




EMI TEST REPORT


Test Report No. : 26CE0011-HO-1b

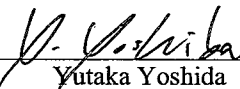
Applicant : Panasonic Communications Co., Ltd.
Type of Equipment : Cordless Telephone (Handset)
Model No. : KX-TGA560
FCC ID : ACJ96NKX-TG5631
Test standard : FCC Part 15 Subpart C
Section 15.207, Section 15.247: 2005
Test Result : Complied

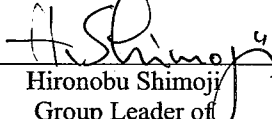
1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation. We hereby certify that the data contain a true representation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

Date of test: October 22 to 27, 2005

Tested by: 
Mitsuru Fujimura
EMC Services


Kenichi Adachi
EMC Services


Yutaka Yoshida
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Approved by: 
Hironobu Shimoji
Group Leader of
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CONTENTS	PAGE
SECTION 1: Client information	3
SECTION 2: Equipment under test (E.U.T.)	3
SECTION 3: Test specification, procedures & results	5
SECTION 4: Operation of E.U.T. during testing	8
SECTION 5: Spurious Emission	9
SECTION 6: Bandwidth	10
SECTION 7: Maximum Peak Output Power	10
SECTION 8: Carrier Frequency Separation	10
SECTION 9: Number of Hopping Frequency	10
SECTION 10: Dwell time	10
APPENDIX 1: Photographs of test setup	11
Spurious Emission (Radiated)	11
Worst Case Position (Y-axis:Horizontal / Z-axis:Vertical)	13
APPENDIX 2: Test instruments	14
APPENDIX 3: Data of EMI test	16
Carrier Frequency Separation	16
20dB Bandwidth	18
Number of Hopping Frequency	20
Dwell time	22
Maximum Peak Output Power	24
Radiated Spurious Emission	27
Conducted Spurious Emission	33

SECTION 1: Client information

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

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

2.1 Identification of E.U.T.

Type of Equipment	Cordless Telephone (Handset)	
Model No.	KX-TGA560	
Serial No.	1 (for Radiated emissions and Conducted emissions) 2 (for Antenna terminal conducted emissions)	
Country of Manufacture	Japan	
Rating (AC adaptor output)	3.6VDC (Ni-MH Battery Pack)	
	Model Name :	HHR-P104
	Rating :	DC3.6V/830mAh
	Manufacture	Panasonic
Condition of EUT	Engineering prototype (Not for sale: This sample is equivalent to mass-produced items.)	
Operation Clock	Main clock: 13.824 MHz	
Receipt Date of Sample	October 22, 2005	
Category Identified	Portable device	

2.2 Product Description

Equipment Type	Transceiver
Frequency band	Low Channel = 5759.70240MHz High Channel = 5838.18697MHz
Bandwidth & Channel spacing	Bandwidth: 79MHz Channel spacing: 891.87kHz
Type of Modulation	FHSS
Antenna Type	5/8 lambda Pattern-Antenna
Antenna Connector Type	N/A
Antenna Gain	4dBi (Typ.)
Mode of Operation	Duplex
ITU code	F1E
Power Supply (RF Part)	DC 3.6V
Method of Frequency Generation	Synthesizer

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FCC 15.31 (e)

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

FCC Part 15.203 Antenna requirement

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

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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	N/A	N/A*1)
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	3.2dB 34556.6MHz Ver., AV	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.

*1) The test is not applicable, because the EUT is not connected to the public utility (AC) power line.

Uncertainty:

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is $\pm 4.5\text{dB}(3\text{m})/\pm 4.7\text{dB}(10\text{m})$.

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is $\pm 5.2\text{dB}(3\text{m})/\pm 3.8\text{dB}(10\text{m})$.

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is $\pm 6.6\text{dB}$.

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is $\pm 3.0\text{dB}$.

*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.

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3.3 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
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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	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247A-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.

3.4 Test set up, Test instruments and Data of EMI

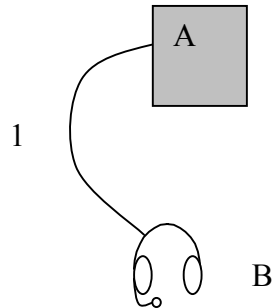
Refer to APPENDIX 1 to 3.

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

4.1 Operating Modes

The mode is used : [FHSS]
Transmitting mode
Low Channel : 5759.70240MHz
Mid Channel : 5798.05084MHz
High Channel : 5838.18697MHz
Receiving mode

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	Cordless Telephone (Handset)	KX-TGA560	1 (for Radiated and Conducted emissions) 2 (for Antenna terminal conducted emissions)	Panasonic Communications	ACJ96NKX-TG5631
B	Headphone	KX-TCA88	-	Panasonic Communications	-

List of cables used

No.	Name	Length (m)	Shield
1	Headset Cable	1.8	N

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SECTION 5: 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, 0.5m by 1.0m, raised 80cm above the conducting ground plane. The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 18GHz) and 1m(Upper 18GHz) and 0.5m (Upper 26.5GHz).

The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

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

20dBc was applied to the frequency over the limit of FCC 15.209 and outside the restricted band of 15.205.

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

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SECTION 6: Bandwidth

Test Procedure

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

Test data : APPENDIX 3
Test result : Pass

SECTION 7: Maximum Peak Output Power

Test Procedure

The Maximum Peak Output Power was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 8: 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 9: 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 10: 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

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APPENDIX 1: Photographs of test setup

Spurious Emission (Radiated)

Front



Rear



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

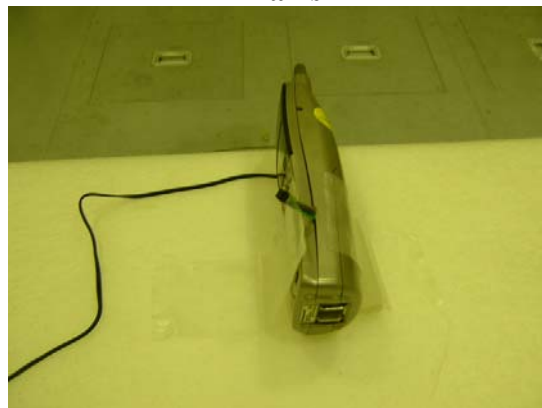
X-axis



Y-axis



Z-axis



APPENDIX 2: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
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
MPA-05	Pre Amplifier	TSJ	TSJ 1-26.5GHz PreAmp	RE	2005/07/08 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2005/02/03 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2005/08/30 * 12
MBF-03	SHF Bandpass Filter	M-City	13GHz BPF	RE	2005/05/20 * 12
MAT-21	Attenuator(20dB)(above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	RE	2005/01/11 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/01/10 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2005/01/10 * 12
MCC-17	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX 101	RE	2005/02/03 * 12
MPA-03	Microwave System Power Amplifier	Agilent	83050A	RE	2005/05/11 * 12
MCC-14	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX 101	RE	2005/02/03 * 12
MHA-03	Horn Antenna	EMCO	3160-10	RE	2005/01/10 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	AT	2005/09/16 * 12
MAT-24	Attenuator(10dB)(above 1GHz)	Agilent	8493C	AT	2005/06/03 * 12
MCC-22	Microwave Cable 1G-50GHz	Storm	421-011 (90-011-080)	AT	2005/04/29 * 12
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2005/04/11 * 12
MCC-04	Microwave Cable 1G-50GHz	Storm	421-011 (90-1394-079)	RE	2005/01/05 * 12
MHA-04	Horn Antenna	EMCO	3160-10	RE	2005/01/10 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	RE	2005/05/19 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2004/12/16 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2005/02/24 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2005/09/07 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE	2005/02/02 * 12

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

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Test Item:

RE: Radiated Spurious Emission

AT: Antenna Terminal Measurement

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APPENDIX 3: Data of EMI test

Carrier Frequency Separation

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Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Panasonic Communications Co., Ltd.	REGULATION	: FCC Part15 Subpart C 15.247(a)(1)
EQUIPMENT	: Cordless Telephone (Handset)	TEST DISTANCE	: -
MODEL	: KX-TGA560	DATE	: 10/24/2005
S/ N	: 2	TEMPERATURE	: 23deg.C
POWER	: DC 3.6 V	HUMIDITY	: 43%
MODE	: Tx(Hopping on)	ENGINEER	: Kenichi Adachi

Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	5759.7	0.887	>20dB Bandwidth and 25[kHz]
Mid	5798.1	0.895	>20dB Bandwidth and 25[kHz]
High	5838.2	0.880	>20dB Bandwidth and 25[kHz]

