



STC Test Report

Date : 2011-04-06

Page 1 of 29

No. : HM166381

Applicant (GAS003): Gatekeeper Systems (HK) Ltd.
Unit 2318-2319, Level 23, Tower 1, Metroplaza No. 223
Hing Fong Road, Kwai Fong, N.T., Hong Kong.

Manufacturer: Gatekeeper Systems (HK) Ltd.
Unit 2318-2319, Level 23, Tower 1, Metroplaza No. 223
Hing Fong Road, Kwai Fong, N.T., Hong Kong.

Description of Sample(s): Submitted sample(s) said to be
Product: Remote Controlled Locking Wheel
Brand Name: Gatekeeper Systems
Model Number: W-9460
FCC ID: W3Z-W9460

Date Sample(s) Received: 2011-03-03

Date Tested: 2011-03-23 to 2011-06-08

Investigation Requested: Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2010 and ANSI C63.4:2009 for FCC Certification.

Conclusion(s): The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

Remark(s): ---

Dr. LEE Kam Chuen
Authorized Signatory
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong
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STC Test Report

Date : 2011-04-06

Page 2 of 29

No. : HM166381

CONTENT:

Cover
Content

Page 1 of 29
Page 2-3 of 29

1.0 General Details

1.1 Equipment Under Test [EUT]
 Description of EUT operation

Page 4 of 29

1.2 Description of EUT Operation

1.3 Date of Order

Page 4 of 29

1.4 Submitted Sample

Page 4 of 29

1.5 Test Duration

Page 4 of 29

1.6 Country of Origin

Page 4 of 29

2.0 Technical Details

2.1 Investigations Requested

Page 5 of 29

2.2 Test Standards and Results Summary

Page 5 of 29

3.0 Test Results

3.1 Emission

Page 6-26 of 29

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STC Test Report

Date : 2011-04-06

Page 3 of 29

No. : HM166381

Appendix A

List of Measurement Equipment

Page 27 of 29

Appendix B

Photographs

Page 28-29 of 29

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STC Test Report

Date : 2011-04-06

Page 4 of 29

No. : HM166381

1.0 General Details

1.1 Equipment Under Test [EUT]

Description of Sample(s)

Product: Remote Controlled Locking Wheel
Manufacturer: Gatekeeper Systems (HK) Ltd.
Unit 2318-2319, Level 23, Tower 1, Metroplaza No. 223 Hing Fong Road, Kwai Fong, N.T., Hong Kong.
Brand Name: Gatekeeper Systems
Model Number: W-9460
Input Voltage: 3.0Vd.c. (Li-MH battery x 1)

1.2 Description of EUT Operation

The Equipment Under Test (EUT) is a Gatekeeper Systems (HK) Ltd., Remote Controlled Locking Wheel. The transmission signal is frequency hopping with channel frequency range 2401.4-2478.6MHz during normal use. The EUT was set to fixed frequency test mode by applicant.

1.3 Date of Order

2011-03-03

1.4 Submitted Sample(s):

1 Sample

1.5 Test Duration

2011-03-23 to 2011-06-08

1.6 Country of Origin

China

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STC Test Report

Date : 2011-04-06

Page 5 of 29

No. : HM166381

2.0 Technical Details

2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2010 Regulations and ANSI C63.4:2009 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION Results Summary						
Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Fail	N/A
Field Strength of Fundamental & Harmonics Emissions	FCC 47CFR 15.249	ANSI C63.4:2009	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.4:2009	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: N/A - Not Applicable

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STC Test Report

Date : 2011-04-06

Page 6 of 29

No. : HM166381

3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions

Test Requirement:	FCC 47CFR 15.249
Test Method:	ANSI C63.4:2009
Test Date:	2010-08-19
Mode of Operation:	Tx Mode (Data Rate 20k) / Tx Mode (Data Rate 500k) / Rx Mode

Test Method:

The sample was placed 0.8m above the ground plane on a standard radiated emission test site. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. In the frequency range of 9kHz to 30MHz, The center of the loop antenna shall be 1 meter above the ground and rotated loop axis for maximum reading. The emissions worst-case are shown in Test Results of the following pages.

Remark: 3 orthogonal axis apply to hand-held device only.

*: Semi-anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

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STC Test Report

Date : 2011-04-06

Page 7 of 29

No. : HM166381

Spectrum Analyzer Setting:

9KHz – 30MHz (Pk & Av)

RBW: 10kHz
VBW: 30kHz
Sweep: Auto
Span: Fully capture the emissions being measured
Trace: Max. hold

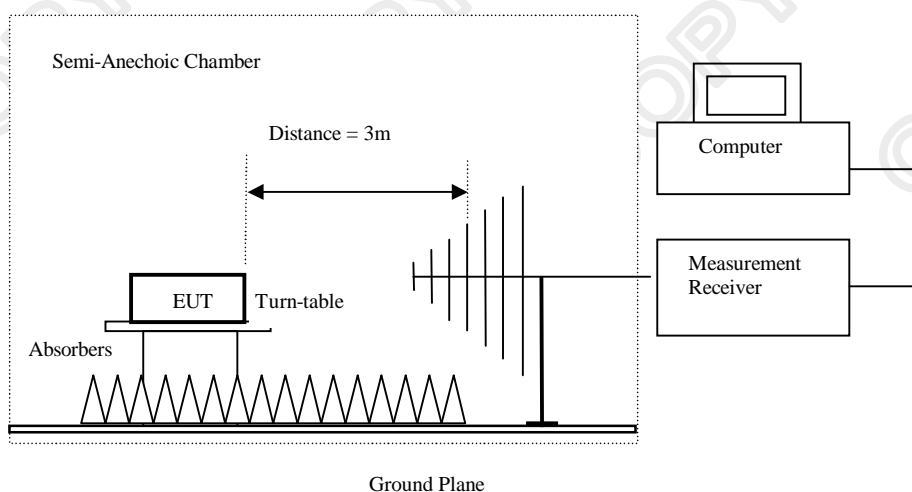
30MHz – 1GHz (QP)

RBW: 120kHz
VBW: 120kHz
Sweep: Auto
Span: Fully capture the emissions being measured
Trace: Max. hold

Above 1GHz (Pk & Av)

RBW: 3MHz
VBW: 3MHz
Sweep: Auto
Span: Fully capture the emissions being measured
Trace: Max. hold

Test Setup:



Absorbers placed on top of the ground plane are for measurements above 1000MHz only.

