



RADIO TEST REPORT

Test Report No. : 32EE0075-HO-D-R1

Applicant : NEC Corporation of America
Type of Equipment : Digital Portable Cellular Telephone
Model No. : KMP7N4AC1-3A
Test regulation : FCC Part 15 Subpart C: 2011
FCC ID : A98-QOE9653
Test Result : Complied

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This report is a revised version of 32EE0075-HO-D. 32EE0075-HO-D is replaced with this report.

Date of test: December 23 and 27, 2011

Representative test engineer:

Keisuke Kawamura
Engineer of WiSE Japan,
UL Verification Service

Approved by:

Takahiro Hatakeda
Leader of WiSE Japan,
UL Verification Service



NVLAP LAB CODE: 200572-0

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*As for the range of Accreditation in NVLAP, you may refer to the WEB address,
<http://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap>

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13-EM-F0429

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SECTION 1: Customer information

Company Name : NEC Corporation of America
Address : Radio Communications Systems Division
6535N. State Highway 161, Irving, TX 75039-2402 USA
Telephone Number : +1 214 262 4241
Facsimile Number : +1 214 262 4225
Contact Person : Sanjay Wadhwa

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

2.1 Identification of E.U.T.

Type of Equipment : Digital Portable Cellular Telephone
Model No. : KMP7N4AC1-3A
Serial No. : Refer to Section 4, Clause 4.2
Rating : DC 3.8V
Receipt Date of Sample : December 15, 2011
Country of Mass-production : Japan
Condition of EUT : Production prototype
Modification of EUT : No Modification by the test lab

2.2 Product description

Model No: KMP7N4AC1-3A, (referred to as the EUT in this report), is the Digital Portable Cellular Telephone.

Radio Specification [1/2]

Bluetooth (Ver.2.1 + EDR)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Other Clock Frequency	19.2MHz
Type of Modulation	FHSS
Bandwidth & Channel spacing	1MHz & 1MHz
Antenna Connector Type	Integrated antenna

Low Energy (Ver.4.0)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Other Clock Frequency	19.2MHz
Bandwidth & Channel spacing	1MHz & 2MHz
Antenna Connector Type	Integrated antenna

WLAN (IEEE802.11b/g/n (SISO/HT20))

Equipment Type	Transceiver
Frequency of Operation	2412-2462MHz
Other Clock Frequency	19.2MHz
Type of Modulation	DSSS, OFDM
Antenna Connector Type	Integrated antenna

GSM

Equipment Type	Transceiver
Frequency of Operation	[Up Link] GSM850: 824 – 849MHz PCS: 1850 – 1910MHz [Down Link] GSM850: 869 – 894MHz PCS: 1930 – 1990MHz
Other Clock Frequency	19.2MHz
Type of Modulation	GMSK
Channel spacing	200kHz
Antenna Connector Type	Integrated antenna

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Radio Specification [2/2]

WCDMA

Equipment Type	Transceiver
Frequency of Operation	[Up Link] Band V: 824 – 849MHz [Down Link] Band V: 869 – 894MHz
Other Clock Frequency	19.2MHz
Type of Modulation	HPSK
Channel spacing	5MHz
Antenna Connector Type	Integrated antenna

GPS

Equipment Type	Receiver
Receiver Type	Direct Downconversion
Frequency of Operation	1575.42MHz
Other Clock Frequency	19.2MHz
Antenna Connector Type	Integrated antenna

RFID

Equipment Type	Transceiver
Frequency of Operation	13.56MHz
Type of Modulation	ASK
Antenna Connector Type	Integrated antenna

*This test report applies for RFID.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart B: 2011, final revised on November 21, 2011 and effective December 21, 2011

Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.225 : Operation within the band 13.110-14.010MHz

