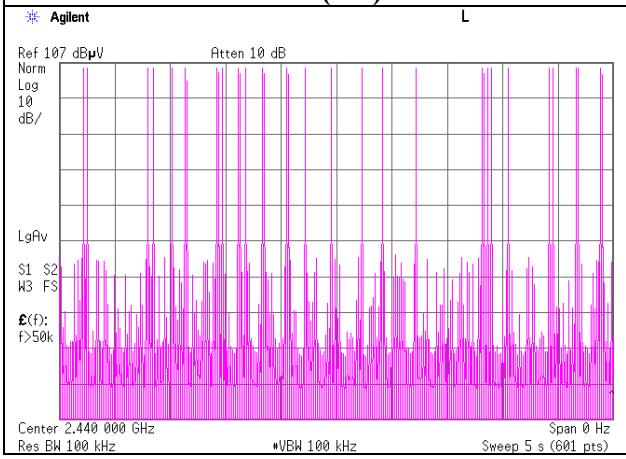
DH1 (1/2)



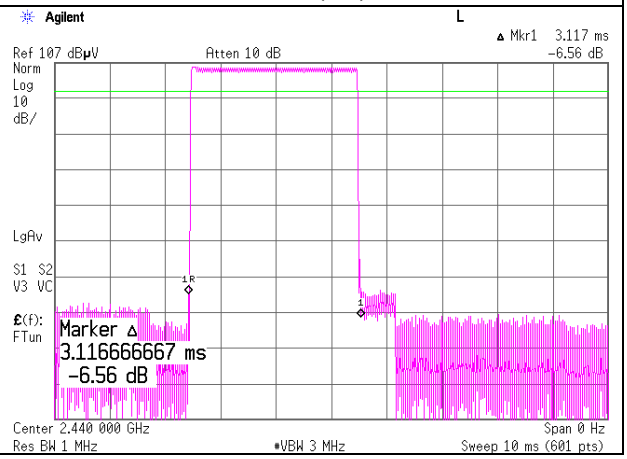
DH1 (2/2)



DH5 (1/2)



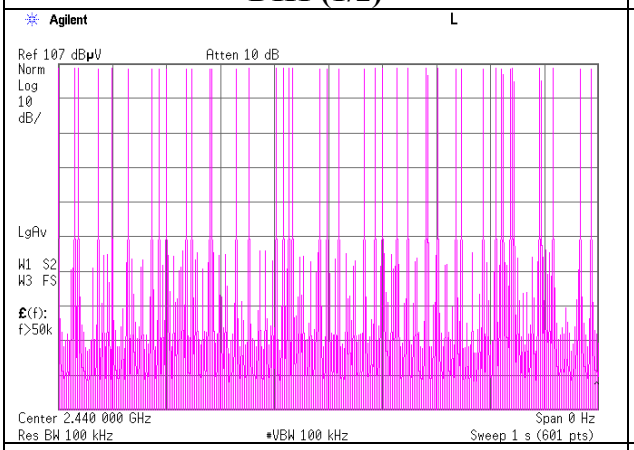
DH5 (2/2)



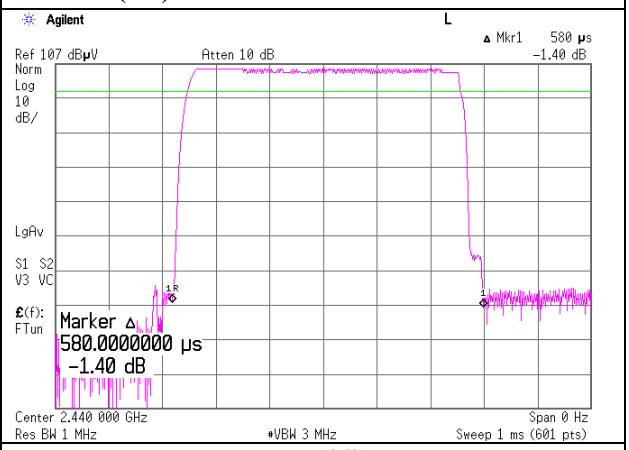
Dwell Time [Mode2]

AFH on

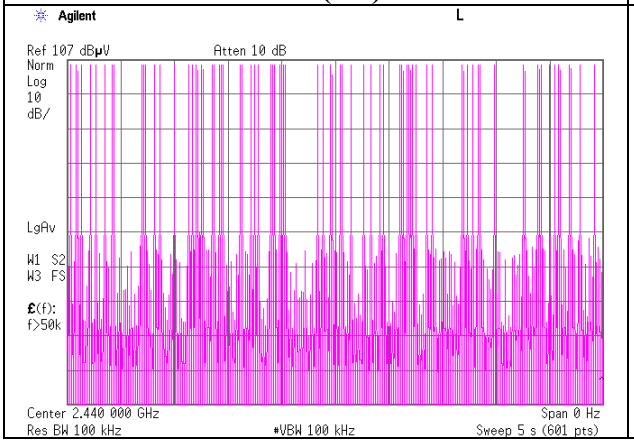
DH1 (1/2)



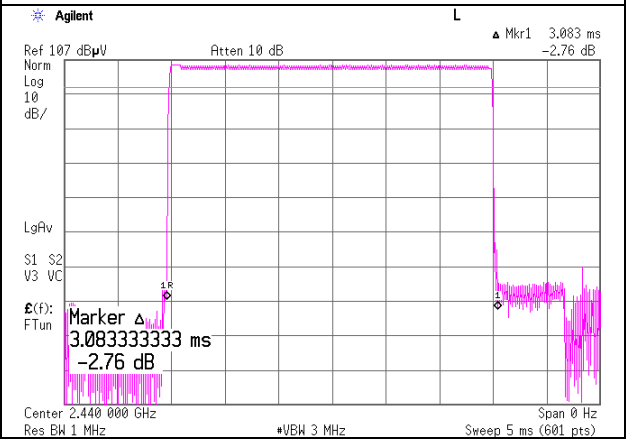
DH1 (2/2)



DH5 (1/2)



DH5 (2/2)



Maximum Peak Output Power [Mode2]

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Panasonic Communications Co.,Ltd.	REGULATION	: Fcc Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Wireless Speakerphone	TEST DISTANCE	: -
MODEL	: KX-THA16	DATE	: 05/17/2005
S/ N	: 0080F08013A5	TEMPERATURE	: 25deg.C
POWER	: AC120V / 60Hz	HUMIDITY	: 35%
MODE	: Tx(Hopping on)	ENGINEER	: Mitsuru Fujimura

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2402.0	-0.54	0.00	20.00	19.46	20.96	1.50
Mid	2440.0	-1.01	0.00	20.00	18.99	20.96	1.97
High	2480.0	-1.58	0.00	20.00	18.42	20.96	2.54

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

Radiated Spurious Emission [Mode2]

* 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

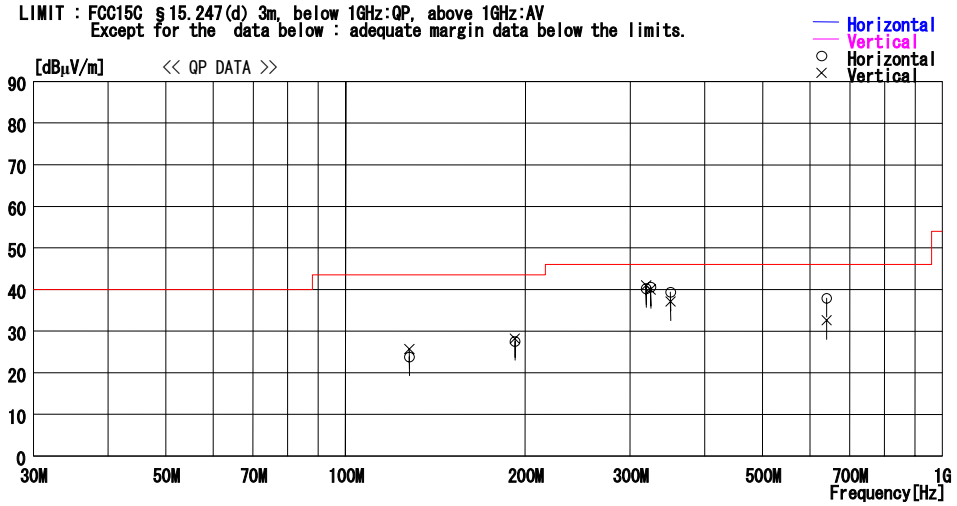
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Panasonic Communications Co.,Ltd.
Kind of EUT : Wireless Speakerphone
Model No. : KX-THA16
Serial No. : 0080 F080 13AD

