Page : 16 of 27 **Issued date** : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

#### **APPENDIX 2: Data of EMI test**

#### **Conducted emission**

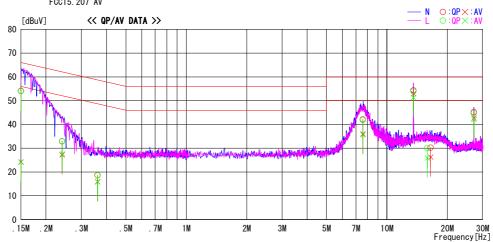
# DATA OF CONDUCTED EMISSION TEST

Head Office EMC Lab. No. 3 Semi Anechoic Chamber Date : 2011/03/24

Report No. : 31GE0106-H0-02 Temp./Humi. Engineer : 21deg.C / 32% RH : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz With Tag

LIMIT : FCC15. 207 QP FCC15. 207 AV



F	Reading	Level	Corr.	Resi	ılts	Lir	nit	Mar	gin		
Frequency	QP	AV	Factor	QP	AV	QP	AV	QP	AV	Phase	Comment
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0. 15000	40. 9	11.0	13. 2	54. 1	24. 2	66.0	56.0	11. 9	31.8	N	
0. 15000	40.8	10. 9	13. 2	54. 0	24. 1	66. 0	56.0	12. 0	31. 9	L	
0. 24071	19.6	13. 9	13. 3	32. 9	27. 2	62. 1	52. 1	29. 2	24. 9	N	
0. 24111	19.6	14. 4	13. 3	32. 9	27. 7	62. 1	52. 1	29. 2	24. 4	L	
0.36102	5.3	2. 6	13. 3	18. 6	15. 9	58. 7	48. 7	40. 1	32. 8	N	
0.36184	5.3	2. 5	13. 3	18. 6	15. 8	58. 7	48. 7	40. 1	32. 9	L	
7. 58751	28. 2	22. 1	13. 9	42. 1	36.0	60.0	50.0	17. 9	14. 0	N	
7. 58912	28. 0	21. 7	13. 9	41.9	35. 6	60.0	50.0	18. 1	14. 4	L	
13.56000	39.6	37. 0	14. 3	53.9	51.3	60.0	50.0	-	-	L	
13.56000	40.0	38. 6	14. 3	54. 3	52. 9	60.0	50.0	-	-	N	
15.89850	15.5	11.3	14. 5	30. 0	25. 8	60.0	50.0	30.0	24. 2	L	
16. 49961	15. 7	11. 7	14. 5	30. 2	26. 2	60.0	50.0	29.8	23. 8	N	
27. 11988	30. 3	27. 7	14. 9	45. 2	42. 6	60.0	50.0	14. 8	7. 4	N	
27. 12028	29. 9	27. 2	14. 9	44. 8	42. 1	60.0	50.0	15. 2	7. 9	L	
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\*Please refer to the data of page 18 for the formal data.

### UL Japan, Inc.

Head Office EMC Lab.

 $4383\text{-}326 \ Asama\text{-}cho, Ise\text{-}shi, Mie\text{-}ken \ 516\text{-}0021 \ JAPAN$ 

: +81 596 24 8116 Telephone Facsimile : +81 596 24 8124

Page : 17 of 27 Issued date : March 29, 2011 **Revised date** : March 31, 2011 FCC ID : UOEME-K01

#### **Conducted emission**

# DATA OF CONDUCTED EMISSION UL Japan, Inc. Head Office

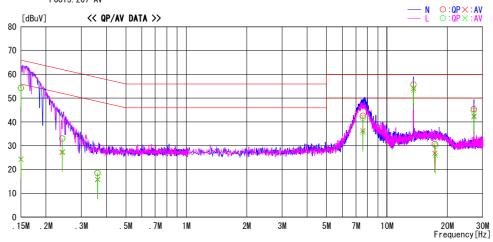
Head Office EMC Lab. No.3 Semi Anechoic Chamber Date: 2011/03/24

Report No. : 31GE0106-H0-02

Temp./Humi. Engineer : 21deg.C / 32% RH : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz Without Tag

FCC15. 207 QP FCC15. 207 AV LIMIT :