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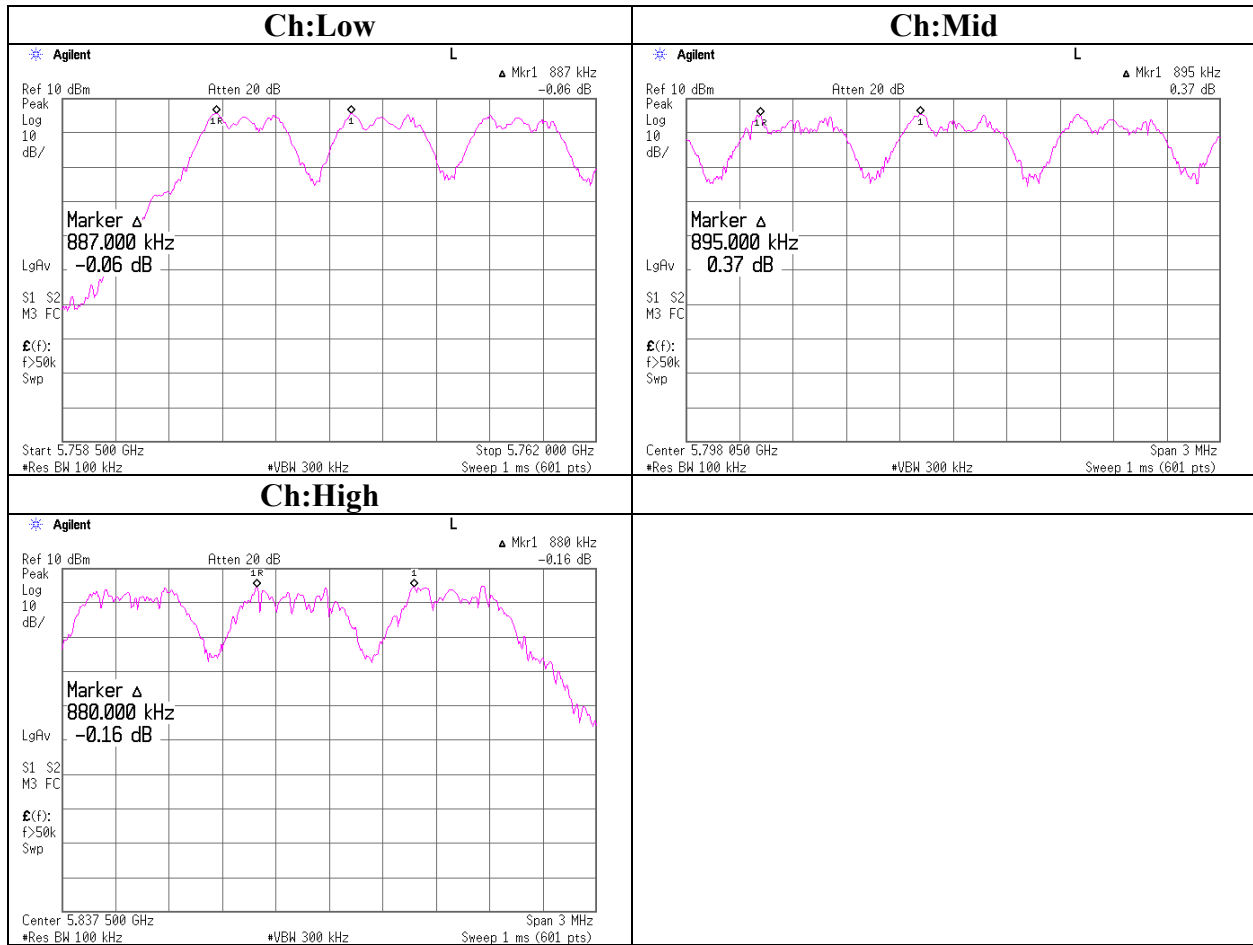
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Carrier Frequency Separation



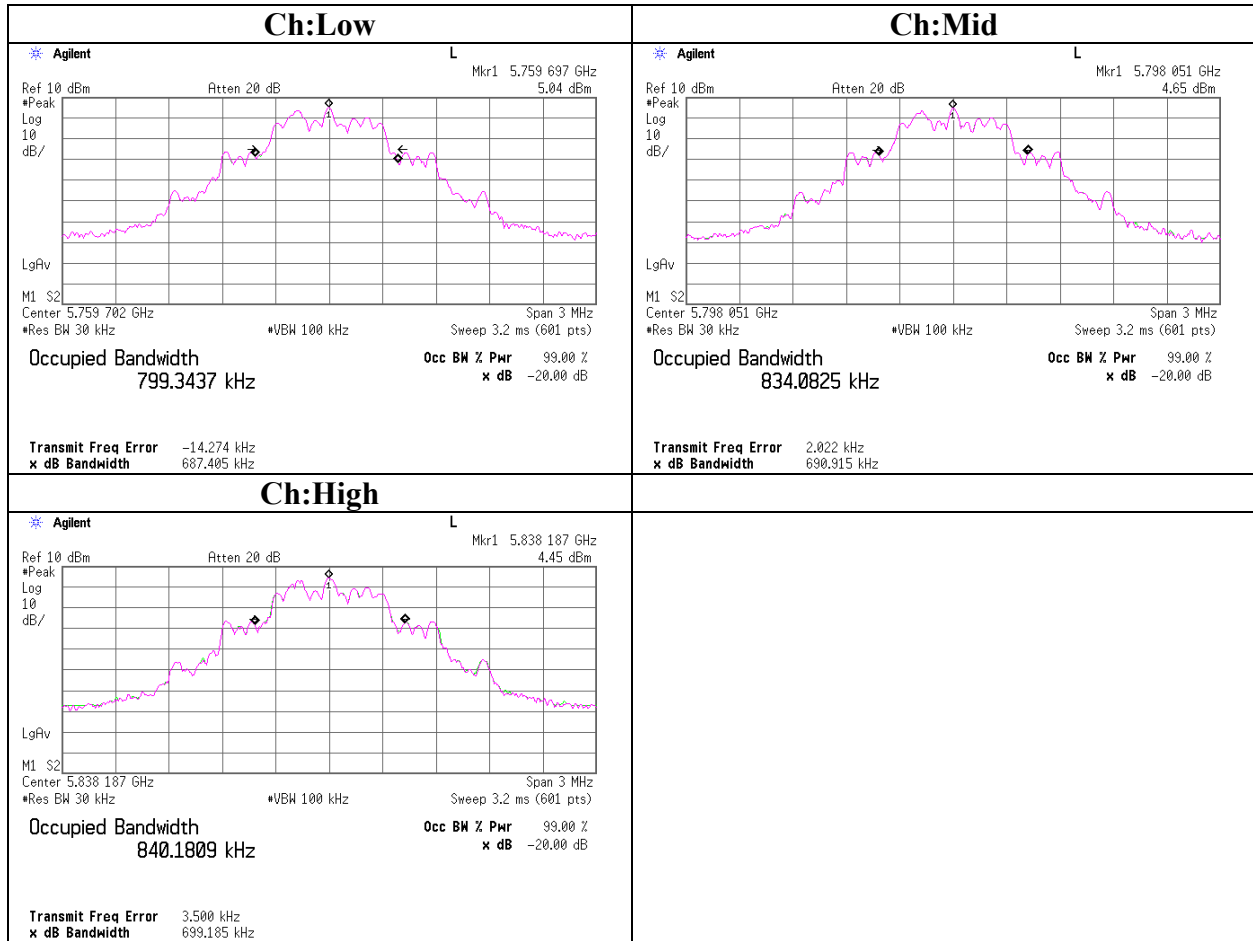
20dB Bandwidth

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

COMPANY : Panasonic Communications Co., Ltd. REGULATION : FCC Part15 Subpart C 15.247(a)(1)(ii)
EQUIPMENT : Cordless Telephone (Handset) TEST DISTANCE : -
MODEL : KX-TGA560 DATE : 10/24/2005
S/ N : 2 TEMPERATURE : 23deg.C
POWER : DC 3.6 V HUMIDITY : 43%
MODE : Tx(Hopping off) ENGINEER : Kenichi Adachi

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	5759.7	0.687	≦ 1
Mid	5798.1	0.691	≦ 1
High	5838.2	0.699	≦ 1