Report No. : 25IE0109-HO
Power : Ac120V/60Hz
Temp℃/Humi% : 25deg.C / 36%
Operator : Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2440MHz DH5 / Main Antenna / Max-axis

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dBμV]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dBμV/m]	LIMIT [dBμV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
—— Horizontal ——										
1	128.009	30.6	13.7	6.9	27.4	23.8	43.5	19.7	301	70
2	192.270	30.3	17.0	7.4	27.2	27.5	43.5	16.0	300	103
3	318.900	43.6	15.5	8.0	26.9	40.2	46.0	5.8	100	73
4	324.500	43.8	15.7	8.0	26.9	40.6	46.0	5.4	100	92
5	350.401	41.7	16.7	8.1	27.1	39.4	46.0	6.6	100	115
6	640.206	36.8	20.0	9.4	28.3	37.9	46.0	8.1	110	183
—— Vertical ——										
7	128.009	32.5	13.7	6.9	27.4	25.7	43.5	17.8	100	27
8	192.270	31.0	17.0	7.4	27.2	28.2	43.5	15.3	100	206
9	318.900	44.4	15.5	8.0	26.9	41.0	46.0	5.0	151	311
10	324.500	43.2	15.7	8.0	26.9	40.0	46.0	6.0	176	297
11	350.401	39.4	16.7	8.1	27.1	37.1	46.0	8.9	149	197
12	640.206	31.5	20.0	9.4	28.3	32.6	46.0	13.4	100	2

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

*There was no difference in levels at low/mid/high channels between 30MHz and 1GHz, and thus test was conducted at Tx 2441MHz only.

Radiated Spurious Emission [Mode2]

(Main Antenna)

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode2, Tx 2402MHz	HUMIDITY	: 45%	41%
Remarks	: Hor Y-axis, Ver Y-axis Main Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2389.1	52.4	51.9	31.0	39.9	2.6	0.0	0.0	46.1	45.6	74.0	27.9	28.4
2*	2400.0	101.7	99.8	30.9	39.9	2.6	0.0	0.0	95.3	93.4	74.0	-	-
3	4803.4	55.9	57.4	34.9	41.2	3.9	1.0	0.0	54.5	56.0	74.0	19.5	18.0
3	7206.9	58.5	57.8	37.6	40.4	4.8	1.0	0.0	61.5	60.8	74.0	12.5	13.2
4	8493.7	53.4	57.0	36.9	39.6	5.2	0.4	0.0	56.3	59.9	74.0	17.7	14.1
5	9609.3	49.9	51.3	36.3	39.5	5.6	0.1	0.0	52.4	53.8	74.0	21.6	20.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12010.3	48.5	47.7	41.4	39.6	6.6	0.1	0.0	47.5	46.7	74.0	26.5	27.3
7	14411.9	52.6	52.4	41.7	41.0	6.7	0.2	0.0	50.7	50.5	74.0	23.3	23.5
8	16814.0	47.5	47.7	44.7	41.7	7.1	1.1	0.0	49.2	49.4	74.0	24.8	24.6
9	19216.0	45.8	45.5	40.1	40.3	7.6	2.0	0.0	45.7	45.4	74.0	28.3	28.6
10	21618.0	45.7	45.6	39.8	35.4	8.3	2.4	0.0	51.3	51.2	74.0	22.7	22.8
11	24020.0	45.9	45.6	40.4	32.9	8.2	0.1	0.0	52.2	51.9	74.0	21.8	22.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2389.1	37.6	37.4	31.0	39.9	2.6	0.0	-26.4	4.9	4.7	54.0	49.1	49.3
2*	2400.0	79.5	78.2	30.9	39.9	2.6	0.0	-26.4	46.7	45.4	54.0	-	-
3	4803.4	44.7	44.4	34.9	41.2	3.9	1.0	-26.4	16.9	16.6	54.0	37.1	37.4
3	7206.9	44.9	44.0	37.6	40.4	4.8	1.0	-26.4	21.5	20.6	54.0	32.5	33.4
4	8493.7	45.7	50.0	36.9	39.6	5.2	0.4	-26.4	22.2	26.5	54.0	31.8	27.5
5	9609.3	36.8	37.9	36.3	39.5	5.6	0.1	-26.4	12.9	14.0	54.0	41.1	40.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12010.3	35.5	35.4	41.4	39.6	6.6	0.1	-26.4	8.1	8.0	54.0	45.9	46.0
7	14411.9	39.6	38.5	41.7	41.0	6.7	0.2	-26.4	11.4	10.2	54.0	42.6	43.8
8	16814.0	34.3	34.5	44.7	41.7	7.1	1.1	-26.4	9.7	9.9	54.0	44.3	44.1
9	19216.0	32.2	32.2	40.1	40.3	7.6	2.0	-26.4	5.7	5.7	54.0	48.3	48.3
10	21618.0	32.6	32.5	39.8	35.4	8.3	2.4	-26.4	11.8	11.7	54.0	42.2	42.3
11	24020.0	32.5	32.3	40.4	32.9	8.2	0.1	-26.4	12.4	12.3	54.0	41.6	41.7

* Reference data

20dBc(Fundamental 2402MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	Factor	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
0	2402.3	121.1	117.0	30.9	39.9	2.7	0.0	0.0	114.8	110.7	-	-	-
2	2400.0	66.6	65.4	30.9	39.9	2.6	0.0	0.0	60.2	59.0	Funda-20dB	34.6	31.7

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.81*10^{-3}$ / $100*10^{-3}$) = -26.4 dB

Radiated Spurious Emission [Mode2]

(Main Antenna)

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode2, Tx 2440MHz	HUMIDITY	: 45%	41%
Remarks	: Hor Y-axis, Ver Y-axis Main Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4880.4	57.2	55.5	35.3	41.2	3.9	1.0	0.0	56.2	54.5	74.0	17.8	19.5
2	7320.7	53.8	58.5	37.8	40.4	4.8	0.5	0.0	56.5	61.2	74.0	17.5	12.8
3	8497.1	54.6	58.4	36.9	39.6	5.2	0.1	0.0	57.2	61.0	74.0	16.8	13.0
4	9761.2	49.3	50.9	36.2	39.6	5.6	0.2	0.0	51.7	53.3	74.0	22.3	20.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12201.6	50.8	49.8	41.5	39.8	6.6	0.3	0.0	49.9	48.9	74.0	24.1	25.1
6	14640.9	53.7	54.5	42.2	40.9	6.7	0.2	0.0	52.4	53.2	74.0	21.6	20.8
7	17086.9	48.9	49.8	44.5	41.8	7.1	1.1	0.0	50.3	51.2	74.0	23.7	22.8
8	19520.0	45.7	45.8	40.3	39.8	7.9	2.2	0.0	46.8	46.9	74.0	27.2	27.1
9	21960.0	45.7	45.7	39.8	35.9	8.2	1.0	0.0	49.3	49.3	74.0	24.7	24.7
10	24400.0	45.7	45.7	40.4	33.8	8.4	0.6	0.0	51.8	51.8	74.0	22.2	22.2