Ewaguan au	Reading	Level	Corr.	Resu	ılts	Lin	nit	Mar	gin		
Frequency	QP	AV	Factor	QP	AV	QP	AV	QP	AV	Phase	Comment
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0. 15000	41. 1	11. 2	13. 2	54. 3	24. 4	66.0	56.0	11. 7	31.6	N	
0. 15000	41. 1	11. 2	13. 2	54. 3	24. 4	66.0	56.0	11. 7	31.6	L	
0. 24076	19.8	13. 9	13. 3	33. 1	27. 2	62. 1	52. 1	29.0	24. 9	N	
0. 24138	19.8	14. 3	13. 3	33. 1	27. 6	62. 0	52.0	28. 9	24. 4	L	
0.36111	5.3	2. 6	13. 3	18. 6	15. 9	58. 7	48. 7	40. 1	32. 8	N	
0.36184	5. 2	2. 4	13. 3	18. 5	15. 7	58. 7	48. 7	40. 2	33. 0	L	
7. 58341	28. 7	22. 4	13. 9	42. 6	36. 3	60.0	50.0	17. 4	13. 7	N	
7. 58921	27. 8	21. 7	13. 9	41.7	35. 6	60.0	50.0	18. 3	14. 4	L	
13.56000	41.4	38. 9	14. 3	55. 7	53. 2	60.0	50.0	-	-	L	
13.56000	41.5	39. 7	14. 3	55. 8	54. 0	60.0	50.0	- !	-	N	
17. 33171	16. 2	12. 4	14. 5	30. 7	26. 9	60.0	50.0	29. 3	23. 1	N	
17. 45521	15.5	11.5	14. 5	30.0	26. 0	60.0	50.0	30.0	24. 0	L	
27. 11972	30.5	27. 6	14. 9	45. 4	42. 5	60.0	50.0	14. 6	7. 5	N	
27. 1203 1	29. 9	27. 2	14. 9	44. 8	42. 1	60.0	50.0	15. 2	7. 9	L	
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<sup>\*</sup>Please refer to the data of page 18 for the formal data.

Page : 18 of 27 Issued date : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

#### **Conducted emission**

#### DATA OF CONDUCTED EMISSION TEST

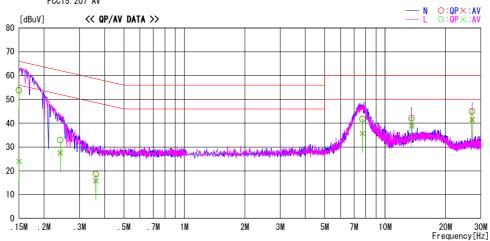
Head Office EMC Lab. No.3 Semi Anechoic Chamber Date: 2011/03/24

Report No. : 31GE0106-H0-02

Temp./Humi. Engineer : 21deg.C / 32% RH : Hiroyuki Furutaka

 $\label{eq:mode_mode_mode} \mbox{Mode / Remarks : Tx 13.56MHz (Antenna terminated with dummy load)}$ 

FCC15. 207 QP FCC15. 207 AV LIMIT :



F	Reading	g Level	Corr.	Resu	ılts	Lin	nit	Mar	gin		
Frequency	QP	AV	Factor	QP	AV	QP	AV	QP	AV	Phase	Comment
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15000	40. 7	10.8	13. 2	53. 9	24. 0	66. 0	56.0	12. 1	32.0	N	
0. 24082	19.5	14. 1	13. 3	32. 8	27. 4	62. 1	52. 1	29. 3	24. 7	N	
0.36145	5. 4	2. 6	13. 3	18. 7	15. 9	58. 7	48. 7	40.0	32.8	N	
7. 71011	27. 9	21.9	13. 9	41. 8	35. 8	60.0	50.0	18. 2	14. 2	N	
13.56000	27. 8	24. 7	14. 3	42. 1	39. 0	60.0	50.0	17. 9	11.0	N	
27. 12020	30. 1	26. 6	14. 9	45. 0	41.5	60. 0	50.0	15. 0	8. 5	N	
0.15000	40. 5	10.7	13. 2	53. 7	23. 9	66. 0	56.0	12. 3	32. 1	L	
0. 24116	19.7	14. 6	13. 3	33. 0	27. 9	62. 1	52. 1	29. 1	24. 2	L	
0.36258	5. 1	2. 2	13. 3	18. 4	15. 5	58. 7	48. 7	40. 3	33. 2	L	
7. 71361	27. 7	21. 7	13. 9	41. 6	35. 6	60.0	50.0	18. 4	14.4	L	
13.56000	27. 1	24. 1	14. 3	41. 4	38. 4	60.0	50.0	18. 6	11.6	L	
27. 12120	29. 9	26. 3	14. 9	44. 8	41. 2	60.0	50.0	15. 2	8.8	L	
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#### UL Japan, Inc. **Head Office EMC Lab.**