20dB Bandwidth



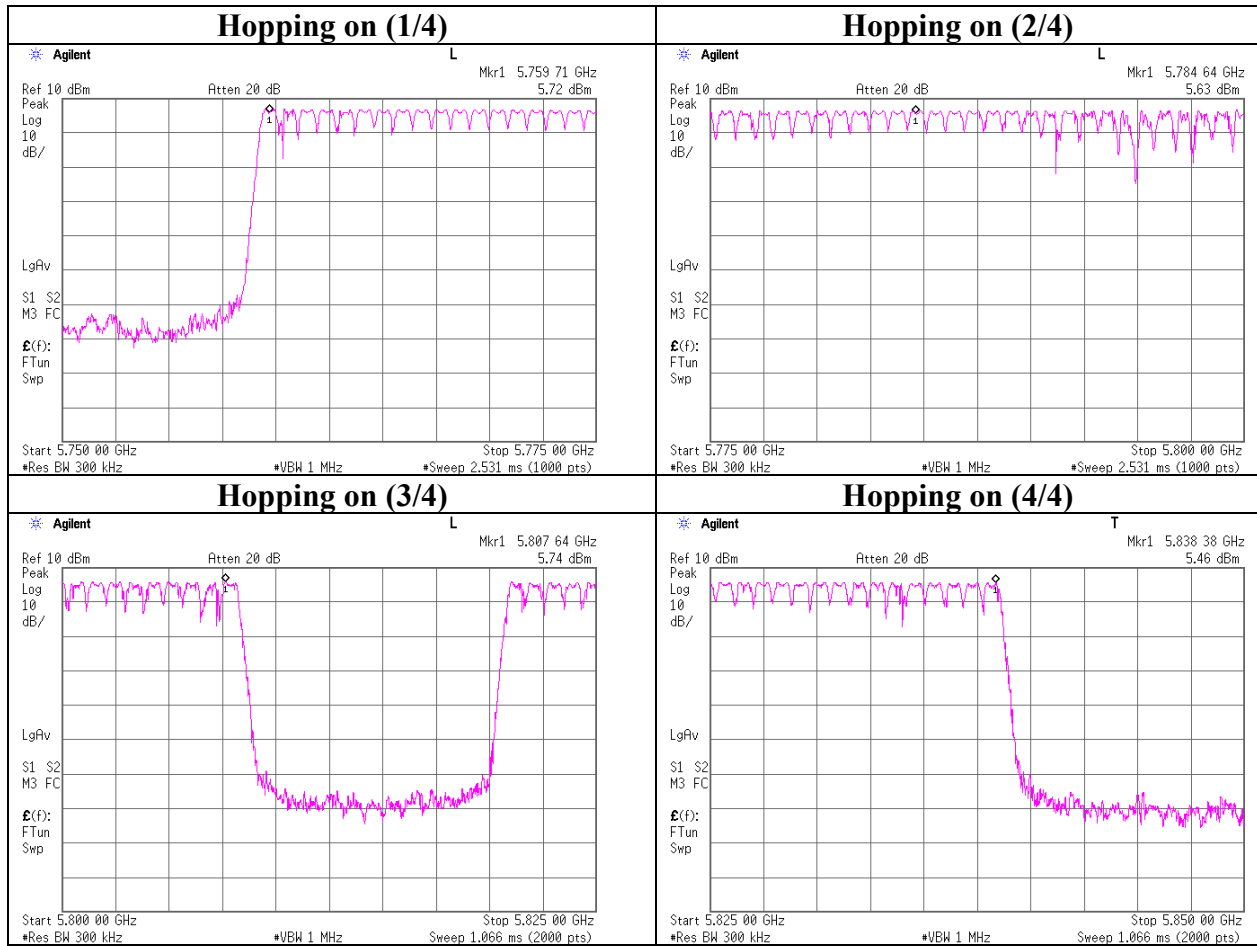
Number of Hopping Frequency

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

COMPANY : Panasonic Communications Co., Ltd. REGULATION : FCC Part15 Subpart C 15.247(a)(1)(ii)
EQUIPMENT : Cordless Telephone (Handset) TEST DISTANCE : -
MODEL : KX-TGA560 DATE : 10/24/2005
S/N : 2 TEMPERATURE : 23deg.C
POWER : DC 3.6 V HUMIDITY : 43%
MODE : Tx(Hopping on) ENGINEER : Kenichi Adachi

Mode	Number of channel [time]	Limit [time]
Tx(Hoppng on)	75	≥ 75

Number of Hopping Frequency



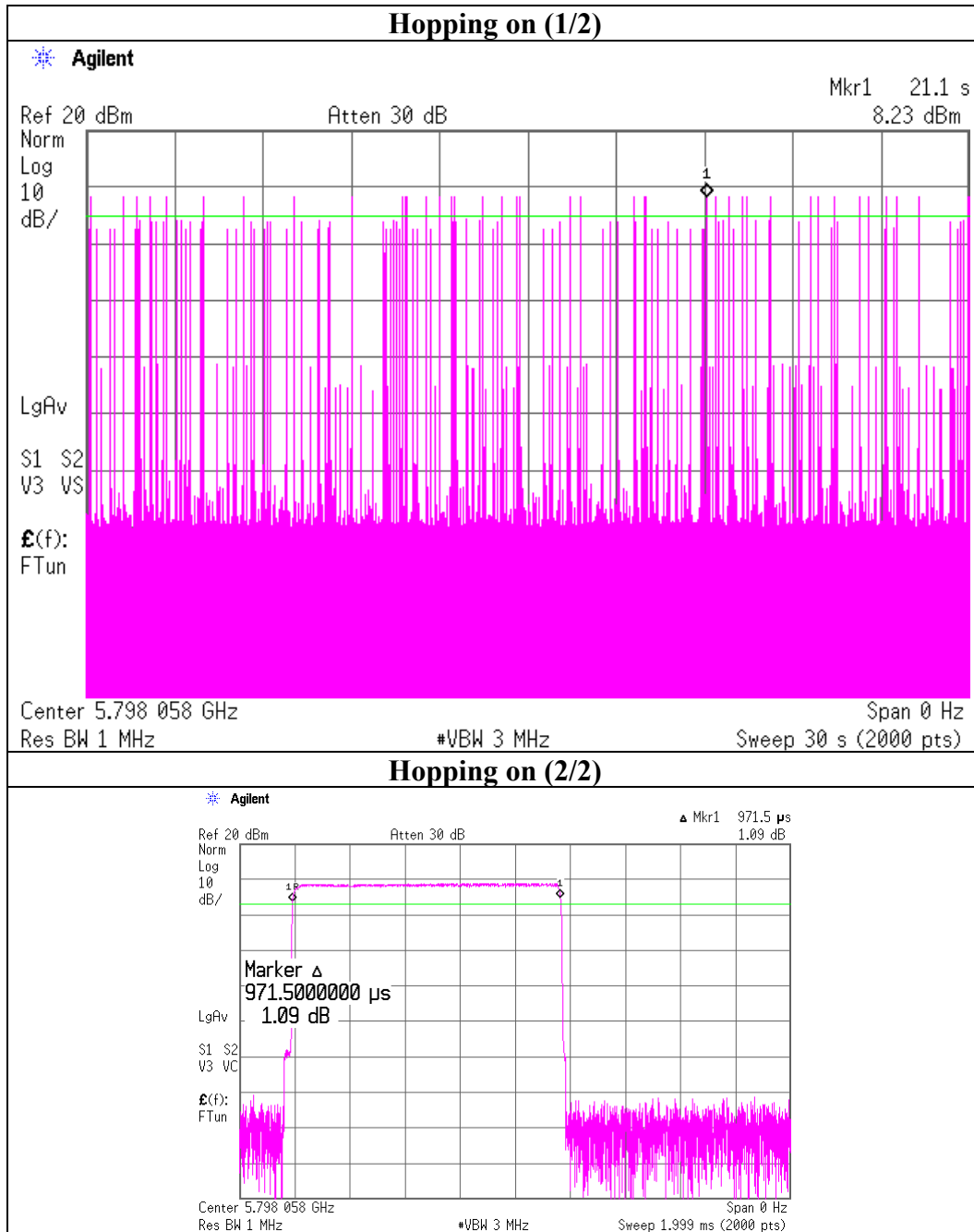
Dwell time

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Head Office EMC Lab. No.3 Shielded Room

COMPANY : Panasonic Communications Co.,Ltd. REGULATION : FCC Part15 Subpart C 15.247(a)(1)(ii)
EQUIPMENT : Cordless Telephone (Handset) TEST DISTANCE : -
MODEL : KX-TGA560 DATE : 10/27/2005
S/N : 2 TEMPERATURE : 23deg.C
POWER : DC 3.6 V HUMIDITY : 43%
MODE : Tx(Hopping on) ENGINEER : Kenichi Adachi

Mode	Number of transmission in a 30sec	Length of transmission time [msec]	Result [msec]	Limit [msec]
Tx Hopping on	37times / 30 sec. x 30 = 37 times	0.972	36	400

Dwell time



Maximum Peak Output Power

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COMPANY : Panasonic Communications Co., Ltd. REGULATION : FCC Part15 Subpart C 15.247(b)(1)
EQUIPMENT : Cordless Telephone (Handset) TEST DISTANCE : -
MODEL : KX-TGA560 DATE : 10/24/2005
S/ N : 2 TEMPERATURE : 23deg.C
POWER : DC 3.6 V HUMIDITY : 43%
MODE : Tx(Hopping off) ENGINEER : Kenichi Adachi

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	5759.7	6.13	2.90	9.77	18.80	30.00	11.20
Mid	5798.1	5.68	2.91	9.78	18.37	30.00	11.63
High	5838.2	5.44	2.92	9.79	18.15	30.00	11.85

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.

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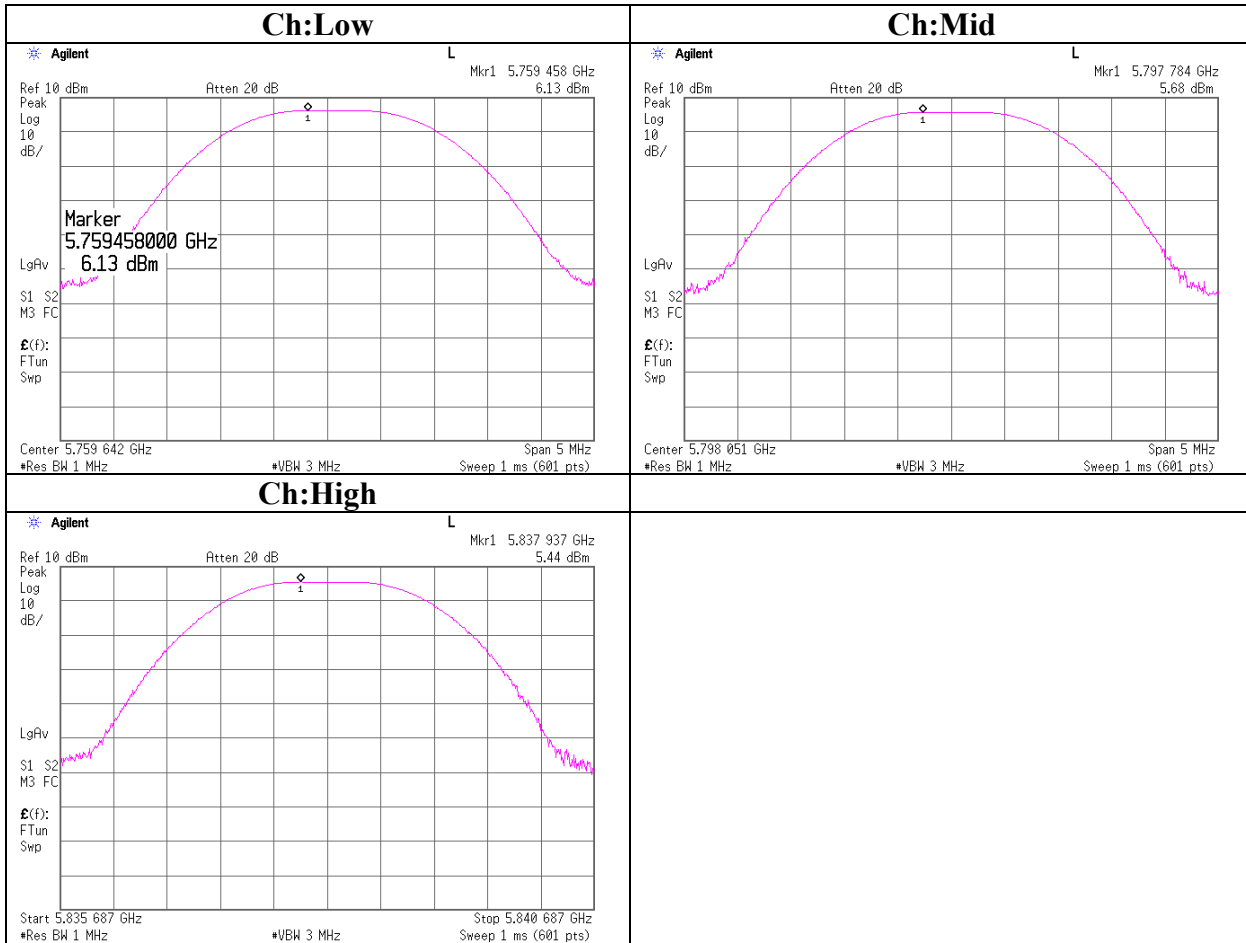
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Maximum Peak Output Power