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STC Test Report

Date : 2011-04-06

Page 8 of 29

No. : HM166381

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Results of Tx mode (Data Rate: 20k): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2401.4	61.6	29.3	90.9	35,075.2	500,000	Vertical
* 4802.9	20.3	33.9	54.2	512.9	5,000	Vertical
7204.2	Emissions detected are more than 20 dB below the FCC Limits				500	Vertical
9605.6					500	Vertical
* 12007.0					500	Vertical
14408.4					500	Vertical
16809.8					500	Vertical
* 19211.2					500	Vertical
21612.6					500	Vertical
24014.0					500	Vertical

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2401.4	60.4	29.3	89.7	30,549.2	50,000	Vertical
* 4802.9	17.9	33.9	51.8	389.0	500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 9 of 29

No. : HM166381

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Results of Tx mode (Data Rate: 20k): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2426.1	61.8	29.5	91.3	36,728.2	500,000	Vertical
* 4852.9	19.5	34.1	53.6	478.6	5,000	Vertical
7278.3	Emissions detected are more than 20 dB below the FCC Limits				500	Vertical
9704.4					500	Vertical
* 12130.5					500	Vertical
14556.6					500	Vertical
16982.7					500	Vertical
* 19408.8					500	Vertical
21834.9					500	Vertical
24261.0					500	Vertical

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2426.1	60.6	29.5	90.1	31,989.0	50,000	Vertical
* 4852.9	16.1	34.1	50.2	323.6	500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 10 of 29

No. : HM166381

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Results of Tx mode (Data Rate: 20k): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2451.8	62.2	29.5	91.7	38,459.2	500,000	Vertical
* 4903.4	19.3	34.8	54.1	507.0	5,000	Vertical
7355.4	Emissions detected are more than 20 dB below the FCC Limits				500	Vertical
9807.2					500	Vertical
* 12259.0					500	Vertical
14710.8					500	Vertical
17162.6					500	Vertical
* 19614.4					500	Vertical
22066.2					500	Vertical
24518.0				500	Vertical	

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2451.8	60.8	29.5	90.3	32,734.1	50,000	Vertical
* 4903.4	15.6	34.8	50.4	331.1	500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 11 of 29

No. : HM166381

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Results of Tx mode (Data Rate: 500k): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2403.3	60.4	29.3	89.7	30,549.2	500,000	Vertical
* 4802.8	21.8	33.9	55.7	609.5	5,000	Vertical
7209.9	Emissions detected are more than 20 dB below the FCC Limits				500	Vertical
9613.2					500	Vertical
* 12016.5					500	Vertical
14419.8					500	Vertical
16823.1					500	Vertical
* 19226.4					500	Vertical
21629.7					500	Vertical
24033.0					500	Vertical

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2403.3	53.4	29.3	82.7	13,645.8	50,000	Vertical
* 4802.8	12.9	33.9	46.8	218.8	500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 12 of 29

No. : HM166381

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Results of Tx mode (Data Rate: 500k): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2438.5	62.8	29.5	92.3	41,209.8	500,000	Vertical
* 4877.6	20.4	34.2	54.6	537.0	5,000	Vertical
7315.5	Emissions detected are more than 20 dB below the FCC Limits				500	Vertical
9754.0					500	Vertical
* 12192.5					500	Vertical
14631.0					500	Vertical
17069.5					500	Vertical
* 19508.0					500	Vertical
21946.5					500	Vertical
24385.0					500	Vertical

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2438.5	57.6	29.5	87.1	22,646.4	50,000	Vertical
* 4877.6	10.1	34.2	44.3	164.1	500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 13 of 29

No. : HM166381

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Average]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Results of Tx mode (Data Rate: 500k): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2478.4	63.1	29.7	92.8	43,651.6	500,000	Vertical
* 4957.1	18.5	35.2	53.7	484.2	5,000	Vertical
7435.2	Emissions detected are more than 20 dB below the FCC Limits				500	Vertical
9913.6					500	Vertical
* 12392.0					500	Vertical
14870.4					500	Vertical
17348.8					500	Vertical
* 19827.2					500	Vertical
22305.6					500	Vertical
24784.0					500	Vertical

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dB μ V/m	Correction Factor dB μ V/m	Field Strength dB μ V/m	Field Strength μ V/m	Limit @3m μ V/m	E-Field Polarity
2478.4	56.8	29.7	86.5	21,134.9	50,000	Vertical
* 4957.1	8.5	35.2	43.7	153.1	500	Vertical