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4880.4	44.8	43.5	35.3	41.2	3.9	1.0	-26.4	17.4	16.1	54.0	36.6	37.9
2	7320.7	41.7	44.4	37.8	40.4	4.8	0.5	-26.4	18.0	20.7	54.0	36.0	33.3
3	8497.1	47.5	51.8	36.9	39.6	5.2	0.1	-26.4	23.7	28.0	54.0	30.3	26.0
4	9761.2	35.9	37.9	36.2	39.6	5.6	0.2	-26.4	11.9	13.9	54.0	42.1	40.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12201.6	37.4	36.0	41.5	39.8	6.6	0.3	-26.4	10.1	8.7	54.0	43.9	45.3
6	14640.9	39.1	39.0	42.2	40.9	6.7	0.2	-26.4	11.5	11.3	54.0	42.5	42.7
7	17086.9	35.5	39.0	44.5	41.8	7.1	1.1	-26.4	10.5	14.0	54.0	43.5	40.0
8	19520.0	32.6	32.7	40.3	39.8	7.9	2.2	-26.4	7.3	7.4	54.0	46.7	46.6
9	21960.0	32.5	32.6	39.8	35.9	8.2	1.0	-26.4	9.8	9.8	54.0	44.2	44.2
10	24400.0	32.3	32.5	40.4	33.8	8.4	0.6	-26.4	12.1	12.2	54.0	41.9	41.8

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.81*10^{-3}$ / $100*10^{-3}$) = -26.4 dB

Radiated Spurious Emission [Mode2]
(Main Antenna)

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode2, Tx 2480MHz	HUMIDITY	: 45%	41%
Remarks	: Hor Y-axis, Ver Y-axis Main Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1*	2483.6	76.4	76.3	30.8	40.0	2.5	0.0	0.0	69.7	69.6	74.0	-	-
2	4959.6	52.5	55.9	35.8	41.3	3.9	1.1	0.0	52.0	55.4	74.0	22.0	18.6
3	7440.9	59.9	60.1	37.9	40.3	4.8	0.7	0.0	63.0	63.2	74.0	11.0	10.8
3	8504.8	55.2	58.5	36.9	39.6	5.2	0.1	0.0	57.8	61.1	74.0	16.2	12.9
4	9918.7	49.5	50.7	36.2	39.6	5.8	0.3	0.0	52.2	53.4	74.0	21.8	20.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12401.5	51.2	51.9	41.6	40.0	6.6	0.4	0.0	50.3	51.0	74.0	23.7	23.0
6	14881.8	54.0	52.4	42.6	40.9	6.9	0.5	0.0	53.6	52.0	74.0	20.4	22.0
7	17358.4	51.7	51.7	44.4	41.6	7.1	0.9	0.0	53.0	53.0	74.0	21.0	21.0
8	19840.0	45.8	45.7	40.4	39.4	8.0	1.5	0.0	46.8	46.7	74.0	27.2	27.3
9	22320.0	45.9	45.8	39.8	35.3	8.2	1.0	0.0	50.1	50.0	74.0	23.9	24.0
10	24800.0	45.9	46.0	40.7	34.6	8.6	1.3	0.0	52.4	52.5	74.0	21.6	21.5

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1*	2483.6	62.5	61.9	30.8	40.0	2.5	0.0	-26.4	29.4	28.8	54.0	-	-
2	4959.6	40.0	43.6	35.8	41.3	3.9	1.1	-26.4	13.1	16.7	54.0	40.9	37.3
3	7440.9	45.3	46.0	37.9	40.3	4.8	0.7	-26.4	22.0	22.7	54.0	32.0	31.3
3	8504.8	47.4	51.8	36.9	39.6	5.2	0.1	-26.4	23.6	28.0	54.0	30.4	26.0
4	9918.7	36.5	37.7	36.2	39.6	5.8	0.3	-26.4	12.8	14.0	54.0	41.2	40.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12401.5	38.1	38.7	41.6	40.0	6.6	0.4	-26.4	10.9	11.5	54.0	43.1	42.5
6	14881.8	40.5	37.6	42.6	40.9	6.9	0.5	-26.4	13.8	10.8	54.0	40.2	43.2
7	17358.4	36.4	38.1	44.4	41.6	7.1	0.9	-26.4	11.3	13.0	54.0	42.7	41.0
8	19840.0	32.5	32.5	40.4	39.4	8.0	1.5	-26.4	7.1	7.1	54.0	46.9	46.9
9	22320.0	32.6	32.5	39.8	35.3	8.2	1.0	-26.4	10.4	10.4	54.0	43.6	43.6
10	24800.0	32.5	32.6	40.7	34.6	8.6	1.3	-26.4	12.6	12.8	54.0	41.4	41.2

* Reference data

Marker-Delta Method (Delta chart: RBW:50kHz (= SPAN / 100), VBW: 200kHz, SPAN: 5MHz)

No.	FREQ	Carrier Level - delta S/A READING (PK)		ANT	AMP	CABLE	ATT	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	LOSS	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Carrier Reading - Delta + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
PK DETECT													
1	2483.5	54.1	55.1	30.8	40.0	2.5	0.0	0.0	47.4	48.4	74.0	26.6	25.6
AV DETECT													
1	2483.5	42.8	43.5	30.8	40.0	2.5	0.0	0.0	36.1	36.8	54.0	17.9	17.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.81*10^{-3}$ / $100*10^{-3}$) = -26.4 dB

Radiated Spurious Emission [Mode2]

(Sub Antenna)

* 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

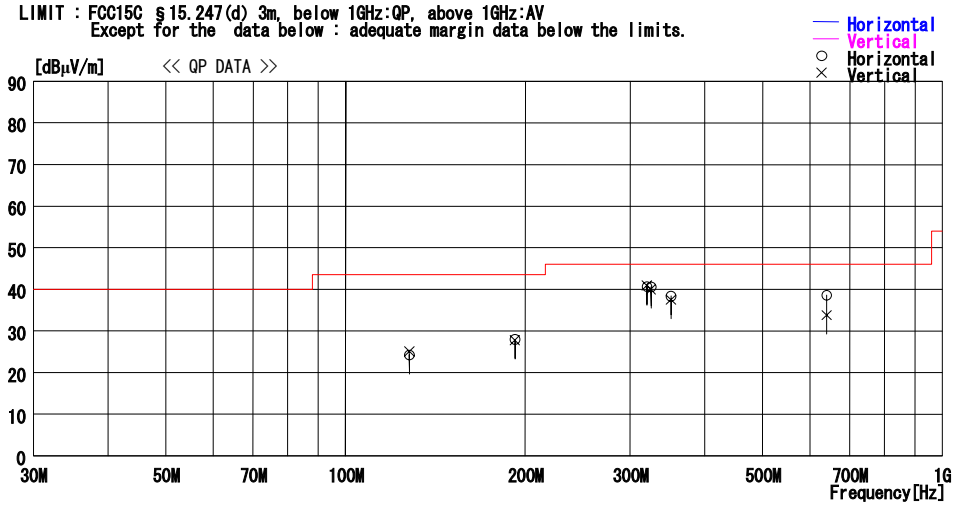
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Panasonic Communications Co.,Ltd.
Kind of EUT : Wireless Speakerphone
Model No. : KX-THA16
Serial No. : 0080 F080 13AD

Report No. : 25IE0109-HO
Power : Ac120V/60Hz
Temp℃/Humi% : 25deg.C / 36%
Operator : Norihisa Hashimoto

Mode / Remarks : Mode2 Tx2440MHz DH5 / Sub Antenna / Max-axis

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dBμV]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dBμV/m]	LIMIT [dBμV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
—— Horizontal ——										
1	128.009	31.0	13.7	6.9	27.4	24.2	43.5	19.3	296	82
2	192.270	30.8	17.0	7.4	27.2	28.0	43.5	15.5	300	91
3	319.999	44.0	15.6	8.0	26.9	40.7	46.0	5.3	100	86
4	324.999	43.8	15.7	8.0	26.9	40.6	46.0	5.4	100	84
5	350.999	40.7	16.7	8.1	27.1	38.4	46.0	7.6	100	118
6	639.999	37.5	20.0	9.4	28.3	38.6	46.0	7.4	110	185
—— Vertical ——										
7	128.009	31.9	13.7	6.9	27.4	25.1	43.5	18.4	100	64
8	192.270	30.6	17.0	7.4	27.2	27.8	43.5	15.7	100	217
9	320.001	44.2	15.6	8.0	26.9	40.9	46.0	5.1	110	270
10	324.998	43.2	15.7	8.0	26.9	40.0	46.0	6.0	143	269
11	350.999	39.8	16.7	8.1	27.1	37.5	46.0	8.5	153	186
12	639.996	32.7	20.0	9.4	28.3	33.8	46.0	12.2	100	315

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

*There was no difference in levels at low/mid/high channels between 30MHz and 1GHz, and thus test was conducted at Tx 2441MHz only.