Maximum Peak Output Power (EIRP)

Reference data for SAR Testing

Output power measurement method

- 1) EUT was placed on a platform of nominal size, 0.5m by 1.0m, raised 1.5m above the conducting ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The Radiated Electric Field Strength intensity has been measured in semi anechoic chamber with absorbent materials lined (Type VHP 12) on a ground plane and at a distance of 3m.
The measuring antenna height was varied between 1 to 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.
- 2) Exchanged the EUT to the Substitution Antenna, the measurement was set for the same height 1.5m as the EUT. The frequency below 1GHz of the Substitution Antenna was used as the Half wave dipole Antenna, which is harmonized with the measured frequency in 1).
The frequency above 1GHz of the Substitution Antenna was used with Horn Antenna.
The Substitution Antenna was connected with the Signal Generator, and the polarized electromagnetic radiation of the Substitution Antenna was matched with the one of the measuring Antenna, which was set with the Signal Generator to the measured frequency in 1). Then, we set with the Output power (CW) of the Signal Generator where the measuring electromagnetic field is equal to the measured value in 1).
The measuring antenna height was varied between 1 to 4m to obtain the maximum receiving level.
Its Output power of Signal Generator was recorded.
- 3) Effective radiated power was calculated by subtracting the cable loss and the attenuator loss connected between the Signal Generator and the Substitution Antenna from the Output power of the Signal Generator recorded in 2).
For the usage of the Antenna (Horn Antenna) except for the Half wave dipole Antenna (2.15dBi) for the Substitution Antenna, the Effective radiated power was calculated by compensating the finite difference in the Antenna gain of the Half wave dipole Antenna, and Substitution Antenna.

Spectrum Analyzer setting

Resolution bandwidth set to 1MHz and Video bandwidth to 3MHz.

EIRP			
Ch	Freq.	E-field	EIRP
	[MHz]	[dB μ V/m]	[dBm]
Low	5759.70240	125.110	21.1
Mid.	5798.05084	124.561	20.5
High	5838.18697	124.668	20.6

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Radiated Spurious Emission (Tx Low)

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

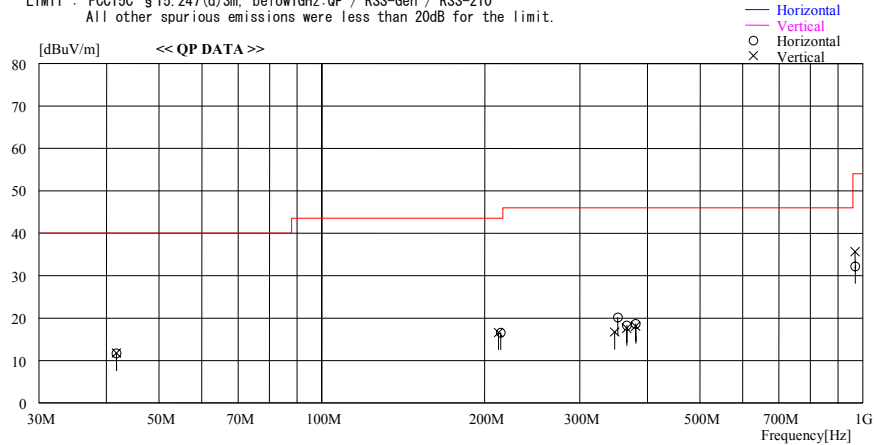
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/26 00:40:09

Applicant : Panasonic Communications Co., Ltd. Report No. : 26CE0011-HO
Kind of EUT : Cordless Telephone (Handset) Power : DC 3.6V
Model No. : KX-TGA560 Temp./Humi. : 25deg.C / 56%
Serial No. : 1 Operator : Yutaka Yoshida

Mode / Remarks : Tx5759.70240MHz /EUT-Axis:Hor Y-axis, Ver Z-axis (Max-axis)

LIMIT : FCC15C §15.247(d)3m, below1GHz:QP / RSS-Gen / RSS-210
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	
			Factor [dB/m]	Loss& Gain [dB]					[dBuV/m]	[dB]
41.713	21.4	QP	12.9	-22.6	11.7	-1	100	Hori.	40.0	28.3
41.721	21.5	QP	12.9	-22.6	11.8	-1	100	Vert.	40.0	28.2
212.205	20.5	QP	16.7	-20.6	16.6	360	100	Vert.	43.5	26.9
214.086	20.4	QP	16.8	-20.6	16.6	360	100	Hori.	43.5	26.9
347.794	20.7	QP	16.0	-20.0	16.7	-1	100	Vert.	46.0	29.3
352.467	24.0	QP	16.2	-20.1	20.1	-1	100	Hori.	46.0	25.9
366.506	20.8	QP	16.7	-19.9	17.6	360	100	Vert.	46.0	28.4
366.533	21.5	QP	16.7	-19.9	18.3	360	100	Hori.	46.0	27.7
380.500	21.4	QP	17.2	-20.0	18.6	-1	100	Hori.	46.0	27.4
380.498	20.9	QP	17.2	-20.0	18.1	-1	100	Vert.	46.0	27.9
968.426	29.9	QP	23.0	-17.2	35.7	180	112	Vert.	54.0	18.3
968.786	26.4	QP	23.0	-17.2	32.2	280	100	Hori.	54.0	21.8

CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN

Radiated Spurious Emission (Tx Mid)

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

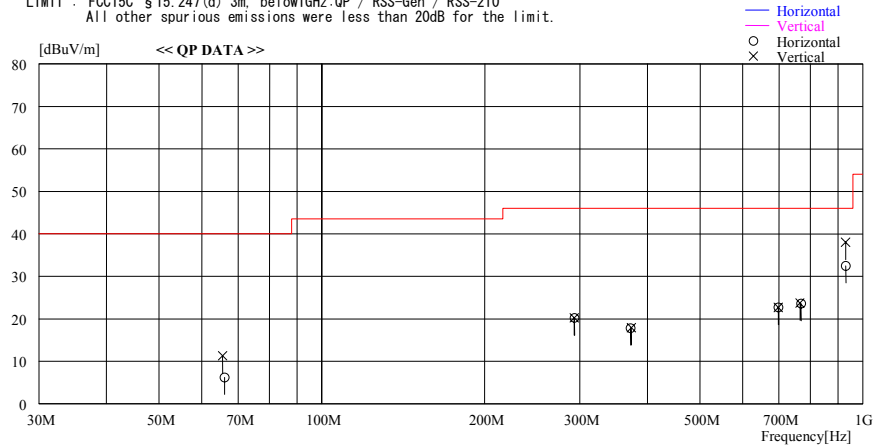
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/26 01:30:38

Applicant : Panasonic Communications Co., Ltd. Report No. : 26CE0011-HO
Kind of EUT : Cordless Telephone (Handset) Power : DC 3.6V
Model No. : KX-TGA560 Temp./Humi. : 25deg.C / 56%
Serial No. : 1 Operator : Yutaka Yoshida

Mode / Remarks : Tx5798.05084MHz /EUT-Axis:Hor Y-axis, Ver Z-axis (Max-axis)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss&Gain [dB]						
65.536	26.6	QP	7.3	-22.6	11.3	360	100	Vert.	40.0	28.7
66.046	21.6	QP	7.2	-22.6	6.2	360	100	Hori.	40.0	33.8
292.837	20.4	QP	19.7	-19.9	20.2	-1	102	Vert.	46.0	25.8
293.208	20.4	QP	19.7	-19.9	20.2	-1	100	Hori.	46.0	25.8
372.306	20.8	QP	16.9	-19.9	17.8	183	100	Hori.	46.0	28.2
373.511	20.9	QP	16.9	-19.9	17.9	360	100	Vert.	46.0	28.1
697.877	20.9	QP	20.6	-18.8	22.7	-1	100	Vert.	46.0	23.3
698.971	20.9	QP	20.6	-18.8	22.7	-1	100	Hori.	46.0	23.3
765.480	20.8	QP	21.1	-18.2	23.7	360	100	Vert.	46.0	22.3
769.012	20.7	QP	21.2	-18.3	23.6	360	100	Hori.	46.0	22.4
930.434	28.0	QP	21.8	-17.3	32.5	121	100	Hori.	46.0	13.5
930.071	33.5	QP	21.8	-17.3	38.0	15	116	Vert.	46.0	8.0