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Page : 19 of 27 Issued date : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

#### **Fundamental emission and Spectrum Mask**

#### DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.2 Semi Anechoic Chamber Date: 2011/03/23

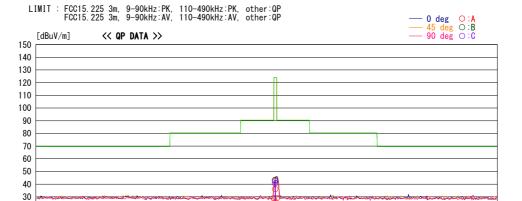
14.56M Frequency[Hz]

Report No. : 31GE0106-H0-02 Temp./ Humi. Engineer : 22deg.C / 31% RH : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz With Tag

20 10

12. 56M



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. 10000	28. 2	QP	19. 9	6. 9	32. 1	22. 9	69.5	46. 6	0	Α	39	
13. 11000		QP	19. 9	6. 9	32. 1	23.0	69.5		0	Α	39	
13. 41000		QP	19. 9	6. 9	32. 1	22. 8	80. 5		0	Α	39	
13. 55300	34. 3	QP	19. 9	6. 9	32. 1	29.0	90.4	61.4	0	Α	39	
13.56000		QP	19. 9	6. 9	32. 1	43.3	123. 9	80. 6	0	Α	39	Worst
13.56000	48. 3	QP	19. 9	6. 9	32. 1	43.0	123. 9	80. 9	45	В	37	
13.56000		QP	19. 9	6. 9	32. 1	40.6	123.9			С	3	
13. 56000		QP	19. 9	6. 9	32. 1	42. 1	123. 9	81. 8		С	235	
13. 56000			19. 9	6. 9	32. 1	36. 1	123. 9			Α		Hori
13. 56700	34. 2	QP	19. 9	6. 9	32. 1	28. 9	90. 4	61.5	0	Α	39	
13. 71000		QP	19. 9	7. 0	32. 1	22. 9	80. 5	57. 6	0	Α	39	
14. 01000		QP	19. 9	7. 0	32. 1	22. 8	69.5	46. 7	0	Α	39	
14. 02000	27. 9	QP	19. 9	7. 0	32. 1	22. 7	69.5	46. 8	0	Α	39	

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.

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Page : 20 of 27 Issued date : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

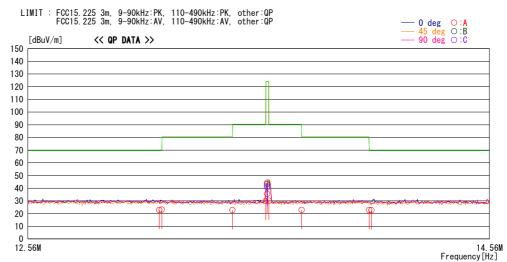
#### **Fundamental emission and Spectrum Mask**

#### DATA OF RADIATED EMISSION TEST

Head Office EMC Lab. No.2 Semi Anechoic Chamber Date: 2011/03/23

Report No. : 31GE0106-H0-02 Temp. / Humi. : 22deg.C / 31% RH : Hiroyuki Furutaka Engineer