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements <IC>RSS-Gen 7.2.2	Section 15.207 <IC>RSS-Gen 7.2.2	N/A	N/A *1)	-
Electric Field Strength of Fundamental Emission	ANSI C63.4:2003 13. Measurement of intentional radiators <IC> RSS-Gen 4.8, 4.11	Section 15.225(a) <IC>RSS-210 A2.6	78.6dB, 13.56000MHz, QP, 0deg.	Complied	Radiated
Spectrum Mask	ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.9, 4.11	Section 15.225(b)(c) <IC> RSS-210 A2.6	47.0dB, 13.11000MHz, QP, 0deg.	Complied	Radiated
20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators <IC> -	Section15.215(c) <IC> -	See data	Complied	Radiated
Electric Field Strength of Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.9, 4.11	Section15.209, Section 15.225 (d) <IC>RSS-210 A2.6	0.9dB 894.985MHz, Horizontal, QP	Complied	Radiated
Frequency Tolerance	ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.7	Section15.225(e) <IC> RSS-210 A2.6	See data	Complied	Radiated

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422

*1) The test is not applicable since the EUT is designed to stop transmission when the AC adaptor is connected.

FCC 15.31 (e)

This EUT provides stable voltage (DC3.2V) constantly to RF Part 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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3.3 Addition to standard

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS-Gen 4.6.1	RSS-Gen 4.6.1	Radiated	N/A	N/A	N/A

Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

EMI

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

Test room (semi-anechoic chamber)	Radiated emission						
	(3m*)(+dB)				(1m*)(+dB)		(0.5m*)(+dB)
	9kHz -30MHz	30MHz -300MHz	300MHz -1GHz	1GHz -10GHz	10GHz -18GHz	18GHz -26.5GHz	26.5GHz -40GHz
No.1	4.2dB	5.0dB	5.1dB	4.7dB	5.7dB	4.4dB	4.3dB
No.2	4.1dB	5.2dB	5.1dB	4.8dB	5.6dB	4.3dB	4.2dB
No.3	4.5dB	5.0dB	5.2dB	4.8dB	5.6dB	4.5dB	4.2dB
No.4	4.7dB	5.2dB	5.2dB	4.8dB	5.6dB	5.1dB	4.2dB

*3m/1m/0.5m = Measurement distance

Frequency counter (±)	
Normal condition	Extreme condition
7×10^{-6}	9×10^{-6}

Radiated emission test (3m)

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

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3.5 Test Location

UL Japan, Inc. 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	2973C-1	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	2973C-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	2973C-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.3 Preparation room
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	2973C-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.4 Preparation room
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi-anechoic chamber	-	-	6.0 x 6.0 x 3.9m	6.0 x 6.0m	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	4.75 x 5.4 m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 4.15 m	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-
No.9 measurement room	-	-	8.0 x 4.5 x 2.8m	2.0 x 2.0m	-
No.10 measurement room	-	-	2.6 x 2.8 x 2.5m	2.4 x 2.4m	-
No.11 measurement room	-	-	3.1 x 3.4 x 3.0m	2.4 x 3.4m	-

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

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

Refer to APPENDIX.

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

4.1 Operating Modes

The mode is used :

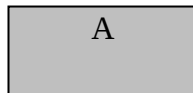
Mode	Remarks*
Transmitting (13.56MHz)	Continuous transmitting 13.56MHz (Modulated)

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

Frequency Tolerance:

Temperature : -30deg.C to +50deg.C Step 10deg.C
Voltage : Normal Voltage DC 3.8V (New Battery)

4.2 Configuration and peripherals



* Setup 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	Remark
A	Digital Portable Cellular Telephone	KMP7N4AC1-3A	04401200840201	NEC Corporation of America	EUT

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SECTION 5: Radiated emission (Fundamental , Spurious Emission and Spectrum Mask)

Test Procedure

EUT was placed on a urethane platform of nominal size, 0.5m by 1.0m, raised 0.8m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane. The height of the measuring antenna varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength. The measurements were performed for both vertical (angle of loop antenna: 0deg., 45deg., 90deg., and 135 deg.) and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer. The measurements were made with the following detector function of the test receiver and 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.