Radiated Spurious Emission [Mode2]

(Sub Antenna)

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode2, Tx 2402MHz	HUMIDITY	: 45%	41%
Remarks	: Hor X-axis, Ver X-axis Sub Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2389.1	52.5	52.0	31.0	39.9	2.6	0.0	0.0	46.2	45.7	74.0	27.8	28.3
2*	2400.0	101.3	98.4	30.9	39.9	2.6	0.0	0.0	94.9	92.0	74.0	-	-
3	4803.4	55.3	55.7	34.9	41.2	3.9	1.0	0.0	53.9	54.3	74.0	20.1	19.7
3	7205.7	59.0	58.7	37.6	40.4	4.8	1.0	0.0	62.0	61.7	74.0	12.0	12.3
4	8514.2	55.8	55.7	36.9	39.6	5.2	0.4	0.0	58.7	58.6	74.0	15.3	15.4
5	9609.2	53.3	57.3	36.3	39.5	5.6	0.1	0.0	55.8	59.8	74.0	18.2	14.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12010.0	54.8	55.1	41.4	39.6	6.6	0.1	0.0	53.8	54.1	74.0	20.2	19.9
7	14412.0	54.5	57.0	41.7	41.0	6.7	0.2	0.0	52.6	55.1	74.0	21.4	18.9
8	16814.0	45.4	47.3	44.7	41.7	7.1	1.1	0.0	47.1	49.0	74.0	26.9	25.0
9	19216.0	45.7	45.3	40.1	40.3	7.6	2.0	0.0	45.6	45.2	74.0	28.4	28.8
10	21618.0	46.6	46.3	39.8	35.4	8.3	2.4	0.0	52.2	51.9	74.0	21.8	22.1
11	24020.0	44.7	44.6	40.4	32.9	8.2	0.1	0.0	51.0	50.9	74.0	23.0	23.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2389.1	37.6	37.2	31.0	39.9	2.6	0.0	-26.4	4.9	4.5	54.0	49.1	49.5
2*	2400.0	79.4	77.0	30.9	39.9	2.6	0.0	-26.4	46.6	44.2	54.0	-	-
3	4803.4	43.7	44.1	34.9	41.2	3.9	1.0	-26.4	15.9	16.3	54.0	38.1	37.7
3	7205.7	47.8	44.4	37.6	40.4	4.8	1.0	-26.4	24.4	21.0	54.0	29.6	33.0
4	8514.2	48.9	48.7	36.9	39.6	5.2	0.4	-26.4	25.4	25.2	54.0	28.6	28.8
5	9609.2	39.3	42.4	36.3	39.5	5.6	0.1	-26.4	15.4	18.5	54.0	38.6	35.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12010.0	40.7	41.5	41.4	39.6	6.6	0.1	-26.4	13.3	14.1	54.0	40.7	39.9
7	14412.0	40.1	41.8	41.7	41.0	6.7	0.2	-26.4	11.8	13.5	54.0	42.2	40.5
8	16814.0	35.0	34.7	44.7	41.7	7.1	1.1	-26.4	10.3	10.0	54.0	43.7	44.0
9	19216.0	32.5	32.1	40.1	40.3	7.6	2.0	-26.4	6.0	5.6	54.0	48.0	48.4
10	21618.0	32.7	32.6	39.8	35.4	8.3	2.4	-26.4	11.9	11.8	54.0	42.1	42.2
11	24020.0	31.8	31.8	40.4	32.9	8.2	0.1	-26.4	11.7	11.7	54.0	42.3	42.3

* Reference data

20dBc(Fundamental 2402MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	Factor	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
0	2401.7	119.9	118.9	30.9	39.9	2.7	0.0	0.0	113.6	112.6	-	-	-
2	2400.0	67.4	67.5	30.9	39.9	2.6	0.0	0.0	61.0	61.1	Funda-20dB	32.6	31.5

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.81*10^{-3}$ / $100*10^{-3}$) = -26.4 dB

Radiated Spurious Emission [Mode2]

(Sub Antenna)

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode2, Tx 2440MHz	HUMIDITY	: 45%	41%
Remarks	: Hor X-axis, Ver X-axis Sub Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4879.3	56.1	56.5	35.3	41.2	3.9	1.0	0.0	55.1	55.5	74.0	18.9	18.5
2	7319.2	60.5	60.4	37.8	40.4	4.8	0.5	0.0	63.2	63.1	74.0	10.8	10.9
3	8513.8	56.1	55.0	36.9	39.6	5.2	0.1	0.0	58.7	57.6	74.0	15.3	16.4
4	9758.9	57.5	57.3	36.2	39.6	5.6	0.2	0.0	59.9	59.7	74.0	14.1	14.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12200.0	56.1	57.3	41.5	39.8	6.6	0.3	0.0	55.2	56.4	74.0	18.8	17.6
6	14640.0	52.3	53.1	42.2	40.9	6.7	0.2	0.0	51.0	51.8	74.0	23.0	22.2
7	17080.0	49.9	50.5	44.5	41.8	7.1	1.1	0.0	51.3	51.9	74.0	22.7	22.1
8	19520.0	46.8	49.9	40.3	39.8	7.9	2.2	0.0	47.9	51.0	74.0	26.1	23.0
9	21960.0	47.0	46.4	39.8	35.9	8.2	1.0	0.0	50.6	50.0	74.0	23.4	24.0
10	24400.0	45.4	44.8	40.4	33.8	8.4	0.6	0.0	51.5	50.9	74.0	22.5	23.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4879.3	45.5	43.7	35.3	41.2	3.9	1.0	-26.4	18.1	16.3	54.0	35.9	37.7
2	7319.2	46.8	46.5	37.8	40.4	4.8	0.5	-26.4	23.1	22.8	54.0	30.9	31.2
3	8513.8	49.3	47.7	36.9	39.6	5.2	0.1	-26.4	25.5	23.9	54.0	28.5	30.1
4	9758.9	42.4	42.7	36.2	39.6	5.6	0.2	-26.4	18.4	18.7	54.0	35.6	35.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12200.0	41.7	41.4	41.5	39.8	6.6	0.3	-26.4	14.4	14.1	54.0	39.6	39.9
6	14640.0	37.7	38.4	42.2	40.9	6.7	0.2	-26.4	10.0	10.7	54.0	44.0	43.3
7	17080.0	36.5	37.4	44.5	41.8	7.1	1.1	-26.4	11.5	12.4	54.0	42.5	41.6
8	19520.0	32.6	33.2	40.3	39.8	7.9	2.2	-26.4	7.3	7.9	54.0	46.7	46.1
9	21960.0	34.0	33.9	39.8	35.9	8.2	1.0	-26.4	11.2	11.1	54.0	42.8	42.9
10	24400.0	31.6	31.6	40.4	33.8	8.4	0.6	-26.4	11.3	11.3	54.0	42.7	42.7

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.81*10^{-3}$ / $100*10^{-3}$ -26.4 dB

Radiated Spurious Emission [Mode2]