Mode / Remarks : Tx 13.56MHz Without Tag



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. 10000	28. 2	QP	19. 9	6. 9	32. 1	22. 9	69.5	46. 6	0	Α	65	
13. 11000		QP	19. 9	6. 9	32. 1	23. 0	69. 5		0	Α	65	
13. 41000		QP	19. 9	6. 9	32. 1	22. 8	80. 5	57. 7	0	Α	65	
13. 55300	35. 2	QP	19. 9	6. 9	32. 1	29. 9	90.4	60. 5	0	Α	65	
13. 56000		QP	19. 9	6. 9	32. 1	43.3	123.9		45	В	24	
13. 56000	46. 1	QP	19. 9	6. 9	32. 1	40.8	123.9	83. 1	90	C	326	
13. 56000	47. 2	QP	19. 9	6. 9	32. 1	41.9	123.9	82. 0	135	C	350	
13. 56000	49. 5	QP	19. 9	6. 9	32. 1	44. 2	123.9	79. 7	0	Α		Worst
13. 56000		QP	19. 9	6. 9	32. 1	35. 7	123. 9	88. 2	0	Α		Hori
13. 56700	35. 5	QP	19. 9	6. 9	32. 1	30. 2	90.4	60. 2	0	Α	65	
13. 71000		QP	19. 9	7. 0	32. 1	22. 9	80. 5		0	Α	65	
14. 01000		QP	19. 9	7. 0	32. 1	22. 7	69.5		0	Α	65	
14. 02000	27. 9	QP	19. 9	7. 0	32. 1	22.7	69.5	46.8	0	Α	65	
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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.

#### UL Japan, Inc. Head Office EMC Lab.

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Page : 21 of 27 Issued date : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

#### **Spurious emission**

#### DATA OF RADIATED EMISSION TEST

Head Office EMC Lab. No.2 Semi Anechoic Chamber Date : 2011/03/23

Report No. : 31GE0106-H0-02 Temp./ Humi. Engineer : 22deg.C / 31% RH : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz With Tag

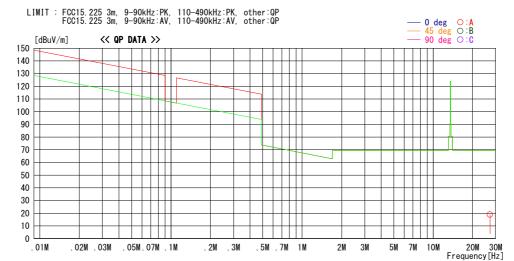


CHART: WITH FACTOR, ANT TYPE: LOOP, Except for the data below: adequate margin data below the limits. CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE + ATTEN.) - GAIN AMP.

#### UL Japan, Inc. Head Office EMC Lab.

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Page : 22 of 27 Issued date : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

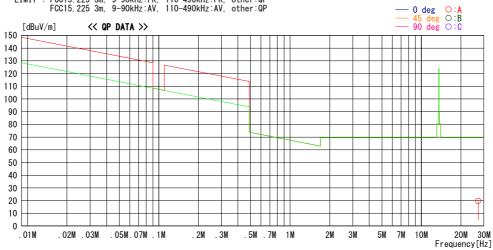
#### **Spurious emission**

# DATA OF RADIATED EMISSION TEST UL Japan, Inc. Head Office EMC Lab. No. 2 Semi Anechoic Chamber Date: 2011/03/23

Report No. : 31GE0106-H0-02 : 22deg.C / 31% RH : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz Without Tag





Freq.	Reading [dBuV]	DET	Ant. Fac	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna [deg]		Table [deg]	Comment
27. 12000		QP	19. 2	7. 5						Α	45	
27. 12000	20. 1	ur-	19. 2	7. 3	32. 1	19. /	09. 5	49. 0	J J	^	40	
				l								

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.

#### UL Japan, Inc. Head Office EMC Lab.

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 Page
 : 23 of 27

 Issued date
 : March 29, 2011

 Revised date
 : March 31, 2011

 FCC ID
 : UOEME-K01

#### **Spurious emission**

#### DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 2 Semi Anechoic Chamber Date : 2011/03/23

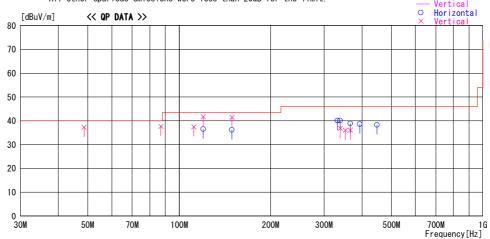
Report No. : 31GE0106-H0-02

Temp./Humi. : 22deg.C/31% RH Engineer : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz With Tag