Test Antennas are used as below;

Frequency	Below 30MHz	30MHz to 300MHz	300MHz to 1GHz
Antenna Type	Loop	Biconical	Logperiodic

Frequency	From 9kHz to 90kHz and From 110kHz to 150kHz	From 90kHz to 110kHz	From 150kHz to 490kHz	From 490kHz to 30MHz	From 30MHz to 1GHz
Instrument used	Test Receiver				
Detector	PK/AV	QP	PK/AV	QP	QP
IF Bandwidth	200Hz	200Hz	9kHz	9kHz	120kHz

- 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.

* FCC Part 15 Section 15.31 (f)(2) / IC RSS-Gen 4.11 (9kHz-30MHz)

$$9\text{kHz} - 490\text{kHz} [\text{Limit at } 3\text{m}] = [\text{Limit at } 300\text{m}] - 40\log\left(\frac{3}{300}\right)$$

$$490\text{kHz} - 30\text{MHz} [\text{Limit at } 3\text{m}] = [\text{Limit at } 30\text{m}] - 40\log\left(\frac{3}{30}\right)$$

Measurement range : 0.09M-1GHz
Test data : APPENDIX
Test result : Pass

SECTION 6: Other test

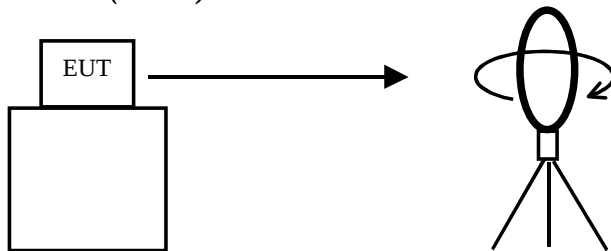
Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20dB Bandwidth	100kHz	3kHz	10kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99% Occupied Bandwidth	Enough width to display 20dB Bandwidth	1 to 3% of Span	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer
Frequency Tolerance	-	-	-	-	-	-	Frequency counter

*1) The measurement was performed with Peak detector, Max Hold since the duty cycle was not 100%.

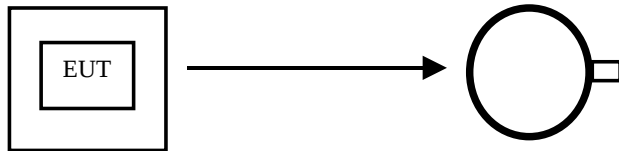
Test data : APPENDIX
Test result : Pass

Figure 1: Direction of the Loop Antenna

Side View (Vertical)

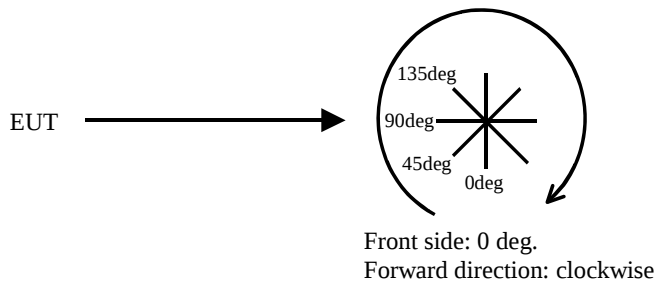


Top View (Horizontal)



Antenna was not rotated.

Top View (Vertical)



APPENDIX 1: Data of EMI test

Fundamental emission and Spectrum Mask

DATA OF RADIATED EMISSION TEST

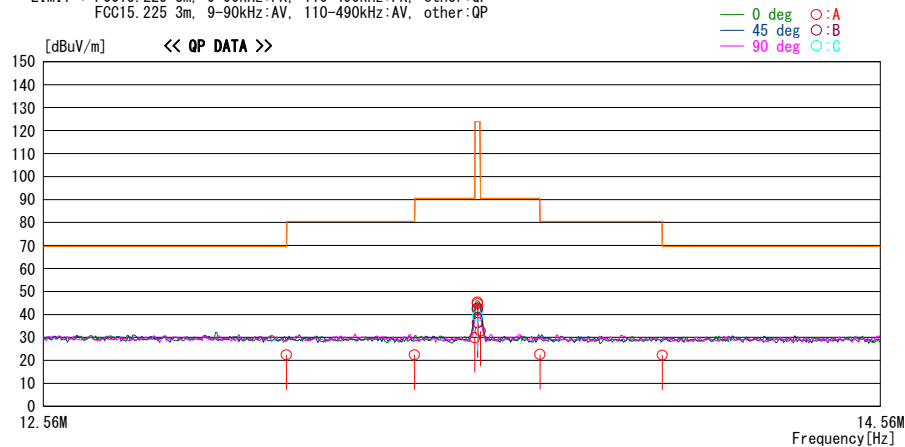
UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber
Date : 2011/12/27

Report No. : 32EE0075-HO

Temp. / Humi. : 20deg. C / 29% RH
Engineer : Keisuke Kawamura

Mode / Remarks : Transmitting (13.56MHz) Worst-Axis: Y

LIMIT : FCC15.225 3m, 9-90kHz:PK, 110-490kHz:PK, other:QP
FCC15.225 3m, 9-90kHz:AV, 110-490kHz:AV, other:QP



Freq.	Reading	DET	Ant. Fac	Loss	Gain	Result	Limit	Margin	Antenna	Table	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[deg]	[deg]	
13.56000	52.0	QP	18.9	6.6	32.2	45.3	123.9	78.6	0	A	184 Worst
13.56000	49.4	QP	18.9	6.6	32.2	42.7	123.9	81.2	45	B	163
13.56000	46.0	QP	18.9	6.6	32.2	39.3	123.9	84.6	90	C	95
13.56000	48.9	QP	18.9	6.6	32.2	42.2	123.9	81.7	135	A	210
13.56000	51.4	QP	18.9	6.6	32.2	44.7	123.9	79.2	180	A	177
13.56000	43.1	QP	18.9	6.6	32.2	36.4	123.9	87.5	0	B	185 Hori
13.55300	36.6	QP	18.9	6.5	32.2	29.8	90.4	60.6	0	A	184
13.56700	39.4	QP	18.9	6.6	32.2	32.7	90.4	57.7	0	A	184
13.11000	29.1	QP	19.1	6.5	32.2	22.5	69.5	47.0	0	A	184
13.41000	29.2	QP	19.0	6.5	32.2	22.5	80.5	58.0	0	A	184
13.71000	29.3	QP	18.9	6.6	32.2	22.6	80.5	57.9	0	A	184
14.01000	29.1	QP	18.8	6.6	32.2	22.3	69.5	47.2	0	A	184

CHART: WITH FACTOR, ANT TYPE: LOOP. Except for the data below : adequate margin data below the limits.
CALCULATION : RESULT = READING + ANT FACTOR + LOSS (CABLE + ATTEN.) - GAIN (AMP.)

Spurious emission

DATA OF RADIATED EMISSION TEST

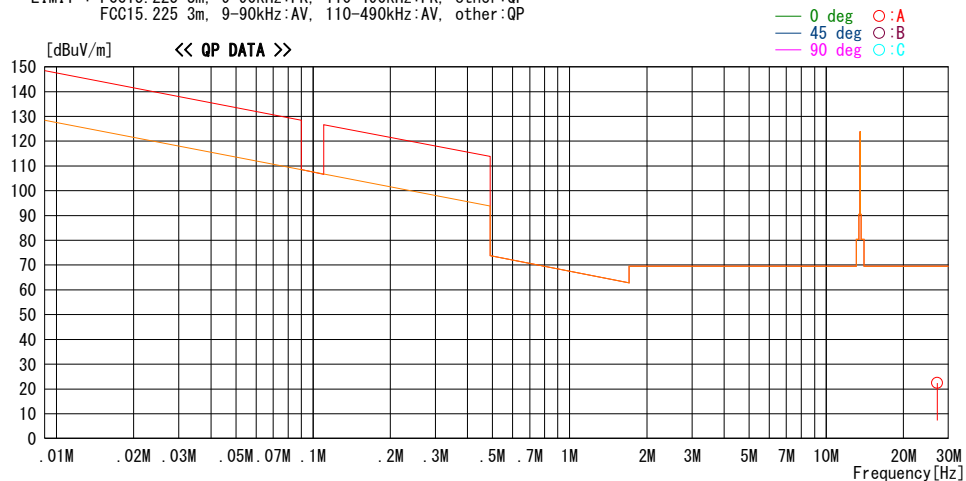
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2011/12/27

Report No. : 32EE0075-H0

Temp. / Humi. : 20deg. C / 29% RH
Engineer : Keisuke Kawamura

Mode / Remarks Transmitting (13.56MHz) Worst-Axis: Y

LIMIT : FCC15.225 3m, 9-90kHz:PK, 110-490kHz:PK, other:QP
FCC15.225 3m, 9-90kHz:AV, 110-490kHz:AV, other:QP



Freq.	Reading	DET	Ant. Fac	Loss	Gain	Result	Limit	Margin	Antenna	Table	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[deg]	[deg]	
27.12000	28.8	QP	18.9	6.9	32.2	22.4	69.5	47.1	0	A	359

CHART: WITH FACTOR, ANT TYPE: LOOP Except for the data below : adequate margin data below the limits.
CALCULATION : RESULT = READING + ANT FACTOR + LOSS (CABLE + ATTEN.) - GAIN (AMP.)

Spurious emission

DATA OF RADIATED EMISSION TEST

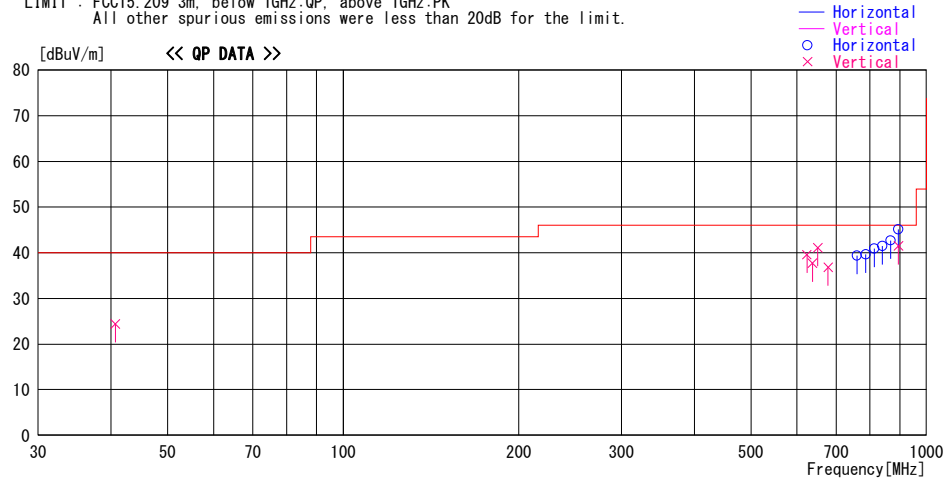
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2011/12/27

Report No. : 32EE0075-H0

Temp./Humi. : 20deg.C / 29% RH
Engineer : Keisuke Kawamura

Mode / Remarks : Transmitting (13.56MHz) Axis (Hori: X / Vert: Y)

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK
All other spurious emissions were less than 20dB for the limit.



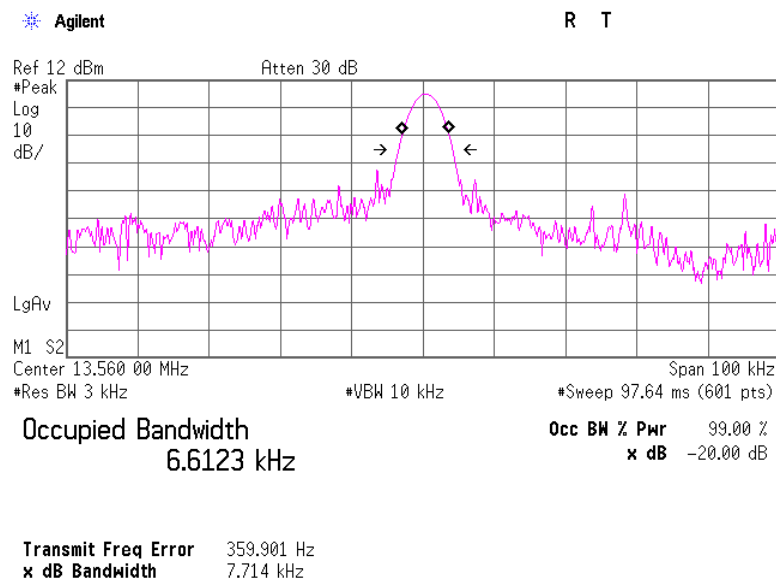
Frequency	Reading	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		Factor	Gain	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
40.680	34.7	QP	14.6	-24.9	24.4	282	100	Vert.	40.0	15.6	
623.778	39.9	QP	19.6	-19.9	39.6	105	100	Vert.	46.0	6.4	
637.339	37.7	QP	19.8	-19.8	37.7	95	100	Vert.	46.0	8.3	
650.913	40.9	QP	20.0	-19.8	41.1	95	100	Vert.	46.0	4.9	
678.021	36.1	QP	20.3	-19.6	36.8	96	100	Vert.	46.0	9.2	
759.384	36.8	QP	21.4	-18.8	39.4	83	126	Hori.	46.0	6.6	
786.503	36.4	QP	21.8	-18.6	39.6	92	117	Hori.	46.0	6.4	
813.624	37.1	QP	22.1	-18.3	40.9	92	114	Hori.	46.0	5.1	
840.747	37.4	QP	22.2	-18.1	41.5	89	110	Hori.	46.0	4.5	
867.865	38.3	QP	22.3	-17.9	42.7	89	105	Hori.	46.0	3.3	
894.985	40.2	QP	22.4	-17.5	45.1	93	100	Hori.	46.0	0.9	
894.987	36.6	QP	22.4	-17.5	41.5	101	122	Vert.	46.0	4.5	

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

20dB Bandwidth and 99% Occupied Bandwidth

Test place	Head Office EMC Lab. No.6 measurement room
Report No.	32EE0075-HO
Date	12/23/2011
Temperature/ Humidity	16 deg. C / 35% RH
Engineer	Yutaka Yoshida
Mode	Transmitting (13.56MHz)

FREQ [MHz]	20dB Bandwidth [kHz]	99% Occupied Bandwidth [kHz]
13.56	7.71	6.61



Frequency Tolerance

Test place Head Office EMC Lab. No.6 measurement room
Report No. 32EE0075-HO
Date 12/23/2011
Temperature/ Humidity 16 deg. C / 35% RH
Engineer Yutaka Yoshida
Mode Transmitting (13.56MHz)

Test Condition deg.C	Test Timing	Measured freq [MHz]	Freq error [MHz]	Result [ppm]	Limit (+/- 0.01%) [+/- ppm]	Margin [ppm]
50deg.C.	Power on	13.56038720	0.00038720	28.55	100.00	71.45
	on 2min.	13.56036239	0.00036238	26.72	100.00	73.28
	on 5min.	13.56037147	0.00037147	27.39	100.00	72.61
	on 10min.	13.56037446	0.00037446	27.62	100.00	72.38
40deg.C.	Power on	13.56035648	0.00035648	26.29	100.00	73.71
	on 2min.	13.56035890	0.00035890	26.47	100.00	73.53
	on 5min.	13.56035909	0.00035909	26.48	100.00	73.52
	on 10min.	13.56035797	0.00035797	26.40	100.00	73.60
30deg.C.	Power on	13.56035844	0.00035844	26.43	100.00	73.57
	on 2min.	13.56035635	0.00035635	26.28	100.00	73.72
	on 5min.	13.56035617	0.00035617	26.27	100.00	73.73
	on 10min.	13.56035691	0.00035691	26.32	100.00	73.68
20deg.C.	Power on	13.56036568	0.00036568	26.97	100.00	73.03
	on 2min.	13.56036459	0.00036459	26.89	100.00	73.11
	on 5min.	13.56036646	0.00036646	27.03	100.00	72.97
	on 10min.	13.56036849	0.00036848	27.17	100.00	72.83
10deg.C.	Power on	13.56038869	0.00038868	28.66	100.00	71.34
	on 2min.	13.56038501	0.00038501	28.39	100.00	71.61
	on 5min.	13.56038605	0.00038605	28.47	100.00	71.53
	on 10min.	13.56038687	0.00038687	28.53	100.00	71.47
0deg.C.	Power on	13.56040176	0.00040175	29.63	100.00	70.37
	on 2min.	13.56039988	0.00039988	29.49	100.00	70.51
	on 5min.	13.56040011	0.00040011	29.51	100.00	70.49
	on 10min.	13.56040029	0.00040029	29.52	100.00	70.48
-10deg.C.	Power on	13.56040151	0.00040151	29.61	100.00	70.39
	on 2min.	13.56040375	0.00040375	29.78	100.00	70.22
	on 5min.	13.56040338	0.00040338	29.75	100.00	70.25
	on 10min.	13.56040310	0.00040310	29.73	100.00	70.27
-20deg.C.	Power on	13.56038807	0.00038807	28.62	100.00	71.38
	on 2min.	13.56039512	0.00039512	29.14	100.00	70.86
	on 5min.	13.56039298	0.00039298	28.98	100.00	71.02
	on 10min.	13.56038991	0.00038991	28.75	100.00	71.25
-30deg.C.	Power on	13.56037207	0.00037206	27.44	100.00	72.56
	on 2min.	13.56037336	0.00037336	27.53	100.00	72.47
	on 5min.	13.56036318	0.00036318	26.78	100.00	73.22
	on 10min.	13.56035481	0.00035481	26.17	100.00	73.83

Limit : 13.56 MHz +/-0.01 % (+/- 100ppm) = +/- 0.001356 MHz

APPENDIX 2: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date	Expiration date of the calibration
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2011/02/22	2012/02/29
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE	2011/02/23	2012/02/29
MJM-15	Measure	KOMELON	KMC-36	-	RE	-	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2011/04/08	2012/04/30
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2011/08/11	2012/08/31
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2011/10/15	2012/10/31
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2011/10/15	2012/10/31
MCC-51	Coaxial cable	UL Japan	-	-	RE	2011/07/15	2012/07/31
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2011/11/02	2012/11/30
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2011/03/04	2012/03/31
MLPA-01	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100017	RE	2011/10/19	2012/10/31
MCC-112	Coaxial cable	Fujikura/Suhner/T SJ	5D-2W(10m)/SFM141(3m)/sucoform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	RE	2011/07/15	2012/07/31
MCC-31	Coaxial cable	UL Japan	-	-	RE	2011/07/28	2012/07/31
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	AT	2011/02/15	2012/02/29
MCC-138	Microwave cable	HUBER+SUHNER	SUCOFLEX 102	37953/2	AT	2011/10/28	2012/10/31
MCH-04	Temperature and Humidity Chamber	Tabai Spec	PL-2KP	14015723	AT	2011/08/22	2012/08/31
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	AT	2011/02/23	2012/02/29

The expiration date of the calibration is the end of the expired month.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item: RE: Radiated Emission

AT: 20dB Bandwidth, 99% Occupied Bandwidth, Frequency Tolerance

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