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

*: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 14 of 29

No. : HM166381

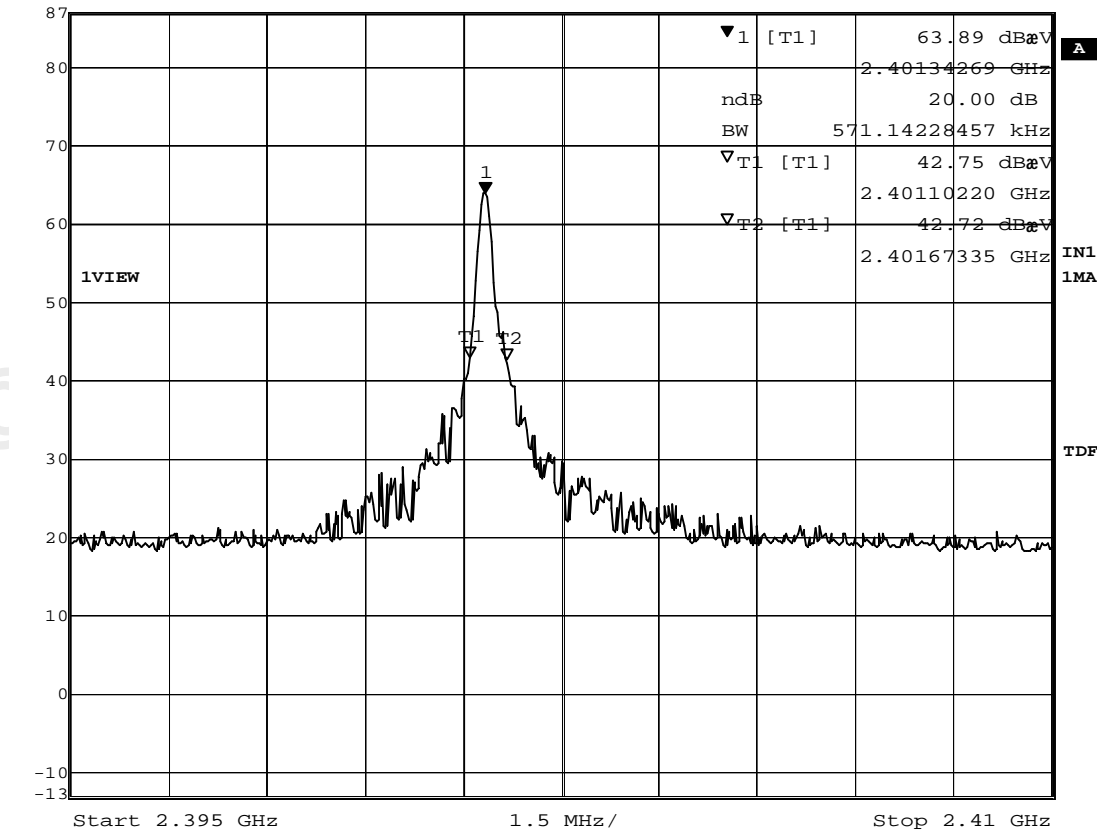
Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [kHz]
2401.3	571.14

(Data Rate: 20k)

20dB Bandwidth of Fundamental Emission

Marker 1 [T1 ndB]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	ndB	20.00 dB	VBW	300 kHz
87 dB μ V	BW	571.14228457 kHz	SWT	5 ms
	Unit		dB μ V	



Date: 8.JUN.2011 09:32:41

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STC Test Report

Date : 2011-04-06

Page 15 of 29

No. : HM166381

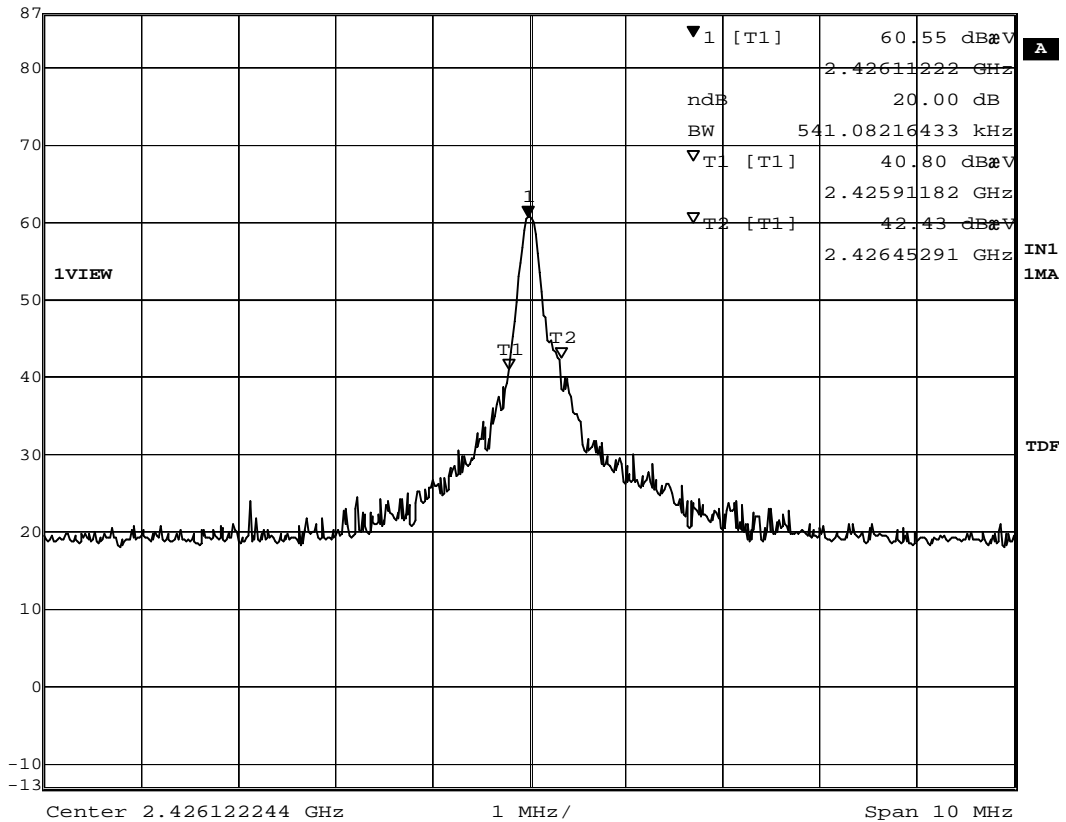
Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [kHz]
2426.1	541.08

(Data Rate: 20k)

20dB Bandwidth of Fundamental Emission

	Marker 1 [T1 ndB]	RBW	100 kHz	RF Att	0 dB
	Ref Lvl	ndB	20.00 dB	VBW	300 kHz
	87 dB μ V	BW	541.08216433 kHz	SWT	5 ms
		Unit			dB μ V



Date: 8.JUN.2011 09:40:25

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STC Test Report

Date : 2011-04-06

Page 16 of 29

No. : HM166381

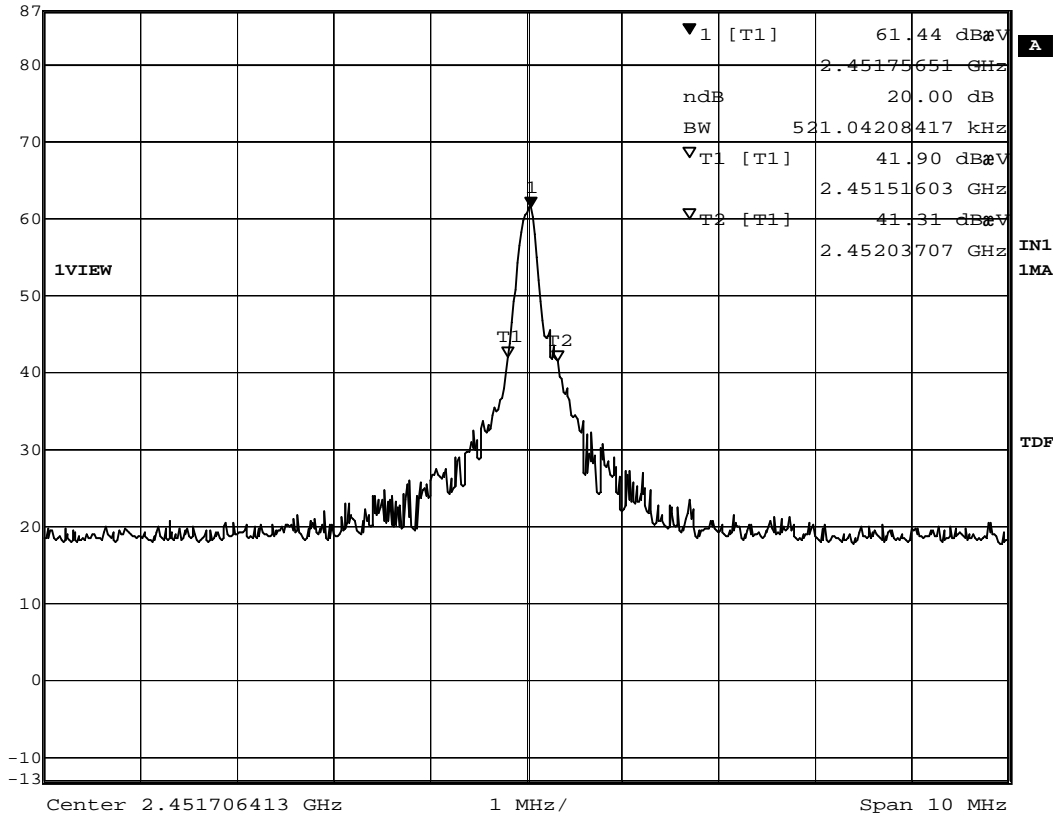
Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [kHz]
2451.8	521.04

(Data Rate: 20k)

20dB Bandwidth of Fundamental Emission

Marker 1 [T1 ndB]	RBW	RF Att	0 dB
Ref Lvl	ndB	20.00 dB	VBW 300 kHz
87 dB μ V	BW 521.04208417 kHz	SWT 5 ms	Unit dB μ V



Date: 8.JUN.2011 09:43:22

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STC Test Report

Date : 2011-04-06

Page 17 of 29

No. : HM166381

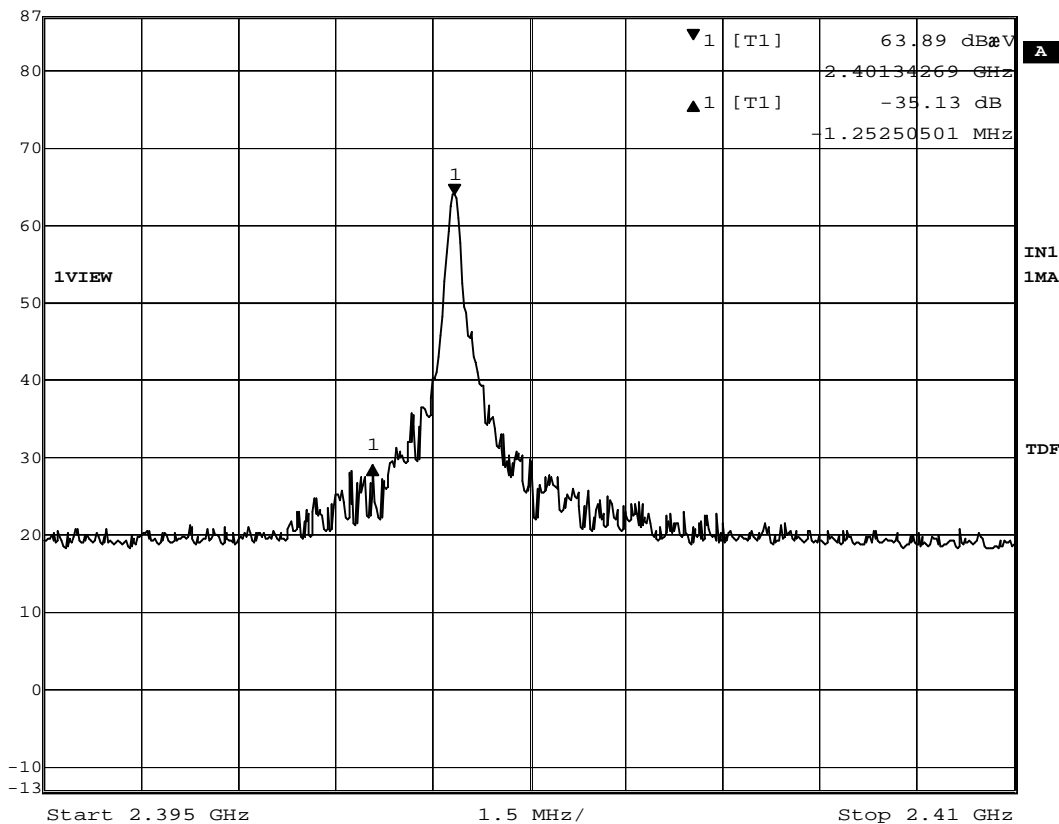
Band Edge Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
2401.3 – Lowest Fundamental	35.1

(Data Rate: 20k)

35.1dB Reduction at Lower Band Edge

	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	-35.13 dB	VBW	300 kHz		
87 dB μ V	-1.25250501 MHz	SWT	5 ms	Unit	dB μ V



Date: 8.JUN.2011 09:34:31

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STC Test Report

Date : 2011-04-06

Page 18 of 29

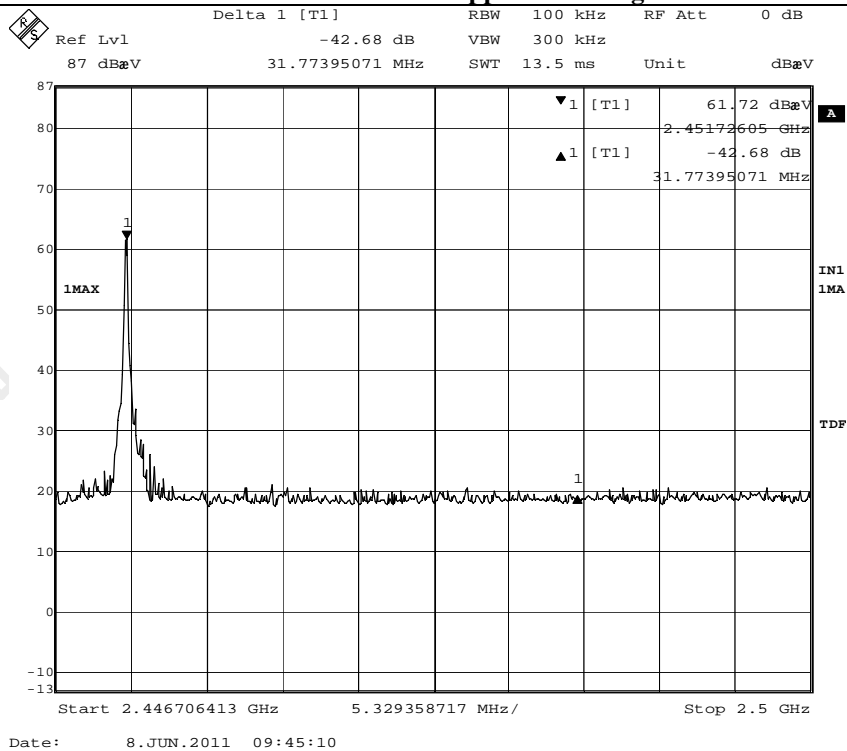
No. : HM166381

Band Edge Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
Highest Fundamental – 2451.7	42.7

(Data Rate: 20k)

42.7dB Reduction at Upper Band Edge



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STC Test Report

Date : 2011-04-06

Page 19 of 29

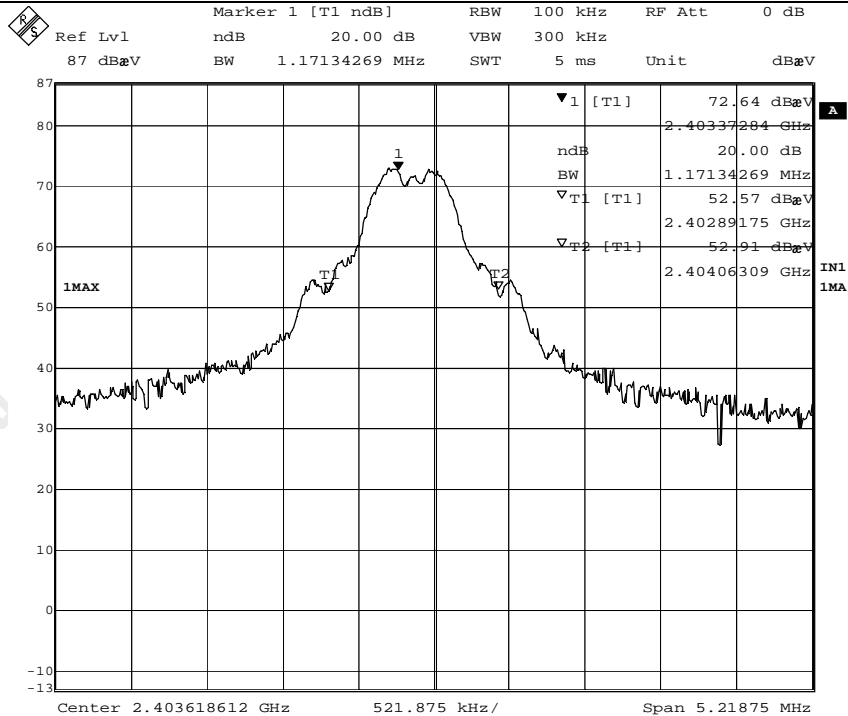
No. : HM166381

Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [MHz]
2403	1.17

(Data Rate: 500k)

20dB Bandwidth of Fundamental Emission



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STC Test Report

Date : 2011-04-06

Page 20 of 29

No. : HM166381

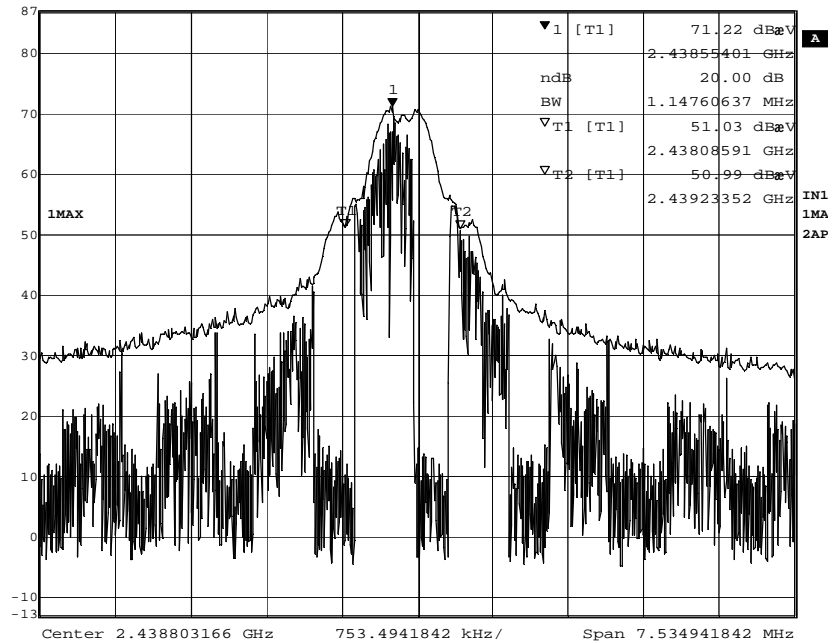
Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [MHz]
2438	1.15

(Data Rate: 500k)

20dB Bandwidth of Fundamental Emission

Ref Lvl	Marker 1 [T1 ndB]	RBW	100 kHz	RF Att	0 dB
87 dB μ V	ndB	20.00 dB	VBW	300 kHz	
	BW	1.14760637 MHz	SWT	5 ms	Unit
					dB μ V



Date: 22.MAR.2011 14:20:03

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STC Test Report

Date : 2011-04-06

Page 21 of 29

No. : HM166381

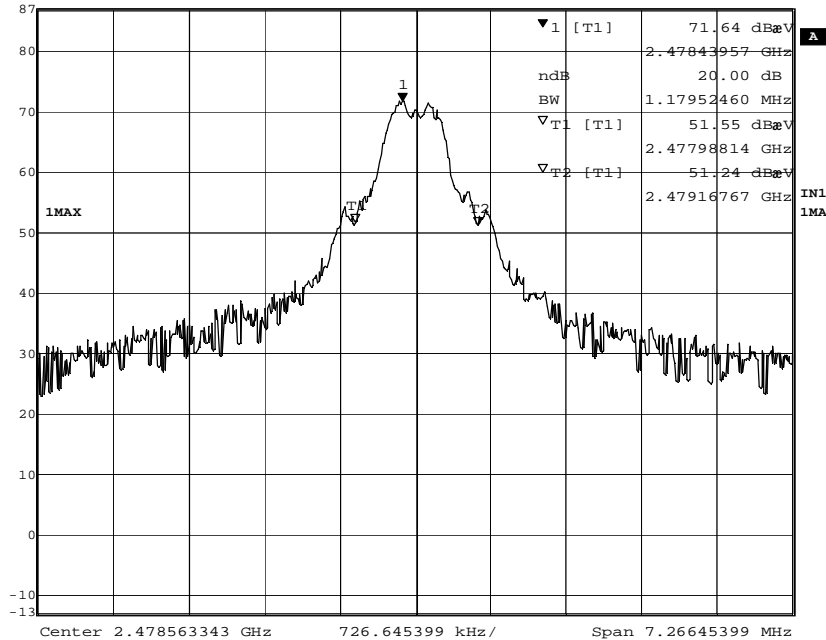
Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [MHz]
2478	1.18

(Data Rate: 500k)

20dB Bandwidth of Fundamental Emission

Ref Lvl	Marker 1 [T1 ndB]	RBW	100 kHz	RF Att	0 dB	
87 dB μ V	ndB	20.00 dB	VBW	300 kHz		
	BW	1.17952460 MHz	SWT	5 ms	Unit	dB μ V



Date: 22.MAR.2011 14:14:58

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STC Test Report

Date : 2011-04-06

Page 22 of 29

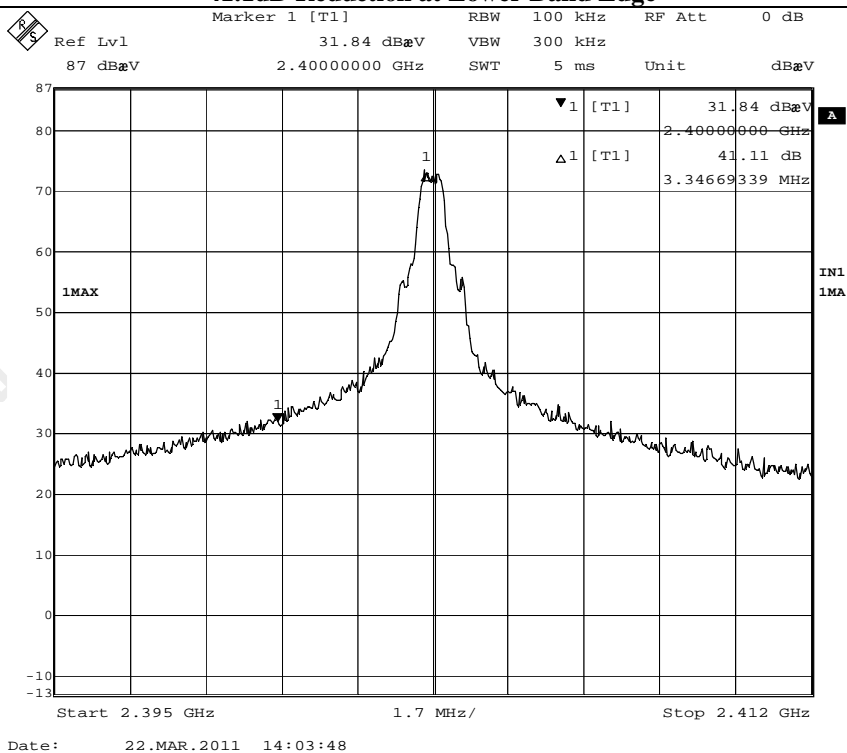
No. : HM166381

Band Edge Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
2400.0 – Lowest Fundamental	41.1

(Data Rate: 500k)

41.1dB Reduction at Lower Band Edge



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STC Test Report

Date : 2011-04-06

Page 23 of 29

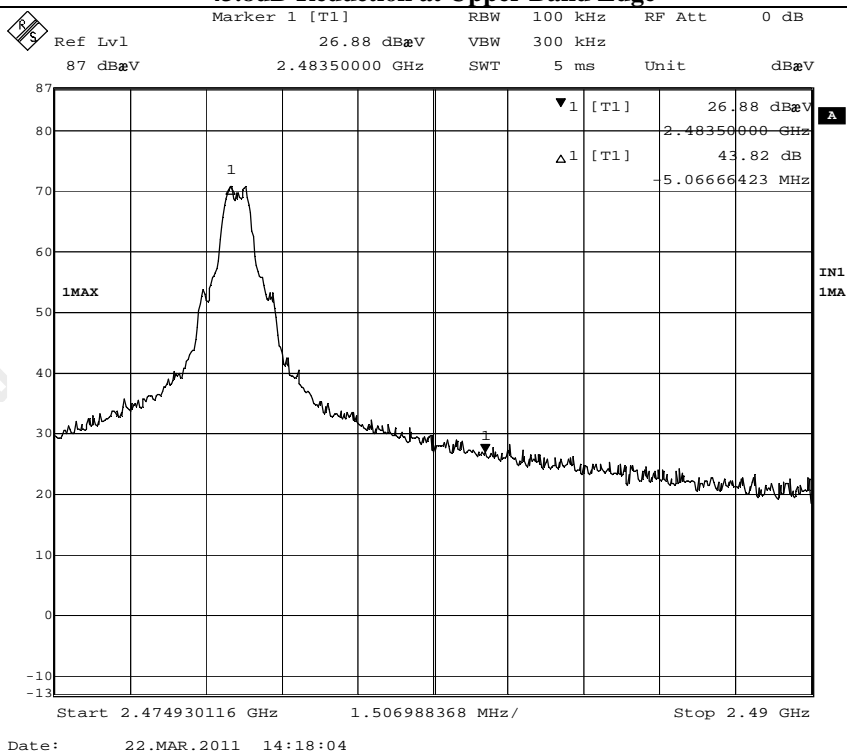
No. : HM166381

Band Edge Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
Highest Fundamental – 2483.5	43.8

(Data Rate: 500k)

43.8dB Reduction at Upper Band Edge



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STC Test Report

Date : 2011-04-06

Page 24 of 29

No. : HM166381

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [$\mu\text{V/m}$]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode (Data Rate: 20k) (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the FCC Limits

Results of Tx mode (Data Rate: 20k) (30MHz – 25GHz): PASS

Please refer to the following table for result details

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @ 3m $\text{dB}\mu\text{V/m}$	Limit @ 3m $\text{dB}\mu\text{V/m}$	Level @ 3m $\mu\text{V/m}$	Limit @ 3m $\mu\text{V/m}$
30.6	Horizontal	18.5	40.0	8.4	100
84.8	Horizontal	9.4	40.0	3.0	200
212.2	Horizontal	12.3	43.5	4.1	200
570.2	Horizontal	21.6	46.0	12.0	200
798.1	Horizontal	25.0	46.0	17.8	200
959.6	Horizontal	27.3	46.0	23.2	200

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 25 of 29

No. : HM166381

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [$\mu\text{V/m}$]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx Mode (Data Rate: 500k) (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the FCC Limits

Results of Tx mode (Data Rate: 500k) (30MHz – 25GHz): PASS

Please refer to the following table for result details

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @ 3m dB $\mu\text{V/m}$	Limit @ 3m dB $\mu\text{V/m}$	Level @ 3m $\mu\text{V/m}$	Limit @ 3m $\mu\text{V/m}$
30.6	Horizontal	18.5	40.0	8.4	100
84.8	Horizontal	9.4	40.0	3.0	200
212.2	Horizontal	12.3	43.5	4.1	200
570.2	Horizontal	21.6	46.0	12.0	200
798.1	Horizontal	25.0	46.0	17.8	200
959.6	Horizontal	27.3	46.0	23.2	200

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 26 of 29

No. : HM166381

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [$\mu\text{V/m}$]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Rx Mode (9kHz – 25GHz): PASS

Emissions detected are more than 20 dB below the FCC Limits

Results of Rx mode (30MHz – 25GHz): PASS

Please refer to the following table for result details

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @ 3m dB $\mu\text{V/m}$	Limit @ 3m dB $\mu\text{V/m}$	Level @ 3m $\mu\text{V/m}$	Limit @ 3m $\mu\text{V/m}$
30.6	Horizontal	18.5	40.0	8.4	100
84.8	Horizontal	9.4	40.0	3.0	200
212.2	Horizontal	12.3	43.5	4.1	200
570.2	Horizontal	21.6	46.0	12.0	200
798.1	Horizontal	25.0	46.0	17.8	200
959.6	Horizontal	27.3	46.0	23.2	200

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2011-04-06

Page 27 of 29

No. : HM166381

Appendix A

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM020	HORN ANTENNA	EMCO	3115	4032	2009/09/02	2011/09/02
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-Linggren	FACT-3	--	2010/10/25	2011/10/25
EM174	BICONILOG ANTENNA	EMCO	3142B	1671	2010/02/09	2012/02/09
EM194	BICONILOG ANTENNA	EMCO	3142B	1795	2010/10/06	2012/10/06
EM229	EMI Test Receiver	R&S	ESIB40	100248	2010/11/02	2011/11/02
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2009/09/07	2011/09/07

Remarks:-

CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined

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Page 28 of 29

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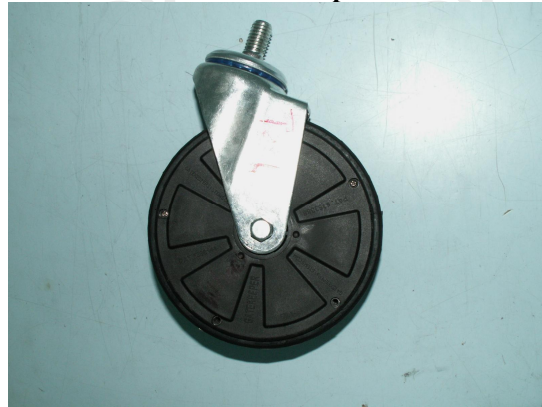
Appendix B

Photographs of EUT

Front View of the product



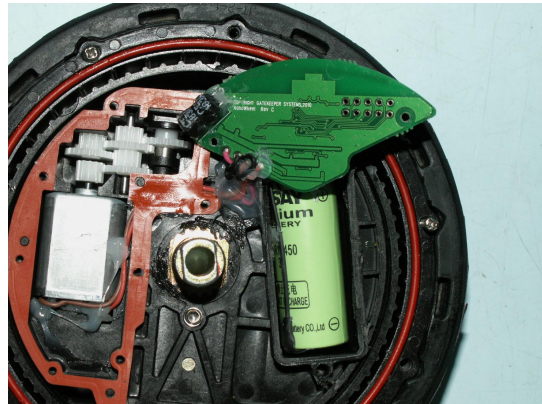
Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



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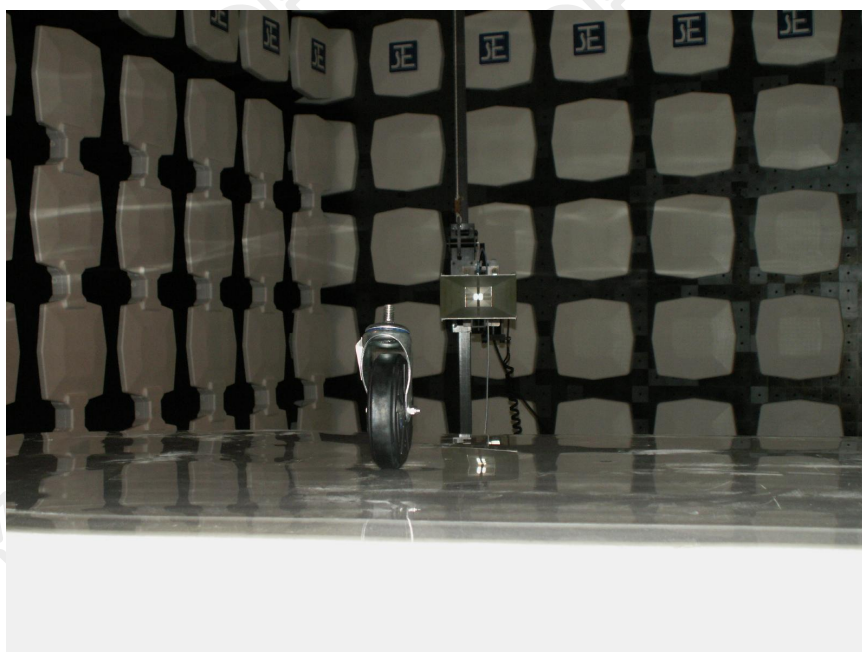
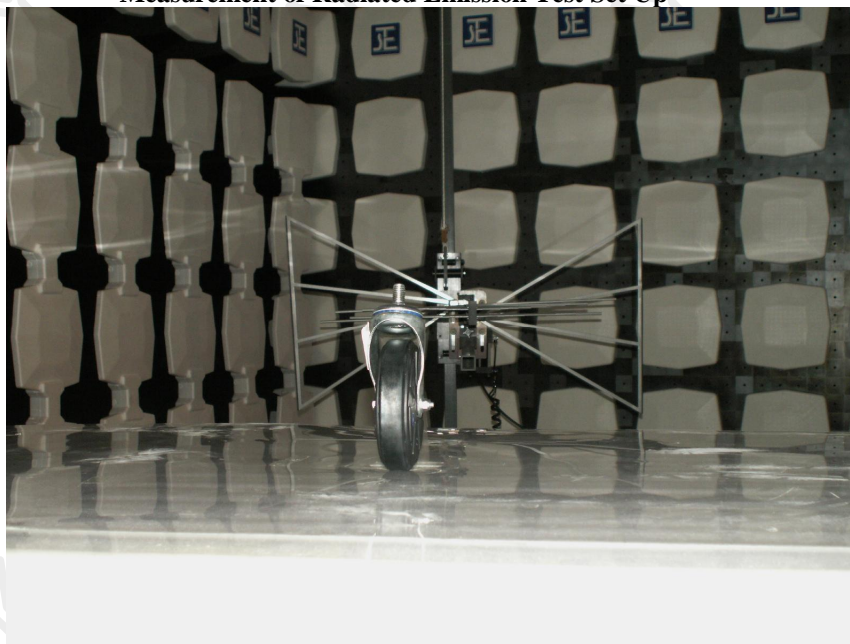
Date : 2011-04-06

Page 29 of 29

No. : HM166381

Photographs of EUT

Measurement of Radiated Emission Test Set Up



***** End of Test Report *****

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