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

— Horizontal
— Vertical



			Antonno	Loss&							
Frequency	Reading	DET	Antenna Factor	Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
48. 612	48. 0	QP	11.0	-21. 7	37. 3	183	100	Vert.	40. 0	2.7	
86. 998	51.0	QP	7.7	-21. 1	37. 6	201	100	Vert.	40.0	2.4	
111.712	46.4	QP	12.0	-20. 9	37. 5	4	100	Vert.	43. 5	6.0	
120.001	44. 0	QP	13. 2	-20. 7	36. 5	17	264	Hori.	43. 5	7.0	
120.003	49. 2	QP	13. 2	-20. 7	41. 7	349	100	Vert.	43. 5	1.8	
149. 156	46. 9	QP	15.0	-20. 4	41. 5	54	100	Vert.	43. 5	2.0	
149. 172	41.6	QP	15.0	-20. 4	36. 2	219	226	Hori.	43. 5	7.3	
332.076	43. 2	QP	15.8	-18. 9	40. 1	184	100	Hori.	46. 0	5. 9	
339.005	43.1	QP	15.9	-18. 9	40. 1	29	100	Hori.	46. 0	5. 9	
339.009	39.8	QP	15.9	-18. 9	36.8	76	153	Vert.	46. 0	9. 2	
352. 564	38. 6	QP	16.3	-18. 9	36. 0	63	145	Vert.	46. 0	10.0	
366. 120	41.2	QP	16.6	-18. 9	38. 9	184	100	Hori.	46. 0	7. 1	
366. 122	38. 4	QP	16.6	-18. 9	36. 1	94	137	Vert.	46. 0	9.9	
393. 237	40.5	QP	17. 1	-19.0	38. 6	139	100	Hori.	46. 0	7.4	
447. 483	39.8	QP	17. 6	-19. 1	38. 3	210	100	Hori.	46. 0	7.7	

#### UL Japan, Inc. Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Page : 24 of 27 **Issued date** : March 29, 2011 Revised date : March 31, 2011 FCC ID : UOEME-K01

#### **Spurious emission**

#### DATA OF RADIATED EMISSION TEST

Head Office EMC Lab. No.2 Semi Anechoic Chamber Date: 2011/03/23

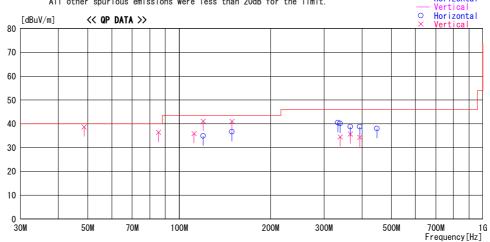
Report No. : 31GE0106-H0-02

Temp./Humi. Engineer : 22deg.C / 31% RH : Hiroyuki Furutaka

Mode / Remarks : Tx 13.56MHz Without Tag

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

— Horizontal



_										1	ı
Не	Angle	Ang	Angle	le	Height	ht P	Polar.	Lim	nit	Margin	Comment
[	[Deg]	[De	[Deg]	g]	[cm]			[dBu	V/m]	[dB]	1
				18			Hori.		43. 5	8.6	
0	230		230	230	220	220	Hori.	İ	43.5	6.8	
4	184		184	184	100	100	Hori.		46.0	5.5	
6	20		26	26	100	100	Hori.		46.0	5.8	
2	182	i	182	182	100	100	Hori.		46.0	7.2	
8	148		148	148	100	100	Hori.		46.0	7.2	
9	219		219	219	100	100	Hori.		46.0	8.0	
6		i	6	6	100	100	Vert.		40.0	1.3	
8	168		168	168	100	100	Vert.		40.0	3.6	
9	349		349	349	100	100	Vert.		43.5	7.6	
ol	10	i	10	10	100	100	Vert.		43.5	2.4	
4	74	i	74	74	100	100	Vert.	l	43.5	2.5	
7	8	i	87	87	100	100	Vert.	l	46.0	11.5	
6	96	i	96	96	134	134	Vert.		46.0	10.3	
9	109		109	109	134	134	Vert.		46.0	11.7	
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Page : 25 of 27
Issued date : March 29, 2011
Revised date : March 31, 2011
FCC ID : UOEME-K01