(Sub Antenna)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company	: Panasonic Communications Co.,Ltd.	REPORT NO	: 25IE0109-HO	
Equipment	: Wireless Speakerphone	REGULATION	: Fcc Part15 Subpart C 15.247(d)	
Model	: KX-THA16	TEST DISTANCE	: 3/1m	
Sample No.	: 0080F08013AD	DATE	: 05/24/2005	05/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	23deg.C
Mode	: Mode2, Tx 2480MHz	HUMIDITY	: 45%	41%
Remarks	: Hor X-axis, Ver X-axis Sub Antenna	ENGINEER	: Kenichi Adachi	Kenichi Adachi

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1*	2483.5	74.4	74.6	30.8	40.0	2.5	0.0	0.0	67.7	67.9	74.0	-	-
2	4959.5	54.2	54.3	35.8	41.3	3.9	1.1	0.0	53.7	53.8	74.0	20.3	20.2
3	7441.0	61.5	60.5	37.9	40.3	4.8	0.7	0.0	64.6	63.6	74.0	9.4	10.4
3	8504.4	56.6	55.1	36.9	39.6	5.2	0.1	0.0	59.2	57.7	74.0	14.8	16.3
4	9920.0	57.6	57.0	36.2	39.6	5.8	0.3	0.0	60.3	59.7	74.0	13.7	14.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12400.0	54.2	53.5	41.6	40.0	6.6	0.4	0.0	53.3	52.6	74.0	20.7	21.4
6	14880.0	55.4	54.4	42.6	40.9	6.9	0.5	0.0	55.0	54.0	74.0	19.0	20.0
7	17360.0	48.6	48.1	44.4	41.6	7.1	0.9	0.0	49.9	49.4	74.0	24.1	24.6
8	19840.0	45.8	44.5	40.4	39.4	8.0	1.5	0.0	46.8	45.5	74.0	27.2	28.5
9	22320.0	46.5	46.3	39.8	35.3	8.2	1.0	0.0	50.7	50.5	74.0	23.3	23.5
10	24800.0	46.2	46.4	40.7	34.6	8.6	1.3	0.0	52.7	52.9	74.0	21.3	21.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter or ATT	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1*	2483.5	60.5	61.1	30.8	40.0	2.5	0.0	-26.4	27.4	28.0	54.0	-	-
2	4959.5	41.3	42.9	35.8	41.3	3.9	1.1	-26.4	14.4	16.0	54.0	39.6	38.0
3	7441.0	46.8	45.7	37.9	40.3	4.8	0.7	-26.4	23.5	22.4	54.0	30.5	31.6
3	8504.4	49.8	47.8	36.9	39.6	5.2	0.1	-26.4	26.0	24.0	54.0	28.0	30.0
4	9920.0	43.1	42.3	36.2	39.6	5.8	0.3	-26.4	19.4	18.6	54.0	34.6	35.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12400.0	40.5	40.3	41.6	40.0	6.6	0.4	-26.4	13.2	13.0	54.0	40.8	41.0
6	14880.0	40.4	38.0	42.6	40.9	6.9	0.5	-26.4	13.6	11.2	54.0	40.4	42.8
7	17360.0	35.1	35.2	44.4	41.6	7.1	0.9	-26.4	10.0	10.1	54.0	44.0	43.9
8	19840.0	32.5	31.8	40.4	39.4	8.0	1.5	-26.4	7.1	6.4	54.0	46.9	47.6
9	22320.0	33.4	33.4	39.8	35.3	8.2	1.0	-26.4	11.2	11.2	54.0	42.8	42.8
10	24800.0	33.0	33.0	40.7	34.6	8.6	1.3	-26.4	13.1	13.1	54.0	40.9	40.9

* Reference data

Marker-Delta Method (Delta chart: RBW:50kHz (= SPAN / 100), VBW: 200kHz, SPAN: 5MHz)

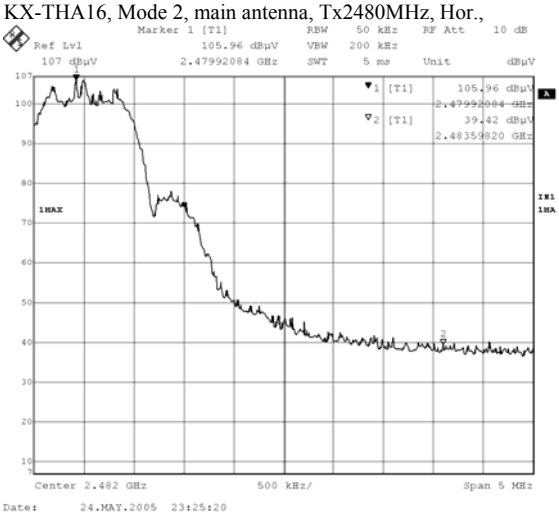
No.	FREQ	Carrier Level - delta S/A READING (PK)		ANT	AMP	CABLE	ATT	Dwell	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	LOSS	Factor	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Carrier Reading - Delta + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
PK DETECT													
1	2483.5	56.2	57.7	30.8	40.0	2.5	0.0	0.0	49.5	51.0	74.0	24.5	23.0
AV DETECT													
1	2483.5	46.5	47.6	30.8	40.0	2.5	0.0	0.0	39.8	40.9	54.0	14.2	13.1

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*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.
*Dwell time factor = 20log (Dwell time / 100ms) = 20log ($4.81*10^{-3}$ / $100*10^{-3}$) = -26.4 dB

[Reference data]

Delta marker chart

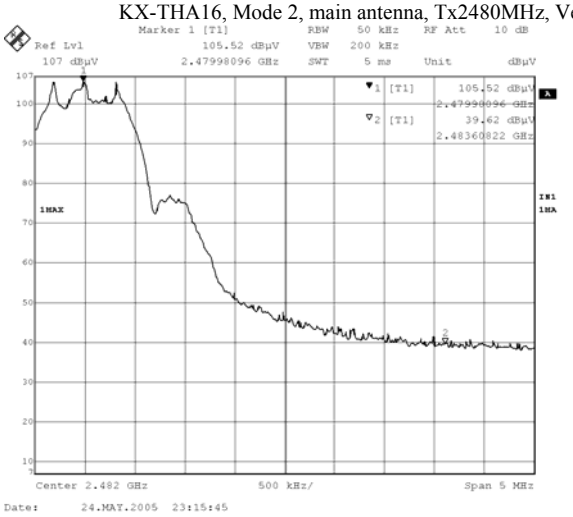
KX-THA16, Mode 2, main antenna, Tx2480MHz, Hor.,



RBW = span 5MHz / 100 = 50kHz
VBW = RBW x 3 = 150kHz -> 200kHz

Carrier read to 2483.59820MHz read
-66.54dB

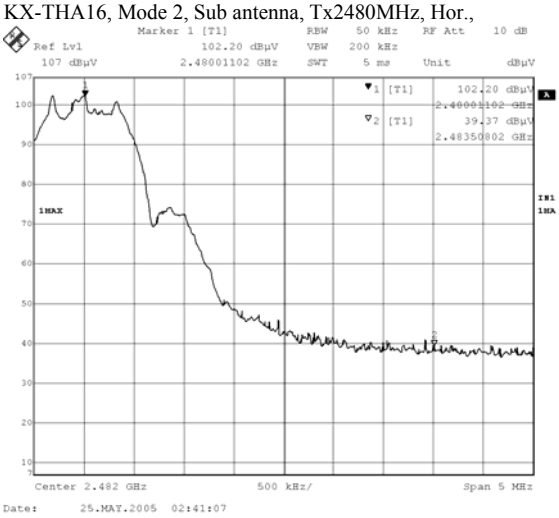
KX-THA16, Mode 2, main antenna, Tx2480MHz, Ver.,



RBW = span 5MHz / 100 = 50kHz
VBW = RBW x 3 = 150kHz -> 200kHz

Carrier read to 2483.60822MHz read
-65.9dB

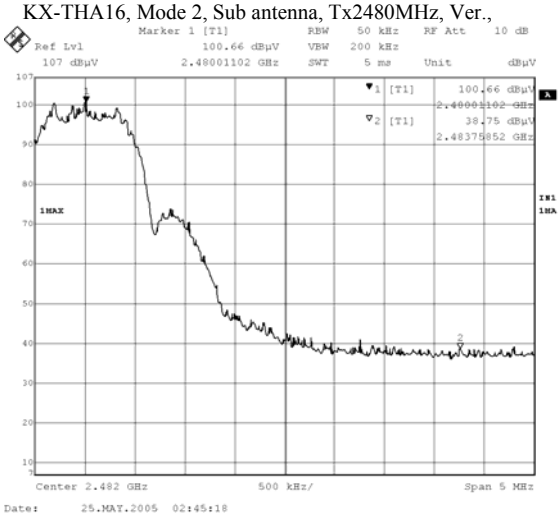
KX-THA16, Mode 2, Sub antenna, Tx2480MHz, Hor.,



RBW = span 5MHz / 100 = 50kHz
VBW = RBW x 3 = 150kHz -> 200kHz

Carrier read to 2483.50802MHz read
-62.83dB

KX-THA16, Mode 2, Sub antenna, Tx2480MHz, Ver.,



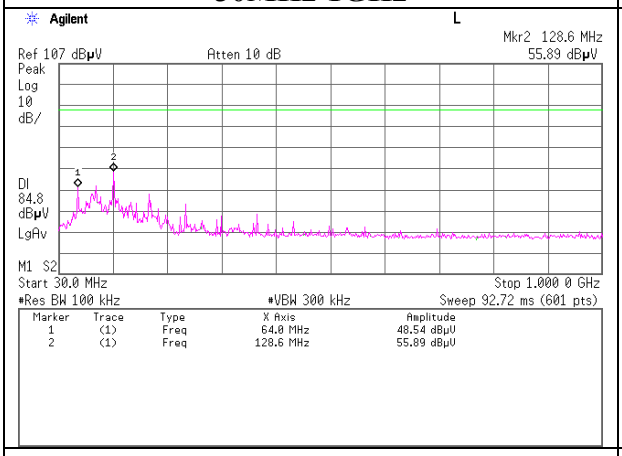
RBW = span 5MHz / 100 = 50kHz
VBW = RBW x 3 = 150kHz -> 200kHz

Carrier read to 2483.75852MHz read
-61.91dB

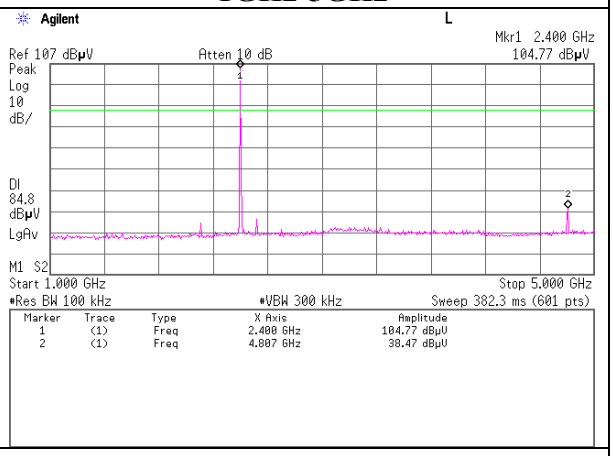
Conducted Spurious Emission [Mode2]

Ch:Low

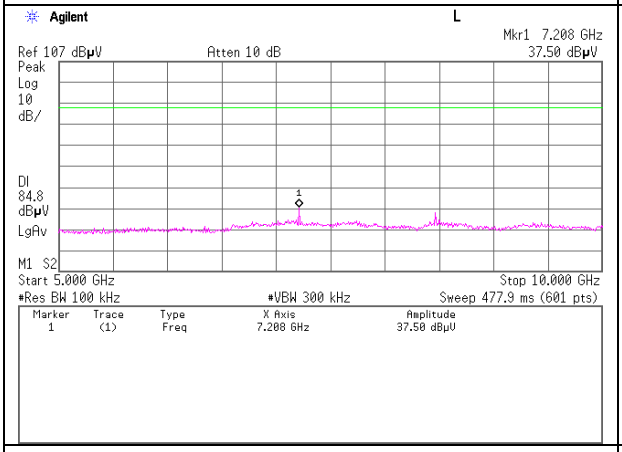
30MHz-1GHz



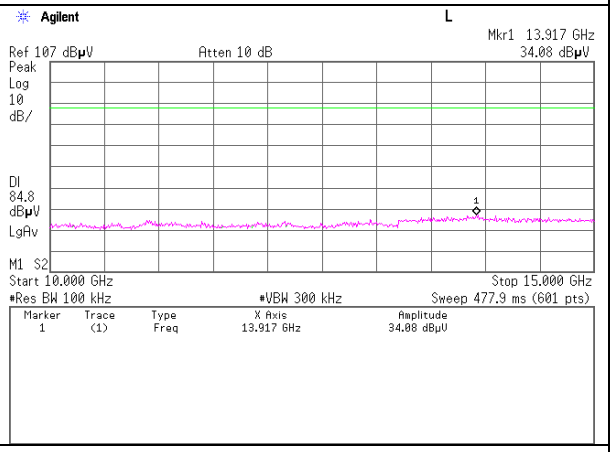
1GHz-5GHz



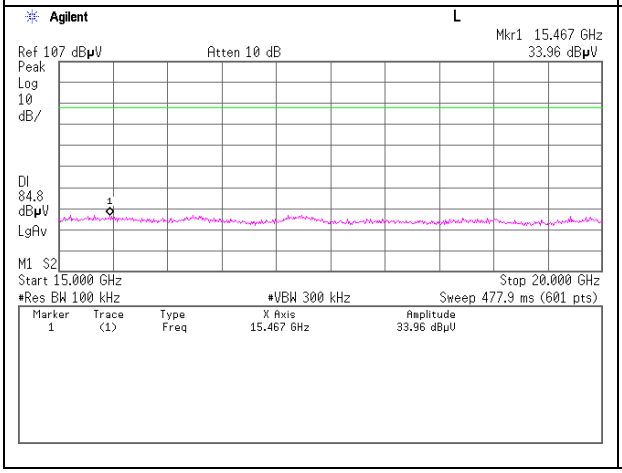
5GHz-10GHz



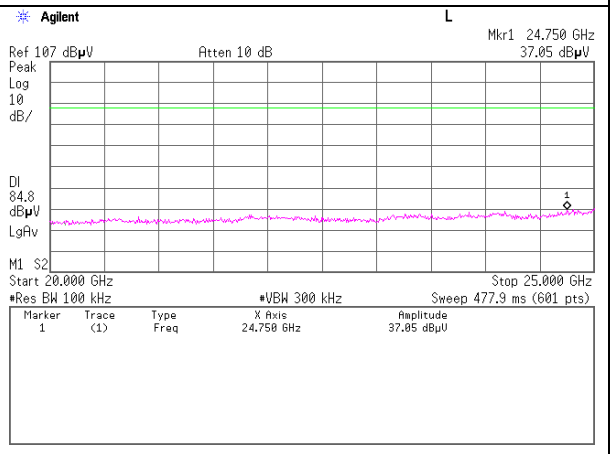
10GHz-15GHz



15GHz-20GHz



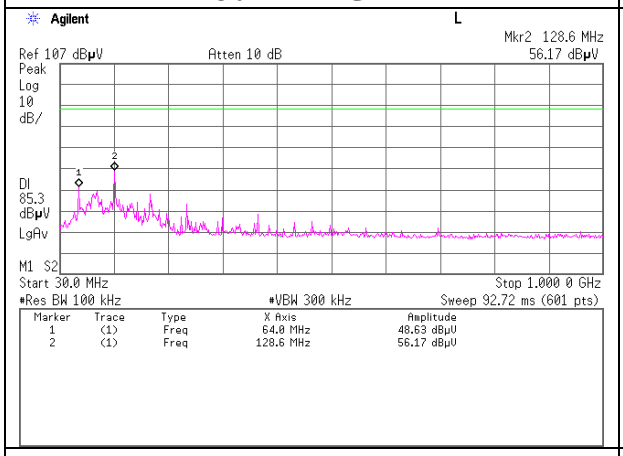
20GHz-25GHz



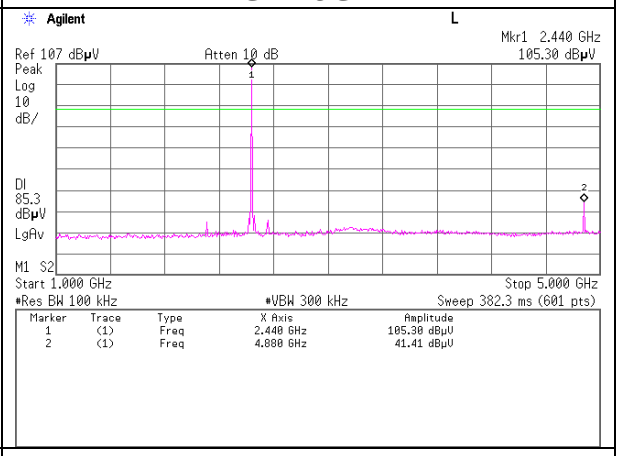
Conducted Spurious Emission [Mode2]

Ch:Mid

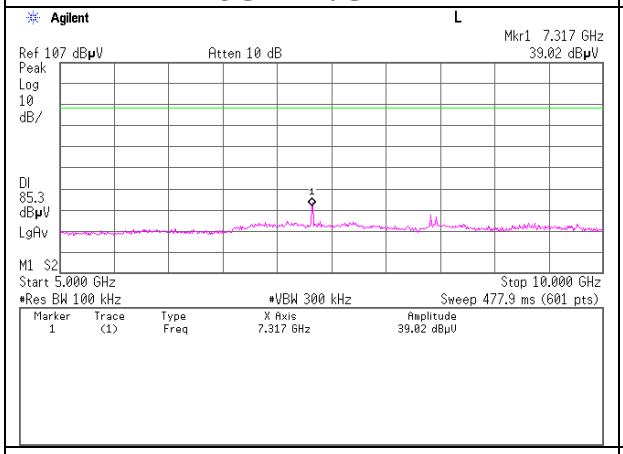
30MHz-1GHz



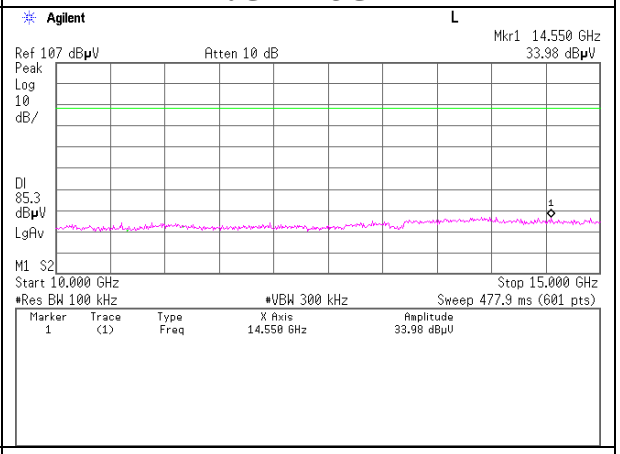
1GHz-5GHz



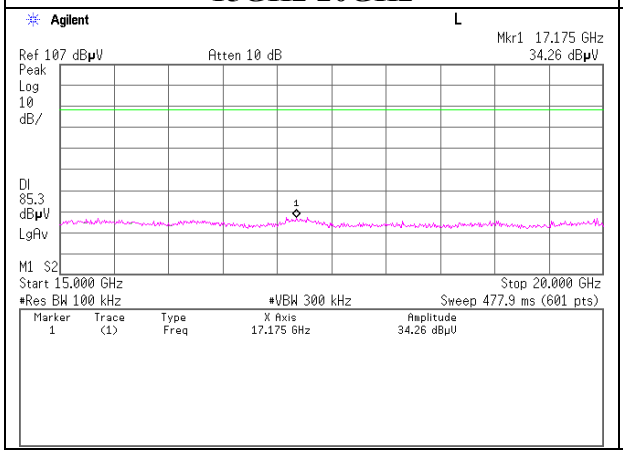
5GHz-10GHz



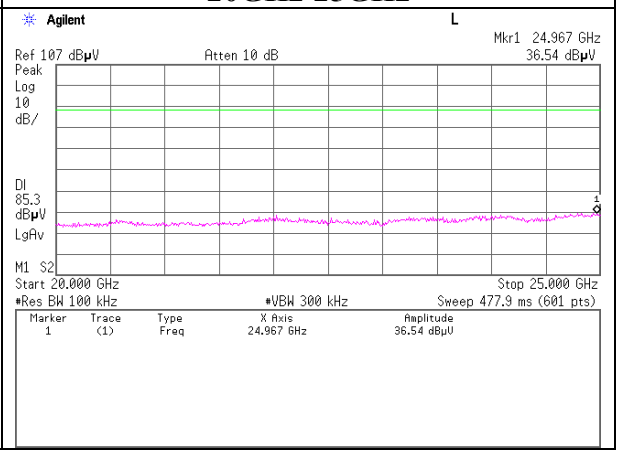
10GHz-15GHz



15GHz-20GHz



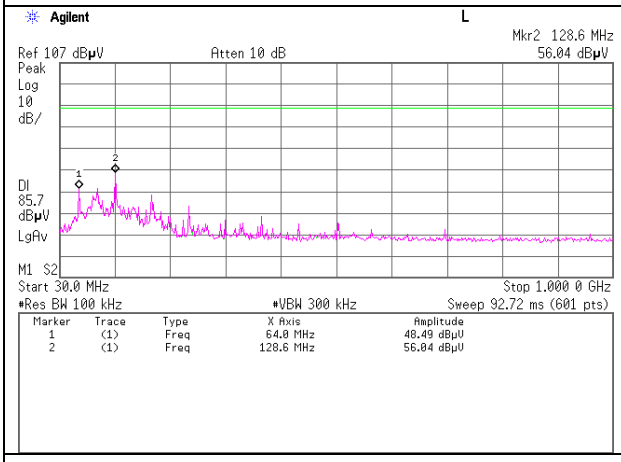
20GHz-25GHz



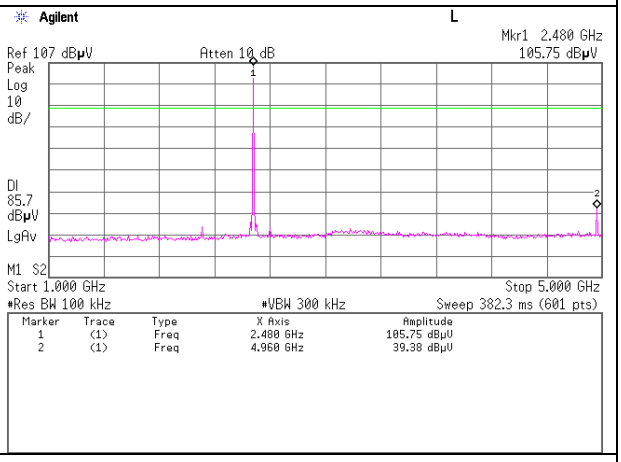
Conducted Spurious Emission [Mode2]

Ch:High

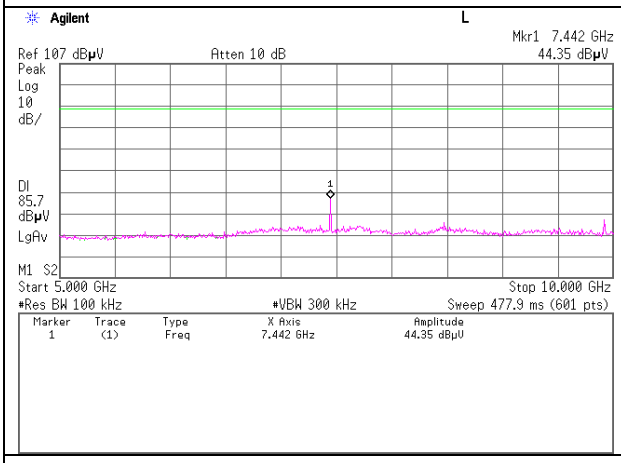
30MHz-1GHz



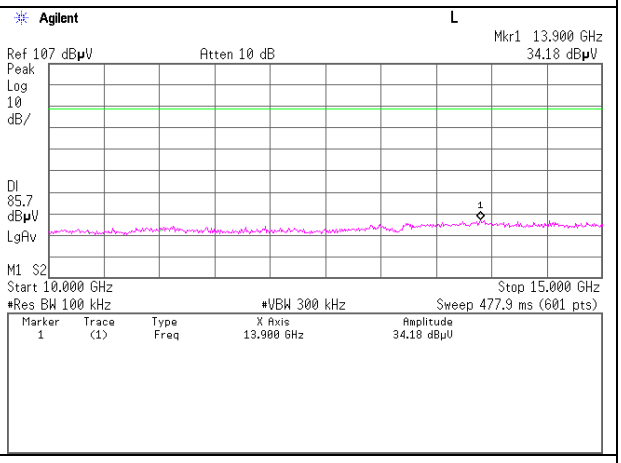
1GHz-5GHz



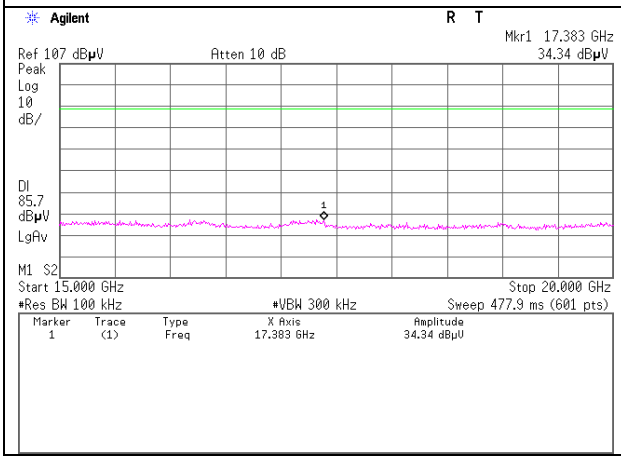
5GHz-10GHz



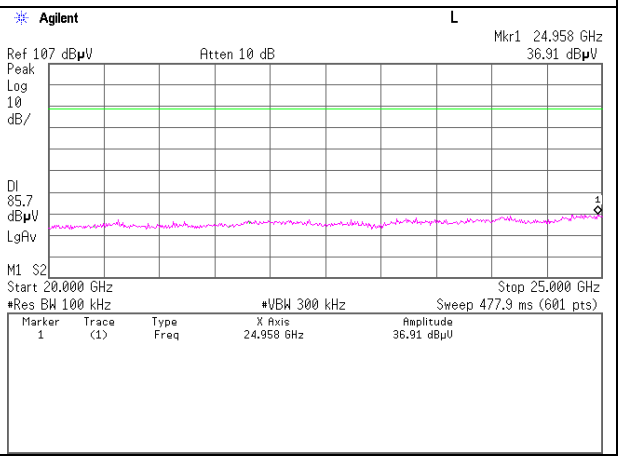
10GHz-15GHz



15GHz-20GHz



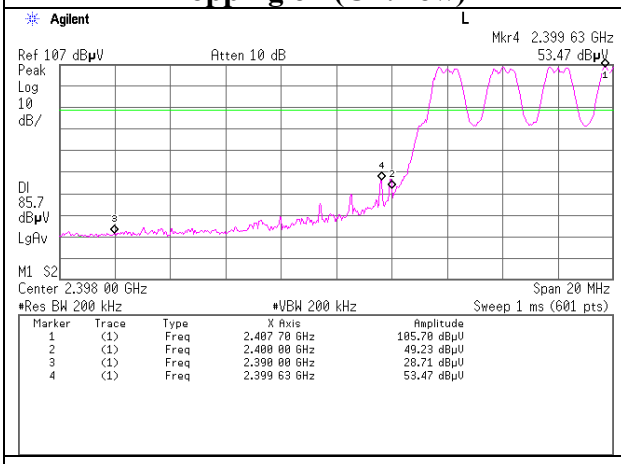
20GHz-25GHz



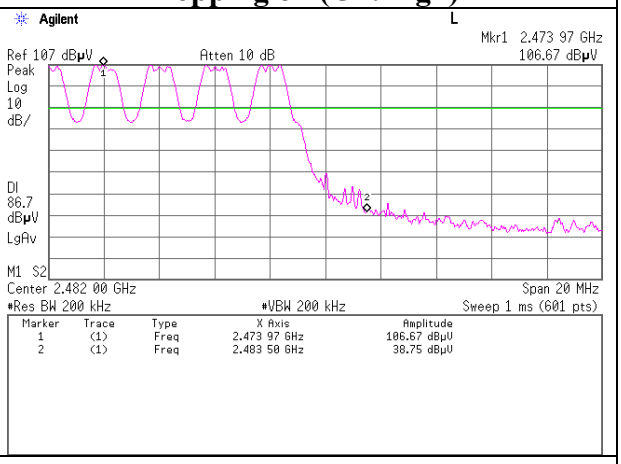
Conducted Spurious Emission [Mode2]

Band Edge compliance

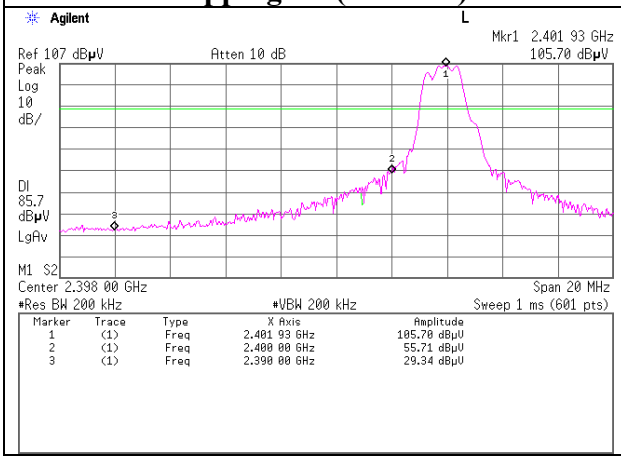
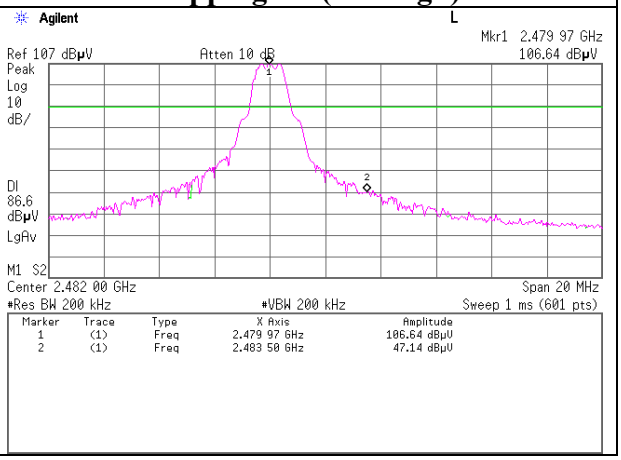
Hopping on (Ch:Low)



Hopping on (Ch:High)



Hopping off (Ch:Low)



Hopping off (Ch:High)