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN

Radiated Spurious Emission (Tx High)

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

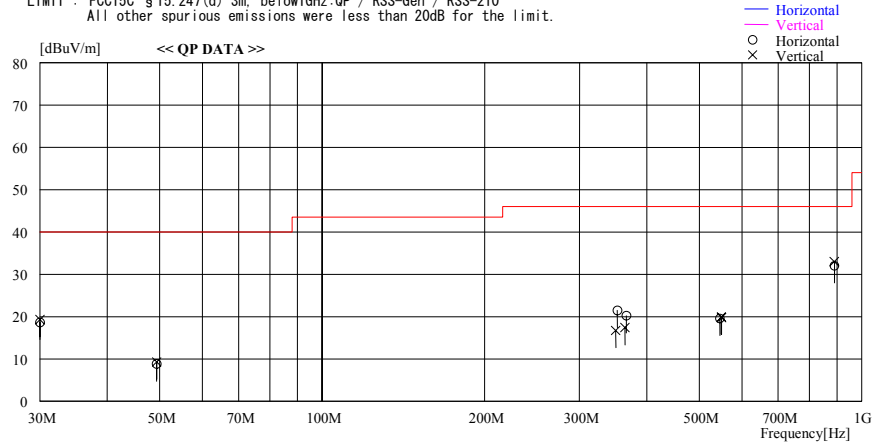
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2005/10/26 02:26:13

Applicant : Panasonic Communications Co., Ltd. Report No. : 26CE0011-HO
Kind of EUT : Cordless Telephone (Handset) Power : DC 3.6V
Model No. : KX-TGA560 Temp./Humi. : 25deg.C / 56%
Serial No. : 1 Operator : Yutaka Yoshida

Mode / Remarks : Tx5838.18697MHz /EUT-Axis:Hor Y-axis, Ver Z-axis (Max-axis)

LIMIT : FCC15C § 15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	
			Factor [dB/m]	Loss& Gain [dB]					[dBuV/m]	[dB]
30.000	23.1	QP	18.3	-22.8	18.6	0	100	Hori.	40.0	21.4
30.004	23.8	QP	18.3	-22.8	19.3	7	100	Vert.	40.0	20.7
49.350	21.0	QP	10.3	-22.5	8.8	360	100	Hori.	40.0	31.2
49.358	21.5	QP	10.3	-22.5	9.3	0	100	Vert.	40.0	30.7
350.205	20.7	QP	16.1	-20.1	16.7	359	100	Vert.	46.0	29.3
352.473	25.4	QP	16.2	-20.1	21.5	140	100	Hori.	46.0	24.5
364.207	20.7	QP	16.6	-19.9	17.4	4	100	Vert.	46.0	28.6
366.499	23.4	QP	16.7	-19.9	20.2	130	100	Hori.	46.0	25.8
546.139	20.9	QP	18.5	-19.8	19.6	-1	100	Hori.	46.0	26.4
549.621	21.2	QP	18.5	-19.8	19.9	360	100	Vert.	46.0	26.1
549.698	21.1	QP	18.5	-19.8	19.8	360	100	Vert.	46.0	26.2
890.309	28.9	QP	20.9	-17.8	32.0	216	100	Hori.	46.0	14.0
890.375	29.9	QP	20.9	-17.8	33.0	24	128	Vert.	46.0	13.0

CHART: WITH FACTOR ANT TYPE: -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN

Radiated Spurious Emission (Tx Low)

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

Company : Panasonic Communications Co., Ltd.	REPORT NO : 26CE0011-HO
Equipment : Cordless Telephone (Handset)	REGULATION : FCC Part15 Subpart C 15.247(d)
Model : KX-TGA560	TEST DISTANCE : 3m/1m/0.5m
Sample No. : 1	DATE : 10/22/2005, 10/23/2005
Power : DC3.6V	TEMPERATURE : 25deg.C., 23deg.C
Mode : Tx 5759.70240MHz	HUMIDITY : 56%, 40%
Remarks : Hor : Y-axis / Ver : Z-axis	ENGINEER : Mitsuru Fujimura, Kenichi Adachi

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1789.2	62.5	63.3	28.4	40.7	2.9	0.0	53.1	53.9	74.0	20.9	20.2
2	2395.6	71.2	66.4	30.9	41.2	3.1	0.0	64.0	59.2	74.0	10.0	14.8
3	4669.1	63.9	64.3	34.2	42.4	4.2	0.0	59.9	60.3	74.0	14.1	13.7
4	4791.5	61.9	61.1	34.9	42.5	4.3	0.0	58.6	57.8	74.0	15.4	16.2
5	5301.7	69.9	69.4	35.9	42.6	4.4	0.0	67.6	67.1	74.0	6.4	6.9
6	5725.0	50.8	56.7	36.1	42.7	4.6	0.0	48.8	54.7	74.0	25.2	19.3
7	6217.5	63.1	64.1	36.6	42.5	4.8	0.0	62.0	63.0	74.0	12.0	11.0
8	11519.7	56.0	58.5	38.4	40.3	7.0	0.2	61.3	63.8	74.0	12.7	10.2
9*	17278.4	57.0	52.5	44.4	42.0	8.5	4.7	72.6	68.1	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	23038.7	63.5	60.7	40.8	39.5	9.3	0.0	64.6	61.8	74.0	9.4	12.2
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
11	28799.4	57.8	57.5	41.8	24.3	6.0	0.0	65.7	65.4	74.0	8.3	8.6
12	34556.6	60.3	60.7	41.7	24.6	6.6	0.0	68.4	68.8	74.0	5.6	5.2

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1789.2	42.5	42.8	28.4	40.7	2.9	0.0	33.1	33.4	54.0	20.9	20.7
2	2395.6	50.5	46.6	30.9	41.2	3.1	0.0	43.3	39.4	54.0	10.7	14.6
3	4669.1	42.8	43.0	34.2	42.4	4.2	0.0	38.8	39.0	54.0	15.2	15.1
4	4791.5	42.7	42.5	34.9	42.5	4.3	0.0	39.4	39.2	54.0	14.6	14.8
5	5301.7	44.4	44.4	35.9	42.6	4.4	0.0	42.1	42.1	54.0	11.9	11.9
6	5725.0	37.6	38.3	36.1	42.7	4.6	0.0	35.6	36.3	54.0	18.4	17.7
7	6217.5	41.7	42.0	36.6	42.5	4.8	0.0	40.6	40.9	54.0	13.4	13.1
8	11519.7	38.6	39.5	38.4	40.3	7.0	0.2	43.9	44.8	54.0	10.1	9.2
9*	17278.4	39.2	37.4	44.4	42.0	8.5	4.7	54.8	53.0	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	23038.7	37.0	36.3	40.8	39.5	9.3	0.0	38.1	37.4	54.0	15.9	16.6
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
11	28799.4	40.7	40.4	41.8	24.3	6.0	0.0	48.6	48.3	54.0	5.4	5.7
12	34556.6	42.5	42.7	41.7	24.6	6.6	0.0	50.6	50.8	54.0	3.4	3.2

* Reference data

20dBc(Fundamental 5759.7MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter or ATT [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5759.7	106.7	108.5	36.2	42.7	4.6	20.2	125.0	126.8	-	-	-
9	17278.4	52.9	47.4	44.4	42.0	8.5	4.7	68.5	63.0	Funda-20dB	36.5	43.8

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.6dB

*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.

Radiated Spurious Emission (Tx Mid)

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 and No.2 Semi Anechoic Chamber

Company : Panasonic Communications Co., Ltd.	REPORT NO : 26CE0011-HO	
Equipment : Cordless Telephone (Handset)	REGULATION : Fcc Part15 Subpart C 15.247(d)	
Model : KX-TGA560	TEST DISTANCE : 3m/1m/0.5m	
Sample No. : 1	DATE : 10/22/2005, 10/23/2005, 10/25/2005	
Power : DC3.6V	TEMPERATURE : 25deg.C., 23deg.C, 23deg.C	
Mode : Tx 5798.05084MHz	HUMIDITY : 56%, 40%, 40%	
Remarks : Hor : Y-axis / Ver : Z-axis	ENGINEER : Mitsuru Fujimura, Kenichi Adachi, Yutaka Yoshida	

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1510.7	67.2	67.7	23.7	41.0	2.8	0.0	52.7	53.2	74.0	21.3	20.8
2	1827.5	60.9	60.2	29.0	40.6	3.0	0.0	52.3	51.6	74.0	21.7	22.4
3	2433.8	70.3	65.9	30.9	41.2	3.2	0.0	63.2	58.8	74.0	10.8	15.2
4	4726.0	63.3	63.3	34.5	42.5	4.3	0.0	59.6	59.6	74.0	14.5	14.4
5	4868.2	64.9	64.1	35.3	42.5	4.3	0.0	62.0	61.2	74.0	12.0	12.8
6	5224.8	60.2	60.2	35.9	42.6	4.4	0.0	57.9	57.9	74.0	16.1	16.1
7	11595.6	57.5	57.3	38.9	40.3	7.0	0.2	63.3	63.1	74.0	10.7	10.9
8*	17394.9	57.1	53.4	44.4	42.0	8.6	5.5	73.6	69.9	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	23191.9	64.7	60.6	40.8	39.4	9.3	0.0	65.9	61.8	74.0	8.1	12.2
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	28990.3	43.6	41.5	41.3	24.4	15.4	0.0	60.3	58.2	74.0	13.7	15.8
11	34788.3	43.3	41.8	42.1	24.5	17.2	0.0	62.5	61.0	74.0	11.5	13.0

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1510.7	43.1	43.3	23.7	41.0	2.8	0.0	28.6	28.8	54.0	25.4	25.2
2	1827.5	41.8	41.6	29.0	40.6	3.0	0.0	33.2	33.0	54.0	20.8	21.0
3	2433.8	49.3	46.4	30.9	41.2	3.2	0.0	42.2	39.3	54.0	11.8	14.7
4	4726.0	42.7	42.8	34.5	42.5	4.3	0.0	39.0	39.1	54.0	15.0	14.9
5	4868.2	43.2	43.1	35.3	42.5	4.3	0.0	40.3	40.2	54.0	13.7	13.8
6	5224.8	41.9	41.7	35.9	42.6	4.4	0.0	39.6	39.4	54.0	14.4	14.6
7	11595.6	39.4	39.4	38.9	40.3	7.0	0.2	45.2	45.2	54.0	8.8	8.8
8*	17394.9	39.0	37.8	44.4	42.0	8.6	5.5	55.5	54.3	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	23191.9	36.8	35.7	40.8	39.4	9.3	0.0	38.0	36.9	54.0	16.0	17.1
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	28990.3	23.9	23.5	41.3	24.4	15.4	0.0	40.6	40.2	54.0	13.4	13.8
11	34788.3	28.9	28.4	42.1	24.5	17.2	0.0	48.1	47.6	54.0	5.9	6.4

* Reference data

20dBc(Fundamental 5798.1MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter or ATT [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5797.8	106.7	107.4	36.2	42.7	4.6	20.2	125.0	125.7	-	-	-
8	17278.4	53.1	48.9	44.4	42.0	8.6	5.5	69.6	65.4	Funda-20dB	35.4	40.3

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.6dB

*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.

Radiated Spurious Emission (Tx High)

UL Apex Co., Ltd.

Head Office EMC Lab. No.1 and No.2 Semi Anechoic Chamber

Company : Panasonic Communications Co., Ltd.	REPORT NO : 26CE0011-HO
Equipment : Cordless Telephone (Handset)	REGULATION : Fec Part15 Subpart C 15.247(d)
Model : KX-TGA560	TEST DISTANCE : 3m/1m/0.5m
Sample No. : 1	DATE : 10/22/2005, 10/23/2005, 10/25/2005
Power : DC3.6V	TEMPERATURE : 25deg.C., 23deg.C., 23deg.C
Mode : Tx 5838.18697MHz	HUMIDITY : 56%, 40%, 40%
Remarks : Hor : Y-axis / Ver : Z-axis	ENGINEER : Mitsuru Fujimura, Kenichi Adachi, Yutaka Yoshida

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV]	VER [dBuV]					HOR [dB]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1867.7	59.9	60.0	29.6	40.6	3.0	0.0	51.9	52.0	74.0	22.1	22.0
2	2474.0	69.5	67.1	30.8	41.3	3.1	0.0	62.1	59.7	74.0	12.0	14.3
3	4786.9	62.6	63.0	34.8	42.5	4.3	0.0	59.2	59.6	74.0	14.9	14.4
4	4948.5	65.0	63.4	35.7	42.5	4.3	0.0	62.5	60.9	74.0	11.5	13.1
5	5852.3	61.2	59.9	36.3	42.7	4.6	0.0	59.4	58.1	74.0	14.6	15.9
6	6728.2	54.4	54.1	37.0	42.0	5.0	0.0	54.4	54.1	74.0	19.6	19.9
7	11676.7	57.6	58.6	39.4	40.3	7.0	0.3	64.0	65.0	74.0	10.0	9.0
8*	17513.6	57.7	53.6	44.3	42.1	8.7	6.2	74.8	70.7	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	23351.9	62.0	60.7	40.8	39.3	9.3	0.0	63.3	62.0	74.0	10.7	12.0
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	29190.9	40.6	44.7	41.3	24.4	15.5	0.0	57.4	61.5	74.0	16.6	12.5
11	35029.1	49.2	47.6	42.1	24.4	17.2	0.0	68.5	66.9	74.0	5.5	7.1

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV]	VER [dBuV]					HOR [dB]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1867.7	41.3	41.3	29.6	40.6	3.0	0.0	33.3	33.3	54.0	20.8	20.8
2	2474.0	48.5	47.2	30.8	41.3	3.1	0.0	41.1	39.8	54.0	12.9	14.2
3	4786.9	42.5	42.6	34.8	42.5	4.3	0.0	39.1	39.2	54.0	15.0	14.9
4	4948.5	43.3	42.8	35.7	42.5	4.3	0.0	40.8	40.3	54.0	13.2	13.7
5	5852.3	41.6	41.2	36.3	42.7	4.6	0.0	39.8	39.4	54.0	14.2	14.6
6	6728.2	39.0	38.8	37.0	42.0	5.0	0.0	39.0	38.8	54.0	15.0	15.2
7	11676.7	39.4	40.0	39.4	40.3	7.0	0.3	45.8	46.4	54.0	8.2	7.6
8*	17513.6	38.2	36.9	44.3	42.1	8.7	6.2	55.3	54.0	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	23351.9	35.1	35.4	40.8	39.3	9.3	0.0	36.4	36.7	54.0	17.6	17.3
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	29190.9	22.9	23.4	41.3	24.4	15.5	0.0	39.7	40.2	54.0	14.3	13.8
11	35029.1	30.7	30.1	42.1	24.4	17.2	0.0	50.0	49.4	54.0	4.0	4.6

* Reference data

20dBc(Fundamental 5838.2MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter or AT [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR [dBuV]	VER [dBuV]					HOR [dB]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5838.0	106.7	107.4	36.3	42.7	4.6	20.2	125.1	125.8	-	-	-
8	17513.6	54.8	50.2	44.3	42.1	8.7	6.2	71.9	67.3	Funda-20dB	33.2	38.6

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.6dB

*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.

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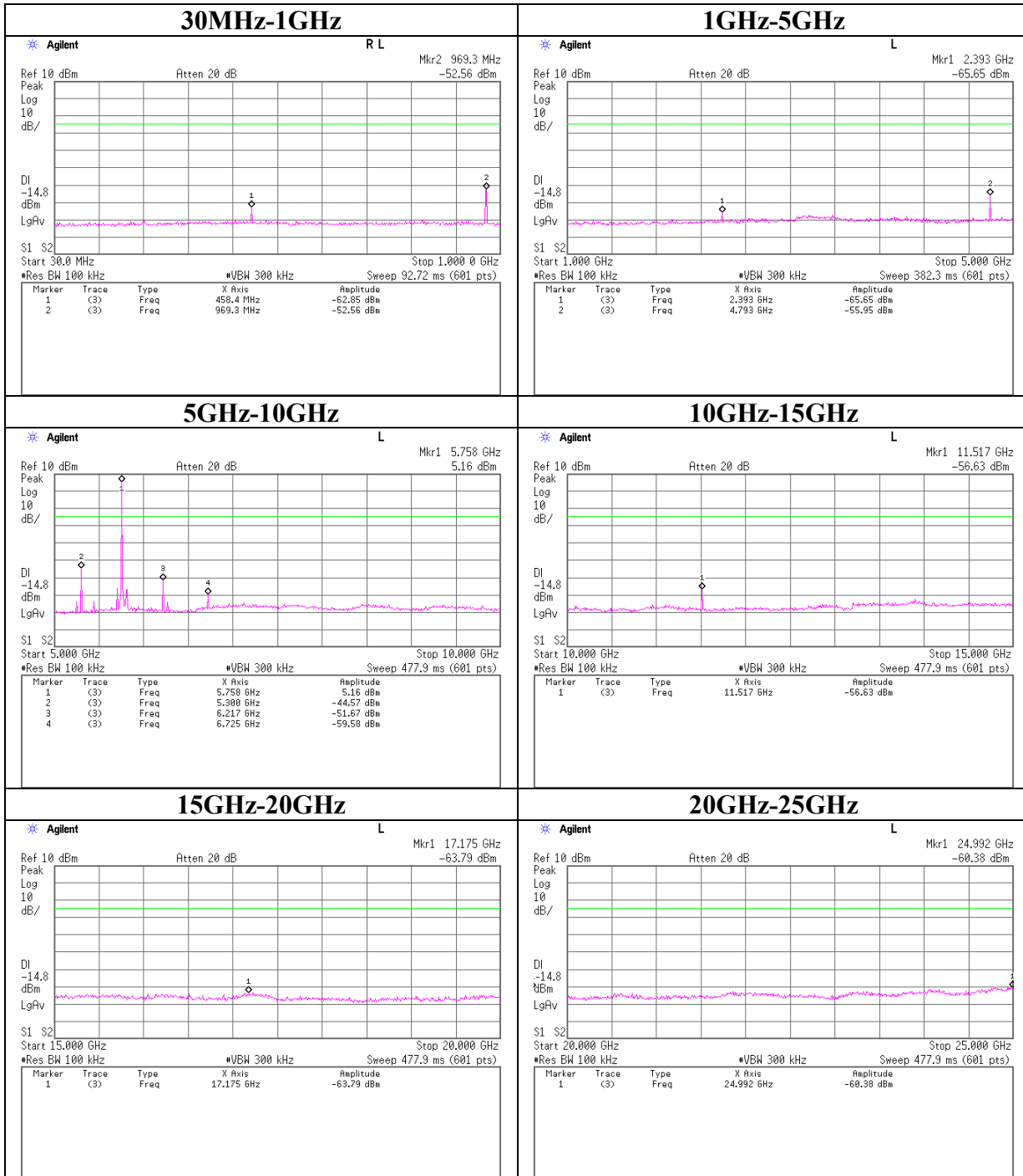
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

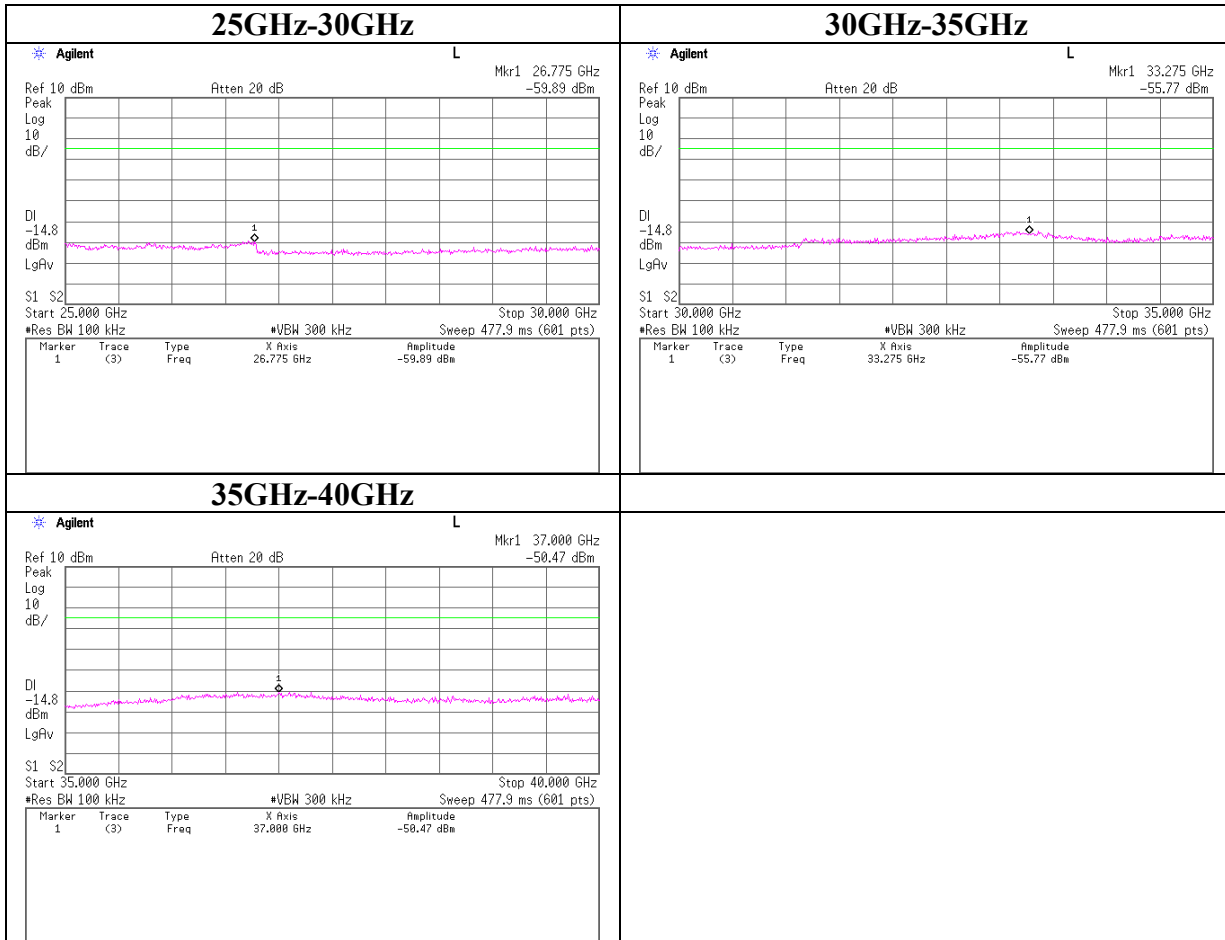
MF060b(01.06.05)

Conducted Spurious Emission

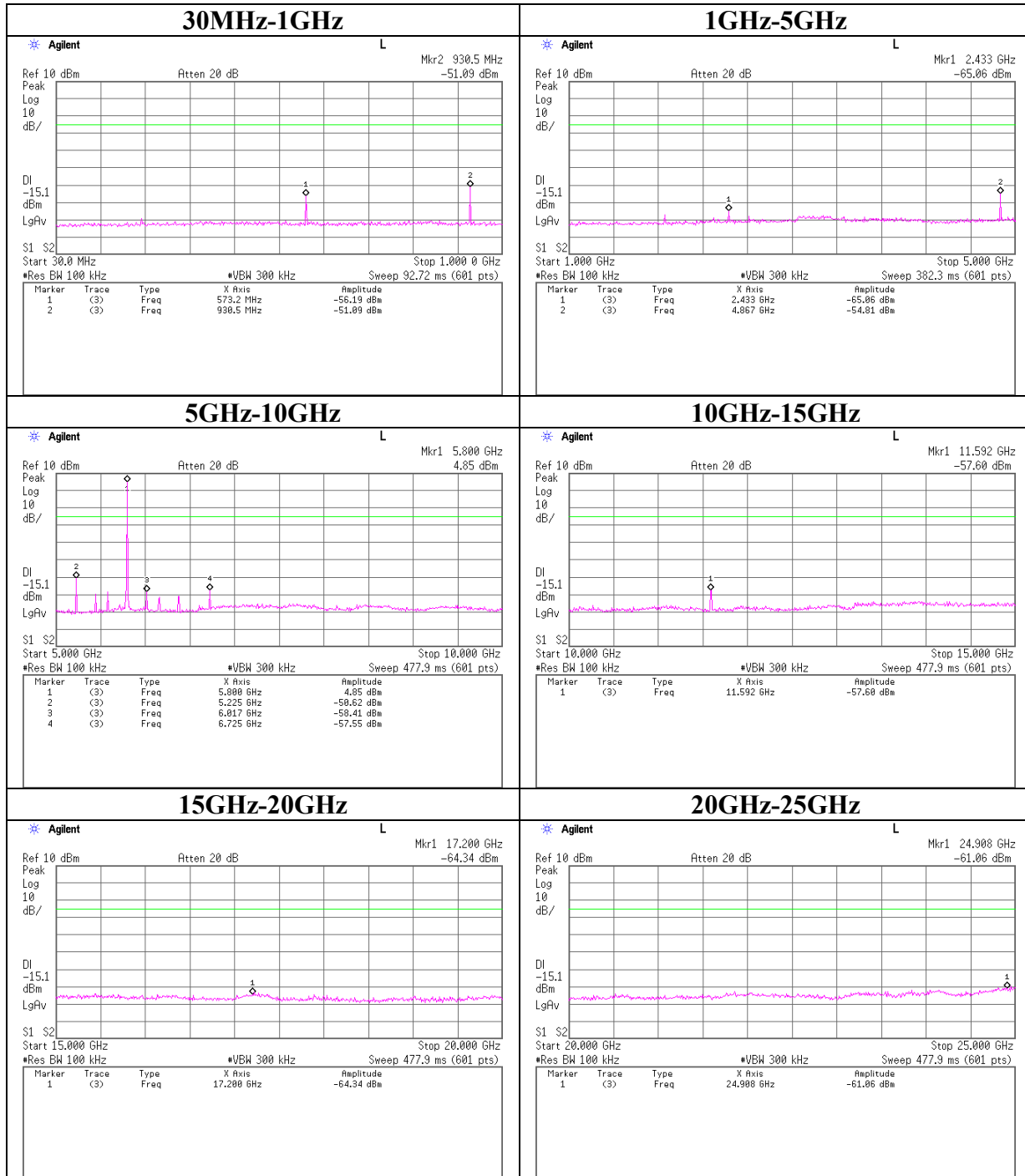
Ch:Low



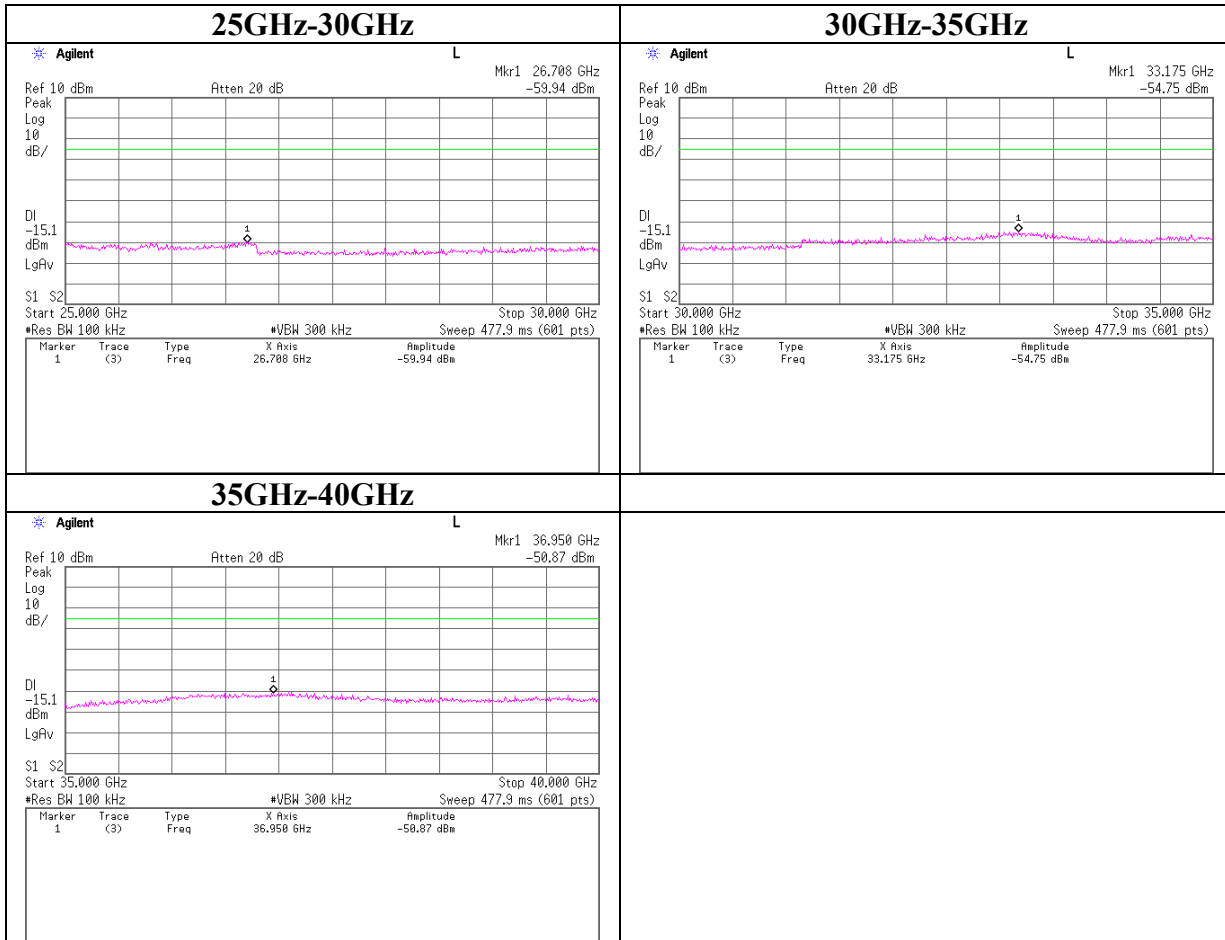
Conducted Spurious Emission
Ch:Low



Conducted Spurious Emission
Ch:Mid

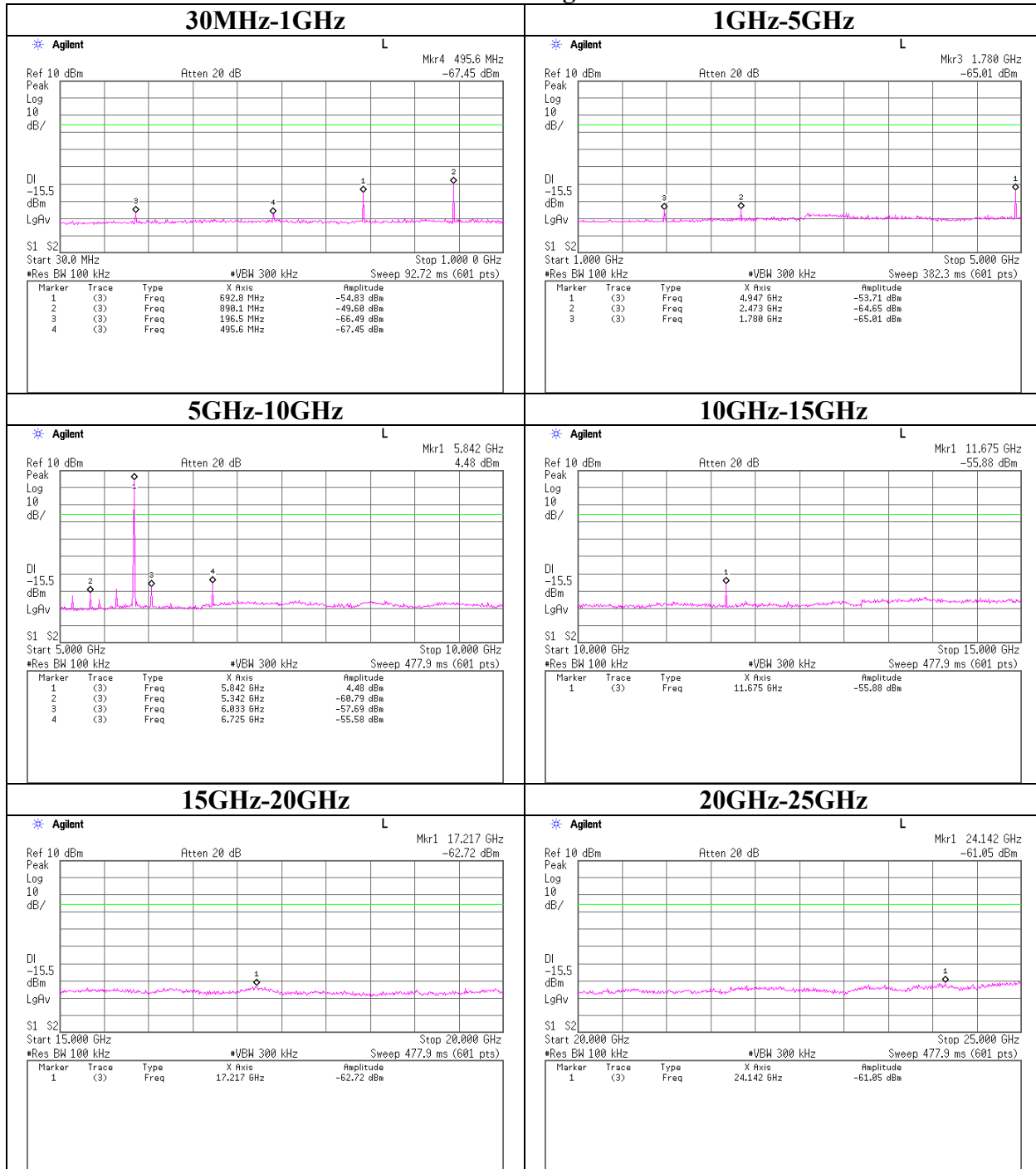


Conducted Spurious Emission
Ch:Mid

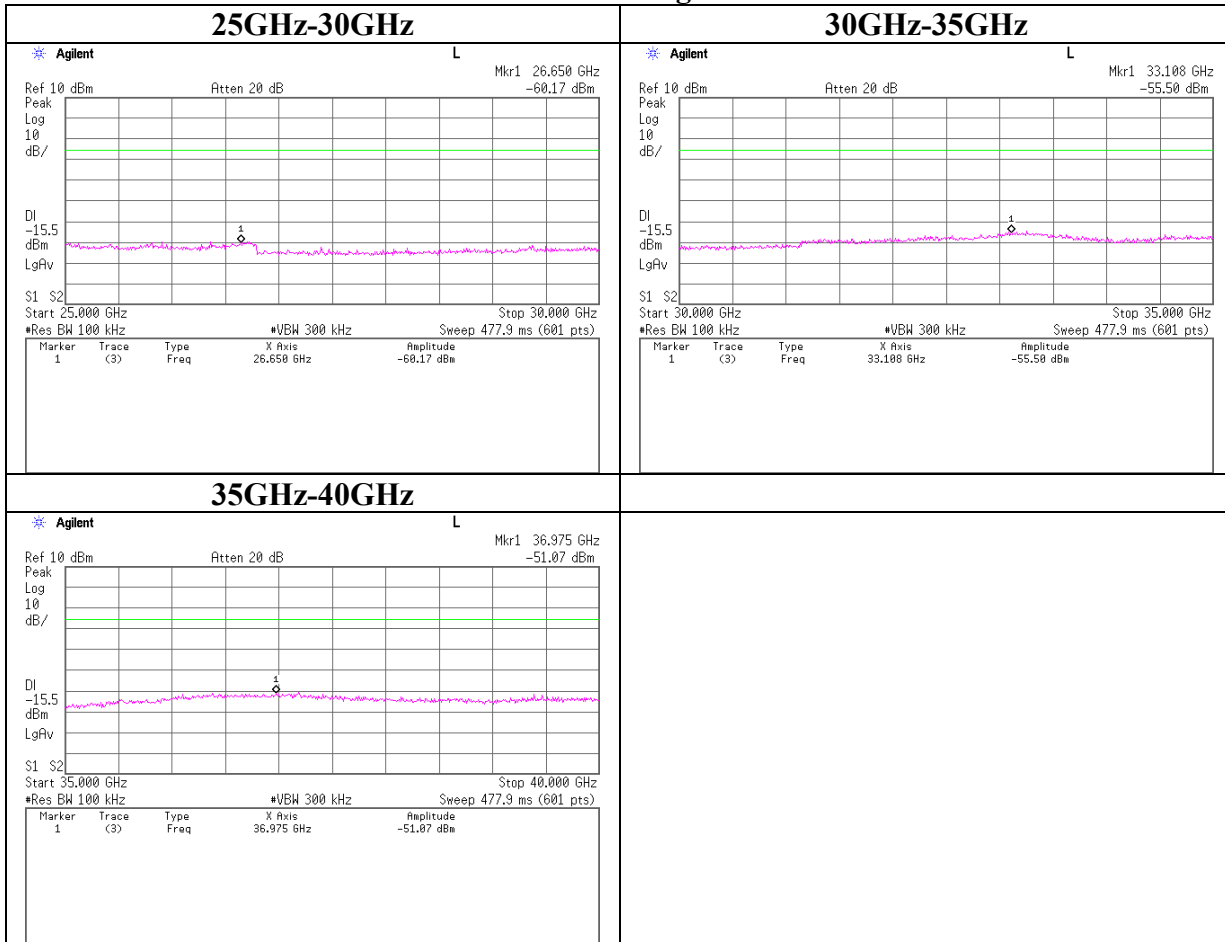


Conducted Spurious Emission

Ch:High



Conducted Spurious Emission
Ch:High



Conducted Spurious Emission Band Edge compliance