#### 20dB Bandwidth and 99% Occupied Bandwidth

Test place Head Office EMC Lab. No.2 Semi Anechoic Chamber

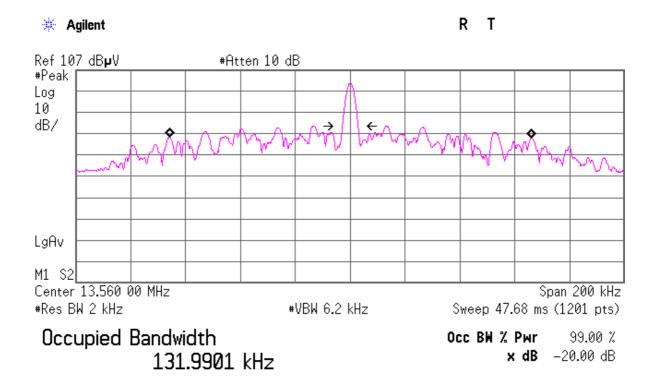
Report No. 31GE0106-HO-02

Date 03/23/2011
Temperature/ Humidity 22 deg C / 31%

Temperature/ Humidity
Engineer
Mode

22 deg.C./ 31% RH
Keisuke Kawamura
Tx With Tag

FREQ	20dB Bandwidth	99% Occupied Bandwidth
[MHz]	[kHz]	[kHz]
13.56	5.84	131.99



Transmit Freq Error 129.903 Hz x dB Bandwidth 5.841 kHz

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 $<sup>\</sup>ast$  The test was performed with a model with Tag as a representative since the model with Tag had had the worst level in pre-check.

 Page
 : 26 of 27

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 : UOEME-K01

#### **Frequency Tolerance**

Test place Head Office EMC Lab. No.6 Measurement Room

Report No. 31GE0106-HO-02
Date 03/26/2011
Temperature/ Humidity 23 deg.C./ 34%
Engineer Hiroyuki Furutaka
Mode Tx Mod off

Te		Test	Measured	Freq	Result	Limit	Margin
Cond		Timing	freq	error			
deg.C	Volts		[MHz]	[MHz]	[ppm]	- 11 -	[ppm]
		Power on	13.56006245	0.00006245	4.61	1 1	95.39
	138V	on 2min.	13.56005605	0.00005605	4.13		95.87
		on 5min.	13.56005458	0.00005458	4.02	Limit (+/- 0.01%) [+/- ppm] 100.00 +/- 0.001356	95.98
		on 10min.	13.56004776	0.00004776	3.52		96.48
		Power on	13.56007828	0.00007828	5.77		94.23
20deg.C	120V	on 2min.	13.56006939	0.00006939	5.12	1 +	94.88
8		on 5min.	13.56006212	0.00006212	4.58	100.00	95.42
		on 10min.	13.56005764	0.00005764	4.25	1	95.75
		Power on	13.56005084	0.00005084	3.75	100.00	96.25
	102V	on 2min.	13.56004697	0.00004697	3.46		96.54
	1021	on 5min.	13.56004597	0.00004597	3.39		96.61
		on 10min.	13.56004479	0.00004479	3.30	100.00	96.70
		Power on	13.56000391	0.00000391	0.29	100.00	99.71
50deg.C.		on 2min.	13.55999518	-0.00000482	-0.36	100.00	99.64
Joung.c.		on 5min.	13.55999206	-0.00000794	-0.59	100.00	99.41
		on 10min.	13.55999004	-0.00000996	-0.73	100.00	99.27
		Power on	13.56002825	0.00002825	2.08	100.00	97.92
40deg.C.		on 2min.	13.56001570	0.00001570	1.16	100.00	98.84
40deg.e.		on 5min.	13.56000961	0.00000961	0.71	100.00	99.29
		on 10min.	13.56000620	0.00000620	0.46	100.00	99.54
		Power on	13.56005795	0.00005795	4.27	100.00	95.73
30deg.C.		on 2min.	13.56004270	0.00004270	3.15	100.00	96.85
Joueg.e.		on 5min.	13.56003554	0.00003554	2.62	100.00	97.38
		on 10min.	13.56003050	0.00003050	2.25	100.00	97.75
		Power on	13.56007828	0.00007828	5.77	100.00	94.23
20deg.C.		on 2min.	13.56006939	0.00006939	5.12	100.00	94.88
zoueg.c.		on 5min.	13.56006212	0.00006212	4.58	100.00	95.42
		on 10min.	13.56005764	0.00005764	4.25	100.00	95.75
		Power on	13.56010963	0.00010963	8.08	100.00	91.92
10deg.C.	120V	on 2min.	13.56010065	0.00010065	7.42	100.00	92.58
rodeg.C.	120 V	on 5min.	13.56009676	0.00009676	7.14	100.00	92.86
		on 10min.	13.56009074	0.00009074	6.69	100.00	93.31
		Power on	13.56011124	0.00011124	8.20	100.00	91.80
0deg.C.		on 2min.	13.56011655	0.00011655	8.59	100.00	91.41
oueg.c.		on 5min.	13.56011398	0.00011398	8.41	100.00	91.59
		on 10min.	13.56011312	0.00011312	8.34	100.00	91.66
		Power on	13.56008550	0.00008550	6.30	100.00	93.70
-10deg.C.		on 2min.	13.56010899	0.00010899	8.04	100.00	91.96
-10deg.C.		on 5min.	13.56011471	0.00011471	8.46	100.00	91.54
		on 10min.	13.56011665	0.00011665	8.60	100.00	91.40
		Power on	13.56004557	0.00004557	3.36	100.00	96.64
20do- C		on 2min.	13.56007526	0.00007526	5.55	100.00	94.45
-20deg.C		on 5min.	13.56008870	0.00008870	6.54	100.00	93.46
		on 10min.	13.56009764	0.00009764	7.20	100.00	92.80
		Power on	13.55998647	-0.00001353	-1.00		99.00
20.1		on 2min.	13.56003264	0.00003264	2.41		97.59
-30deg.C		on 5min.	13.56005069	0.00005069	3.74	1	96.26
	I	on 10min.	13.56005821	0.00005821	4.29	1	95.71

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

 Page
 : 27 of 27

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#### **APPENDIX 3: Test instruments**

**EMI test equipment** 

EMI test eque Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	
						Interval(month)
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2010/09/01 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE	2011/02/23 * 12
MJM-05	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	RE	2010/04/19 * 12
MLPA-02	Loop Antenna	Rohde & Schwarz	HFH2-Z2	836553/009	RE	2010/12/08 * 12
MCC-13	Coaxial Cable	Fujikura	3D-2W(12m)/5D- 2W(5m)/5D-2W(0.8m)/5D- 2W(1m)	-	RE	2011/02/18 * 12
MCC-31	Coaxial cable	UL Japan	-	-	RE	2010/07/20 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2011/03/04 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	VHA91032008	RE	2010/10/11 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	201	RE	2010/10/11 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	RE	2011/02/18 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	RE	2010/11/05 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	RE	2010/09/09 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE	2010/11/30 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	CE	2011/02/22 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	CE	2011/02/23 * 12
MJM-06	Measure	PROMART	SEN1955	-	CE	-
MSA-09	Spectrum Analyzer	Advantest	R3273	95090115	CE	2010/11/18 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	CE	2010/08/23 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2011/02/20 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2011/02/22 * 12
MTA-31	Terminator	TME	CT-01	-	CE	2011/01/05 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m) /sucoform141-PE(1m)/421- 010(1.5m)/RFM- E321(Switcher)	-/00640	CE	2010/07/23 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	FT	2011/02/23 * 12
MCH-04	Temperature and Humidity Chamber	Tabai Espec	PL-2KP	14015723	FT	2010/08/03 * 12
EST-45	Universal Counter	Agilent	53132A	MY40008906	FT	2010/08/09 * 12

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

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

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: CE: Conducted Emission

**RE: Radiated Emission FT: Frequency Tolerance** 

#### UL Japan, Inc.

**Head Office EMC Lab.** 

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN