



**BUREAU
VERITAS**

TEST REPORT No: (5211)075-0174(A)

TEST REPORT

To:	SILVERLIT TOYS MANUFACTORY LIMITED	To:	-
Attn:	Mr. Edmond Chan	Attn:	-
Address:	17 th Floor World Trade Centre, 280 Gloucester Road, Cause Bay, Hong Kong	Address:	-
Fax:	28348797	Fax:	-
E-mail:	edmond@silverlit.com	E-mail:	-
Folder No.:	ITM-12MA165MTHS-B-B		

Factory name:	--
Location:	--
Product:	2.4G Black Hawk Model No.: 84609

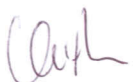
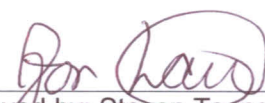


Sample No:	HK120329/023
Test date:	March 14, 2012 to March 30, 2012
Test Requested:	FCC Part 15 - 2011
Test Method:	ANSI C63.4 - 2003
FCC ID:	OYK-FCC84609

The results given in this report are related to the tested specimen of the described electrical apparatus.

CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C.

Authorized Signature:

	
Reviewed by: Keith Yeung	Approved by: Steven Tsang
Date: May 18, 2012	Date: May 18, 2012

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This report is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. Our report is limited to the test samples identified herein. The results set forth in this report are not necessarily indicative or representative of the statistical quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof. You shall have thirty days from receipt of this report to request additional testing of the samples or to notify us of any errors or omissions relating to our report, provided, however, such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



TEST REPORT No: (5211)075-0174(A)
Test Result Summary

EMISSION TEST			
Test requirement: FCC Part 15 - 2010			
Test Condition	Test Method	Test Result	
		Pass	Failed
Radiated Emission Test, 9kHz to 40GHz	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emission Test, 9kHz to 1GHz	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Report Revision & Sample Re-submit History:

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DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PC	DELL	DCSM	SC94JBX	CE & FCC DoC Approved
2	LCD MONITOR	DELL	E178WFPC	CN-0G349J64180-88T-5PYL-A00	CE & FCC DoC Approved
3	KEYBOARD	DELL	L100	CN0RH659658084B02NV	CE & FCC DoC Approved
4	MOUSE	DELL	MOA8BO	H0T00H92	CE & FCC DoC Approved
5	PRINTER	EPSON	B163A	ELPK004488	CE & FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Cable, Shielded, with core, 0.3m
2	VGA Cable, Shielded, with core, 0.8m
3	USB Cable, Shielded, with core, 1.5m
4	USB Cable, Shielded, without core, 1.5m
5	Parallel Cable, Shielded, without core, 1.5m

NOTE: All power cords of the above support units are non-shielded (1.8m).

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Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at :

BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

List of measuring equipment

Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	05-SEP-2012
LOOP ANTENNA	ETS-LINDGREN	6502	00102266	12-MAY-2012
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	01-AUG-2012
OPEN AREA TEST SITE	BVCPS	N/A	N/A	07-JUL-2012
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	25-OCT-2012
COAXIAL CABLE	SUHNER	N/A	N/A	18-SEP-2012

Conducted Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCS30	830986/030	05-JAN-2013
LISN	R&S	ENV216	100024	12-APR-2012

Remarks:-

N/A : Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

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Equipment Under Test [EUT]

Description of Sample:

Model Name: 2.4G Black Hawk
Model Number: 84609
Rating: Helicopter: 3.7Vd.c. ("rechargeable battery" x 1)

Description of EUT Operation:

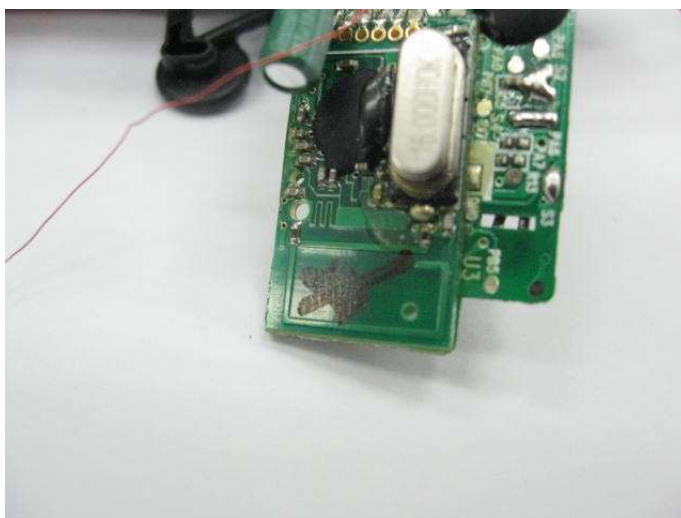
The Equipment Under Test (EUT) is a **SILVERLIT TOYS MANUFACTORY LIMITED** of Remote Control Transceiver. It is a 1 switch transceiver and operating at 2402MHz to 2477.5MHz. The lowest, middle and highest frequencies were tested and the results are shown in the report. The EUT transmit while buttons is being pressed at the remote controller, Modulation by IC, and type is FHSS.

The transmitter has different control:

1. ON/OFF switch – ON/OFF control

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. It is soldered on the PCB. The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.



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Test Results

Conducted Emissions (150kHz to 30MHz)

Test Requirement:	FCC Part 15 Section 15.107
Test Method:	ANSI C63.4
Test Limits:	Class B
Test Date(s):	2012-04-10
Temperature:	23.0 °C
Humidity:	55.0 %
Atmospheric Pressure:	100.7 kPa
Mode of Operation:	Charge mode
Tested Voltage:	117Va.c., 60Hz (computer)

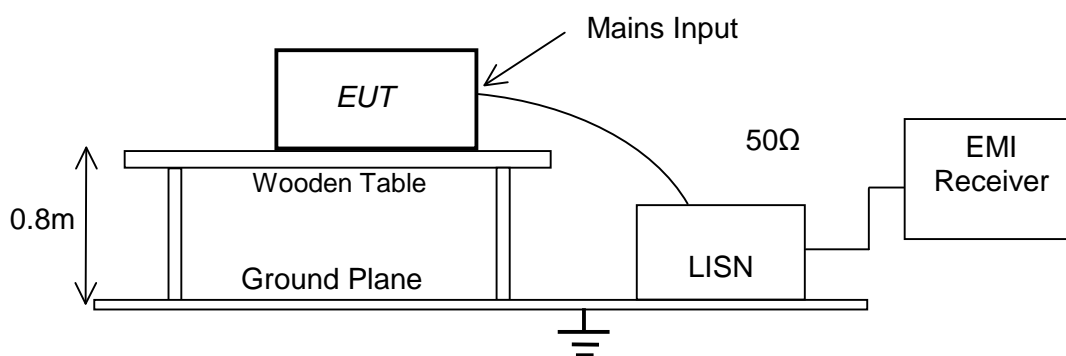
Test Method:

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2009. The EUT was setup as described in the procedures, and both lines were measured.

Initial measurements were performed in peak and average detection modes on the live and neutral line, any emissions recorded within 30dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Location: No. 603, 6/F., Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Shielding Room





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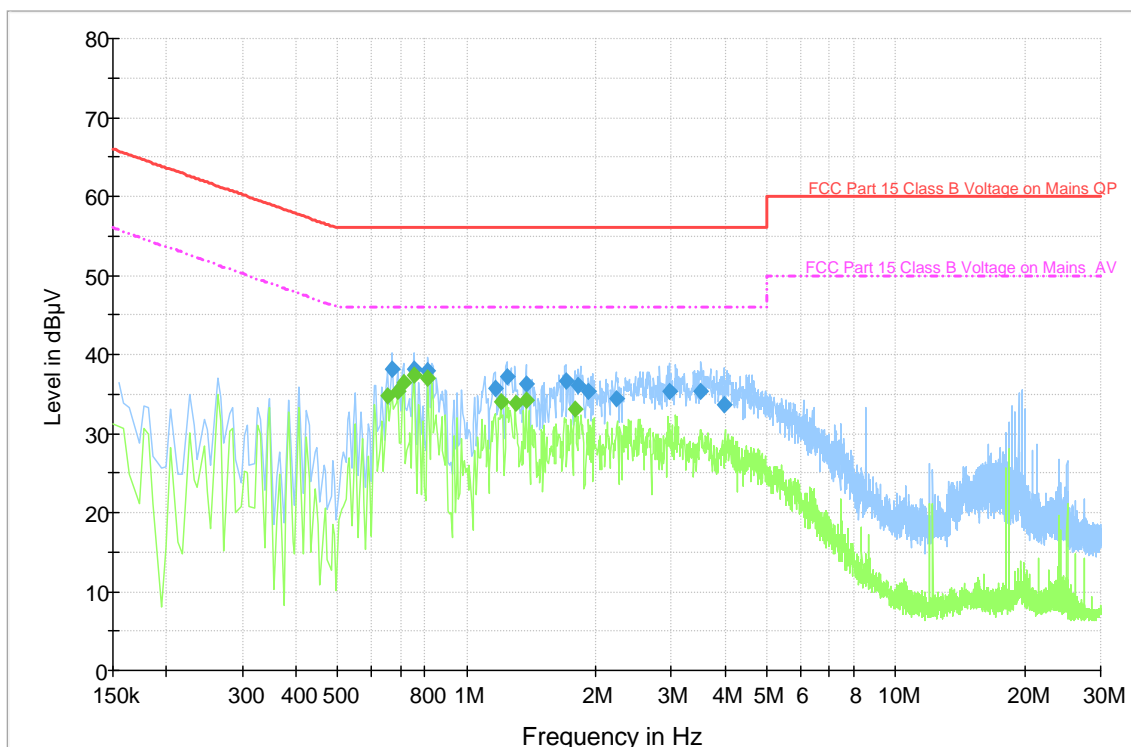
Measurement Data: Live

Test Result of (Charge mode): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

FCC Part 15 Class B Voltage





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Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following tables.

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.672000	38.1	9.000	L1	17.9	56.0
0.753000	38.0	9.000	L1	18.0	56.0
0.811500	37.9	9.000	L1	18.1	56.0
1.162500	35.7	9.000	L1	20.3	56.0
1.239000	37.2	9.000	L1	18.8	56.0
1.378500	36.2	9.000	L1	19.8	56.0
1.702500	36.6	9.000	L1	19.4	56.0
1.824000	36.2	9.000	L1	19.8	56.0
1.927500	35.3	9.000	L1	20.7	56.0
2.233500	34.4	9.000	L1	21.6	56.0
2.971500	35.3	9.000	L1	20.7	56.0
3.520500	35.2	9.000	L1	20.8	56.0
3.979500	33.6	9.000	L1	22.4	56.0

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.654000	34.8	9.000	L1	11.2	46.0
0.690000	35.3	9.000	L1	10.7	46.0
0.712500	36.5	9.000	L1	9.5	46.0
0.753000	37.3	9.000	L1	8.7	46.0
0.811500	37.0	9.000	L1	9.0	46.0
1.203000	34.0	9.000	L1	12.0	46.0
1.302000	33.8	9.000	L1	12.2	46.0
1.378500	34.3	9.000	L1	11.7	46.0
1.788000	33.2	9.000	L1	12.8	46.0



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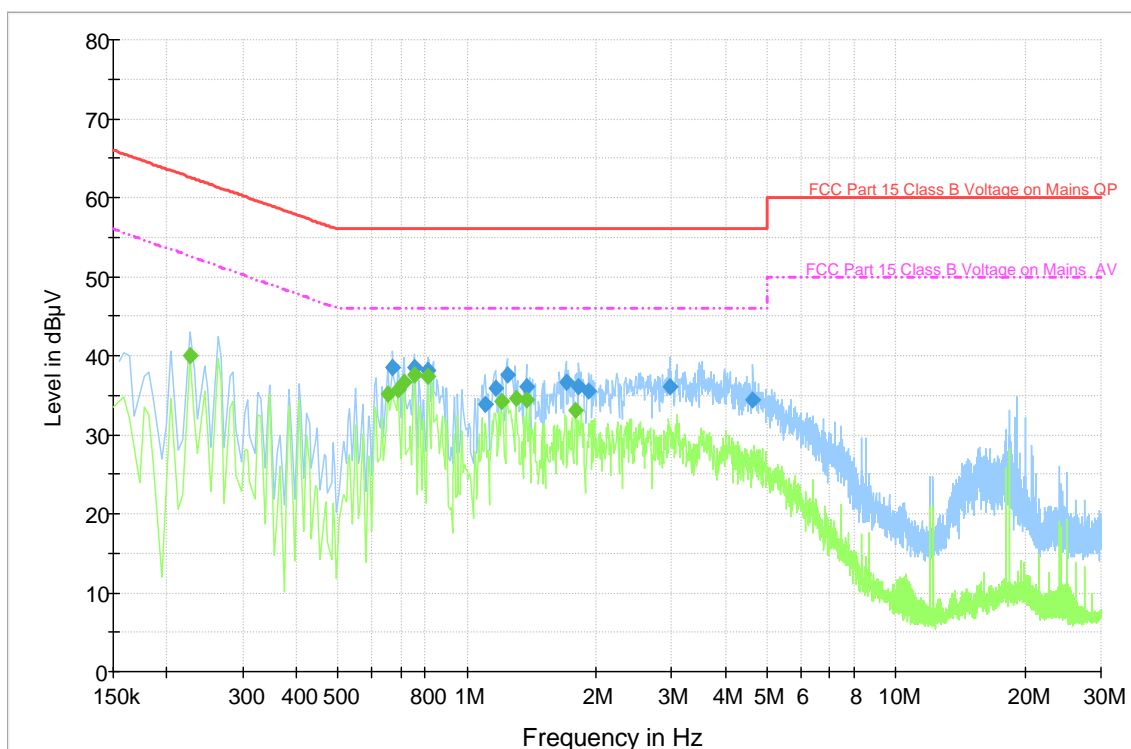
Measurement Data: Neutral

Test Result of (Charge mode): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

FCC Part 15 Class B Voltage



TEST REPORT No: (5211)075-0174(A)
Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following tables.

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.672000	38.5	9.000	N	17.5	56.0
0.757500	38.5	9.000	N	17.5	56.0
0.811500	38.0	9.000	N	18.0	56.0
1.099500	33.8	9.000	N	22.2	56.0
1.162500	35.9	9.000	N	20.1	56.0
1.239000	37.6	9.000	N	18.4	56.0
1.378500	36.0	9.000	N	20.0	56.0
1.702500	36.7	9.000	N	19.3	56.0
1.824000	36.1	9.000	N	19.9	56.0
1.927500	35.5	9.000	N	20.5	56.0
2.976000	36.0	9.000	N	20.0	56.0
4.645500	34.5	9.000	N	21.5	56.0

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.226500	40.0	9.000	N	12.6	52.6
0.654000	35.1	9.000	N	10.9	46.0
0.690000	35.8	9.000	N	10.2	46.0
0.712500	36.7	9.000	N	9.3	46.0
0.753000	37.6	9.000	N	8.4	46.0
0.811500	37.3	9.000	N	8.7	46.0
1.203000	34.3	9.000	N	11.7	46.0
1.302000	34.7	9.000	N	11.3	46.0
1.378500	34.5	9.000	N	11.5	46.0
1.788000	33.2	9.000	N	12.8	46.0

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Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.249
 Test Method: ANSI C63.4
 Test Date(s): 2012-03-30
 Temperature: 22.0 °C
 Humidity: 63.0 %
 Atmospheric Pressure: 100.5 kPa
 Mode of Operation: Transmission mode
 Tested Voltage: Helicopter: 3.7Vd.c. ("rechargeable battery" x 1)

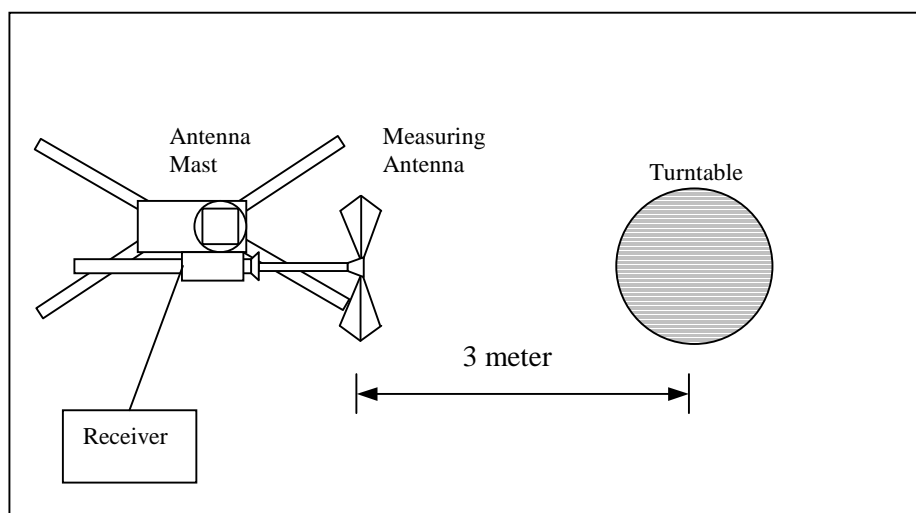
Test Procedure:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. 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, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site





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

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission (Average) [mV/m]	Field Strength of Harmonics Emission (Average) [μV/m]
2400-2483.5	50	500

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2402.00	H	-5.2	70.5	114.0	-43.5
2402.00	V	-5.2	74.7	114.0	-39.3

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2402.00	H	-5.2	**54.0	94.0	-40.0
2402.00	V	-5.2	**58.2	94.0	-35.8

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\text{Log}(0.15) = -16.5\text{dB}$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz



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Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2440.00	H	-4.6	71.4	114.0	-42.6
2440.00	V	-4.6	72.2	114.0	-41.8

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2440.00	H	-4.6	**54.9	94.0	-39.1
2440.00	V	-4.6	**55.7	94.0	-38.3

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2477.50	H	-4.3	71.3	114.0	-42.7
2477.50	V	-4.3	75.0	114.0	-39.0

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2477.50	H	-4.3	**54.8	94.0	-39.2
2477.50	V	-4.3	**58.5	94.0	-35.5

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\text{Log}(0.15) = -16.5\text{dB}$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



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Radiated Emissions (Spurious Emission)

Test Requirement: FCC Part 15 Section 15.249
 Test Method: ANSI C63.4
 Test Date(s): 2012-03-14
 Temperature: 20.0 °C
 Humidity: 71.0 %
 Atmospheric Pressure: 100.6 kPa
 Mode of Operation: Transmission mode
 Tested Voltage: Helicopter: 3.7Vd.c. ("rechargeable battery" x 1)

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4804.00	H	5.5	50.8	74.0	-23.2
7206.00	H	12.4	51.9	74.0	-22.1
9608.00	H	15.1	53.7	74.0	-20.3
12010.00	H	17.5	51.9	74.0	-22.1
14412.00	H	22.1	52.8	74.0	-21.2
16814.00	H	30.8	58.3	74.0	-15.7
19216.00	H	31.8	59.0	74.0	-15.0
21618.00	H	32.3	54.3	74.0	-19.7
24020.00	H	33.7	54.6	74.0	-19.4
26422.00	H	34.6	57.1	74.0	-16.9

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
 VBW = 1MHz



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4804.00	V	5.5	51.9	74.0	-22.1
7206.00	V	12.4	52.3	74.0	-21.7
9608.00	V	15.1	53.6	74.0	-20.4
12010.00	V	17.5	52.7	74.0	-21.3
14412.00	V	22.1	50.9	74.0	-23.1
16814.00	V	30.8	56.9	74.0	-17.1
19216.00	V	31.8	58.6	74.0	-15.4
21618.00	V	32.3	52.7	74.0	-21.3
24020.00	V	33.7	54.9	74.0	-19.1
26422.00	V	34.6	56.9	74.0	-17.1

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Transmission mode, Lowest frequency): **PASS**

Detection mode: **#Average**

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4804.00	H	5.5	**34.3	54.0	-19.7
7206.00	H	12.4	**35.4	54.0	-18.6
9608.00	H	15.1	**37.2	54.0	-16.8
12010.00	H	17.5	**35.4	54.0	-18.6
14412.00	H	22.1	**36.3	54.0	-17.7
16814.00	H	30.8	**41.8	54.0	-12.2
19216.00	H	31.8	**42.5	54.0	-11.5
21618.00	H	32.3	**37.8	54.0	-16.2
24020.00	H	33.7	**38.1	54.0	-15.9
26422.00	H	34.6	**40.6	54.0	-13.4

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4804.00	V	5.5	**35.4	54.0	-18.6
7206.00	V	12.4	**35.8	54.0	-18.2
9608.00	V	15.1	**37.1	54.0	-16.9
12010.00	V	17.5	**36.2	54.0	-17.8
14412.00	V	22.1	**34.4	54.0	-19.6
16814.00	V	30.8	**40.4	54.0	-13.6
19216.00	V	31.8	**42.1	54.0	-11.9
21618.00	V	32.3	**36.2	54.0	-17.8
24020.00	V	33.7	**38.4	54.0	-15.6
26422.00	V	34.6	**40.4	54.0	-13.6

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\text{Log}(0.15) = -16.5\text{dB}$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz

TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4880.00	H	5.7	48.4	74.0	-25.6
7320.00	H	13.9	54.6	74.0	-19.4
9760.00	H	14.0	52.9	74.0	-21.1
12200.00	H	18.6	53.2	74.0	-20.8
14640.00	H	23.2	51.7	74.0	-22.3
17080.00	H	31.2	58.7	74.0	-15.3
19520.00	H	32.0	57.3	74.0	-16.7
21960.00	H	33.5	54.5	74.0	-19.5
24400.00	H	34.1	55.3	74.0	-18.7
26840.00	H	35.2	57.4	74.0	-16.6

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB \square V/m)	Limit at 3m (dB \square V/m)	Margin (dB)
4880.00	V	5.7	45.3	74.0	-28.7
7320.00	V	13.9	56.2	74.0	-17.8
9760.00	V	14.0	53.8	74.0	-20.2
12200.00	V	18.6	52.8	74.0	-21.2
14640.00	V	23.2	51.4	74.0	-22.6
17080.00	V	31.2	58.3	74.0	-15.7
19520.00	V	32.0	57.4	74.0	-16.6
21960.00	V	33.5	53.9	74.0	-20.1
24400.00	V	34.1	54.2	74.0	-19.8
26840.00	V	35.2	58.0	74.0	-16.0

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: #Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4880.00	H	5.7	**31.9	54.0	-22.1
7320.00	H	13.9	**38.1	54.0	-15.9
9760.00	H	14.0	**36.4	54.0	-17.6
12200.00	H	18.6	**36.7	54.0	-17.3
14640.00	H	23.2	**35.2	54.0	-18.8
17080.00	H	31.2	**42.2	54.0	-11.8
19520.00	H	32.0	**40.8	54.0	-13.2
21960.00	H	33.5	**38.0	54.0	-16.0
24400.00	H	34.1	**38.8	54.0	-15.2
26840.00	H	35.2	**40.9	54.0	-13.1

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4880.00	V	5.7	**28.8	54.0	-25.2
7320.00	V	13.9	**39.7	54.0	-14.3
9760.00	V	14.0	**37.3	54.0	31.9
12200.00	V	18.6	**36.3	54.0	-17.7
14640.00	V	23.2	**34.9	54.0	-19.1
17080.00	V	31.2	**41.8	54.0	-12.2
19520.00	V	32.0	**40.9	54.0	-13.1
21960.00	V	33.5	**37.4	54.0	-16.6
24400.00	V	34.1	**37.7	54.0	-16.3
26840.00	V	35.2	**41.5	54.0	-12.5

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

** Duty Cycle Correction = $20\log(0.15) = -16.5\text{dB}$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4955.00	H	5.7	49.5	74.0	-24.5
7432.50	H	14.7	57.0	74.0	-17.0
9910.00	H	12.9	52.9	74.0	-21.1
12387.50	H	19.5	53.4	74.0	-20.6
14865.00	H	25.1	55.2	74.0	-18.8
17342.50	H	33.4	59.6	74.0	-14.4
19820.00	H	34.7	62.0	74.0	-12.0
22297.50	H	35.6	56.1	74.0	-17.9
24775.00	H	36.8	56.9	74.0	-17.1
27252.50	H	37.5	60.6	74.0	-13.4

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4955.00	V	5.7	48.0	74.0	-26.0
7432.50	V	14.7	55.7	74.0	-18.3
9910.00	V	12.9	51.8	74.0	-22.2
12387.50	V	19.5	53.8	74.0	-20.2
14865.00	V	25.1	57.0	74.0	-17.0
17342.50	V	33.4	59.0	74.0	-15.0
19820.00	V	34.7	60.6	74.0	-13.4
22297.50	V	35.6	55.8	74.0	-18.2
24775.00	V	36.8	57.4	74.0	-16.6
27252.50	V	37.5	60.6	74.0	-13.4

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: #Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4955.00	H	5.7	**33.0	54.0	-21.0
7432.50	H	14.7	**40.5	54.0	-13.5
9910.00	H	12.9	**36.4	54.0	-17.6
12387.50	H	19.5	**36.9	54.0	-17.1
14865.00	H	25.1	**38.7	54.0	-15.3
17342.50	H	33.4	**43.1	54.0	-10.9
19820.00	H	34.7	**45.5	54.0	-8.5
22297.50	H	35.6	**39.6	54.0	-14.4
24775.00	H	36.8	**40.4	54.0	-13.6
27252.50	H	37.5	**44.1	54.0	-9.9

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
4955.00	V	5.7	**31.5	54.0	-22.5
7432.50	V	14.7	**39.2	54.0	-14.8
9910.00	V	12.9	**35.3	54.0	-18.7
12387.50	V	19.5	**37.3	54.0	-16.7
14865.00	V	25.1	**40.5	54.0	-13.5
17342.50	V	33.4	**42.5	54.0	-11.5
19820.00	V	34.7	**44.1	54.0	-9.9
22297.50	V	35.6	**39.3	54.0	-14.7
24775.00	V	36.8	**40.9	54.0	-13.1
27252.50	V	37.5	**44.1	54.0	-9.9

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\text{Log}(0.15) = -16.5\text{dB}$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5211)075-0174(A)

Radiated Emissions (30MHz – 1GHz)

Test Requirement: FCC Part 15 Section 15.209
Test Method: ANSI C63.4
Test Date(s): 2012-03-30
Temperature: 22 °C
Humidity: 63.0 %
Atmospheric Pressure: 100.5 kPa
Mode of Operation: On mode and Charge mode
Tested Voltage: Helicopter: 3.7Vd.c. ("rechargeable battery" x 1) /
230Va.c., 50Hz (computer)

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [μ V/m]
1.705-30	300
30-88	100
88-216	150
216-960	200
Above960	500



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (On mode, battery operated): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
198.72	H	20.7	43.5	-22.8
220.76	H	26.6	46.0	-19.4
295.48	H	24.5	46.0	-21.5
332.44	H	23.7	46.0	-22.3
358.40	H	29.6	46.0	-16.4
381.64	H	28.5	46.0	-17.5

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
36.48	V	29.6	40.0	-10.4
55.84	V	26.2	40.0	-13.8
116.96	V	22.3	43.5	-21.2
227.00	V	24.1	46.0	-21.9
367.40	V	25.5	46.0	-20.5
462.64	V	27.6	46.0	-18.4

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz



TEST REPORT No: (5211)075-0174(A)

Test Result of (On mode, battery operated): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
1524.33	H	53.9	74.0	-20.1
1656.71	H	51.2	74.0	-22.8
2156.08	H	51.9	74.0	-22.1

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
1157.56	V	57.6	74.0	-16.4
1285.53	V	54.6	74.0	-19.4
1581.46	V	52.9	74.0	-21.1

Note: Field Strength includes Antenna Factor and Cable Loss.



TEST REPORT No: (5211)075-0174(A)

Test Result of (On mode, battery operated): PASS

Detection mode: Average

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
1524.33	H	32.9	54.0	-21.1
1656.71	H	32.8	54.0	-21.2
2156.08	H	32.9	54.0	-21.1

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
1157.56	V	33.0	54.0	-21.0
1285.53	V	32.8	54.0	-21.2
1581.46	V	32.7	54.0	-21.3

Note: Field Strength includes Antenna Factor and Cable Loss.



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Charge mode, battery operated): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
39.84	H	29.5	40.0	-10.5
64.76	H	25.6	40.0	-14.4
243.48	H	22.3	46.0	-23.7
330.96	H	24.5	46.0	-21.5
419.04	H	27.8	46.0	-18.2
562.44	H	30.1	46.0	-15.9

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
39.84	V	28.9	40.0	-11.1
64.76	V	26.2	40.0	-13.8
243.48	V	23.5	46.0	-22.5
330.96	V	24.1	46.0	-21.9
419.04	V	26.3	46.0	-19.7
562.44	V	29.9	46.0	-16.1

Note: Field Strength includes Antenna Factor and Cable Loss.



TEST REPORT No: (5211)075-0174(A)

Measurement Data

Test Result of (Charge mode, computer operated): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
144.00	H	24.8	43.5	-18.7
181.12	H	25.1	43.5	-18.4
192.00	H	26.2	43.5	-17.3
240.00	H	27.3	46.0	-18.7
249.00	H	28.4	46.0	-17.6
264.00	H	29.0	46.0	-17.0

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
144.00	V	25.6	43.5	-17.9
181.12	V	23.4	43.5	-20.1
192.00	V	25.1	43.5	-18.4
240.00	V	26.3	46.0	-19.7
249.00	V	27.9	46.0	-18.1
264.00	V	29.5	46.0	-16.5

Note: Field Strength includes Antenna Factor and Cable Loss.



TEST REPORT No: (5211)075-0174(A)

Frequency range of Fundamental Emission

Test Requirement: FCC 47 CFR 15.249
Test Method: ANSI C63.4:2003 (Section 13.1.7)
Test Date(s): 2012-03-14
Temperature: 28.0 °C
Humidity: 71.0 %
Atmospheric Pressure: 100.5 kPa
Mode of Operation: Transmission mode
Tested Voltage: Helicopter: 3.7Vd.c. ("rechargeable battery" x 1)

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

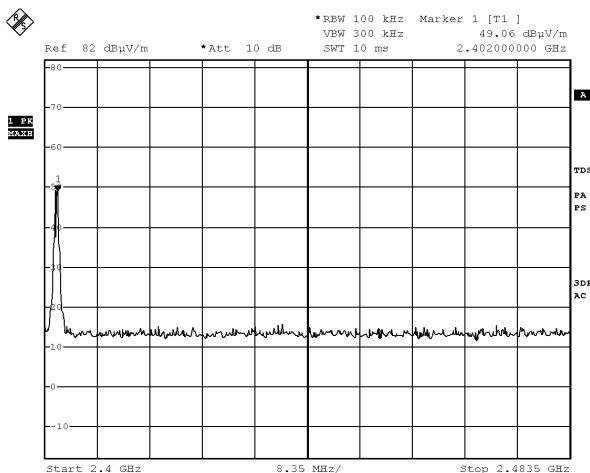
Limits for Frequency range of Fundamental Emission:

Frequency [MHz]	FCC Limits [MHz]
2402.00 – 2477.50	2400 – 2483.5

TEST REPORT No: (5211)075-0174(A)

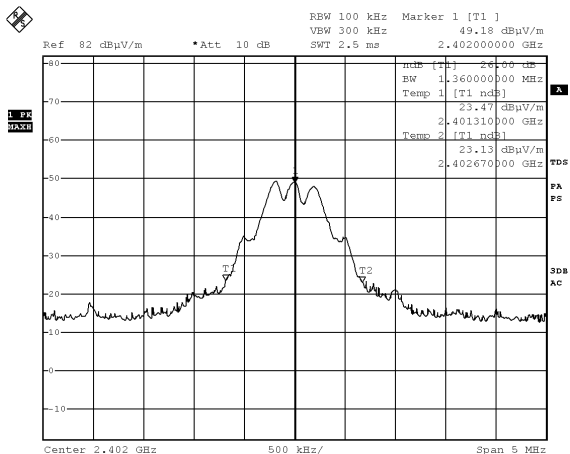
Measurement Data :

**Test Result of Frequency Range of Fundamental Emission: PASS
Lowest Frequency – 2402.00MHz**



Date: 14.MAR.2012 12:47:54

**Test Result of 26dB Bandwidth of Fundamental Emission: PASS
Lowest Frequency – 2402.00MHz**

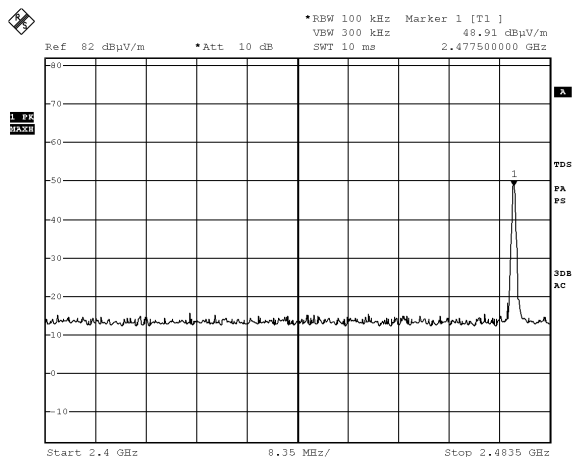


Date: 14.MAR.2012 12:47:16

TEST REPORT No: (5211)075-0174(A)

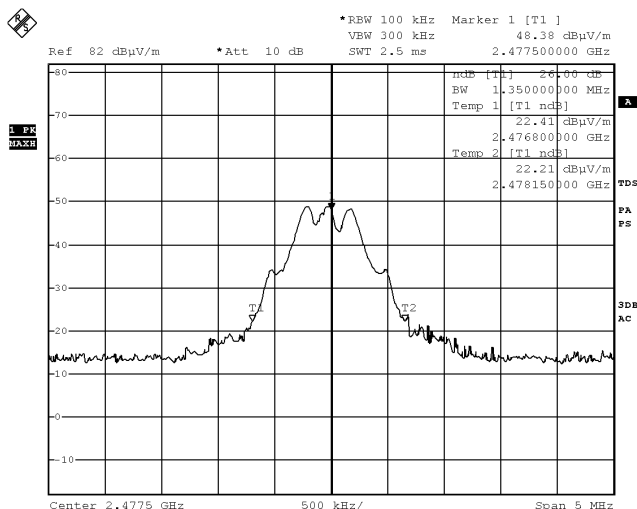
Measurement Data :

**Test Result of Frequency Range of Fundamental Emission: PASS
Highest Frequency – 2477.50MHz**



Date: 14.MAR.2012 12:54:24

**Test Result of 26dB Bandwidth of Fundamental Emission: PASS
Highest Frequency – 2477.50MHz**



Date: 14.MAR.2012 12:53:57



TEST REPORT No: (5211)075-0174(A)

Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (100msec) never exceeds a series of 25 pulses (0.6msec). Assuming any combination of short and long pulses maybe obtained due to encoding the worst case transmit duty cycle would be considered (25×0.6) per 100msec = 15% duty cycle.

Remarks:

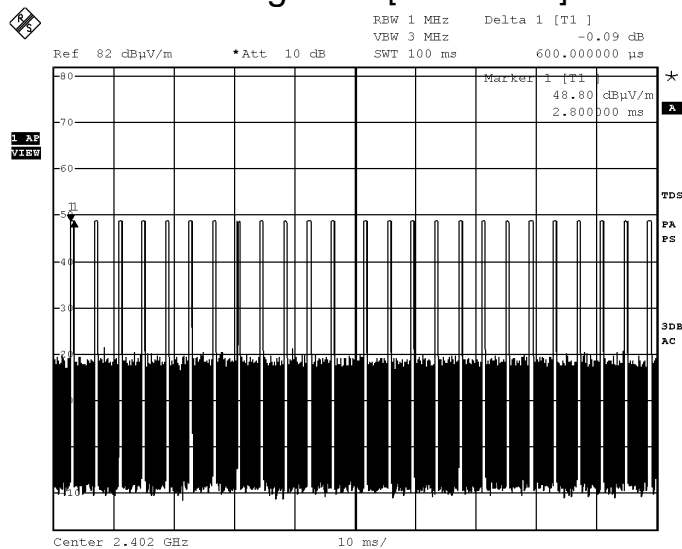
Duty Cycle Correction = $20\text{Log}(0.15) = -16.5\text{dB}$

The following figures [Figure A] show the characteristics of the pulse train for one of these functions.

TEST REPORT No: (5211)075-0174(A)

Measurement Data :

Figure A [Pulse Train]



Date: 14.MAR.2012 12:45:39

TEST REPORT No: (5211)075-0174(A)

Photographs of EUT

Front View of the product



Rear View of the product



Side View of the product



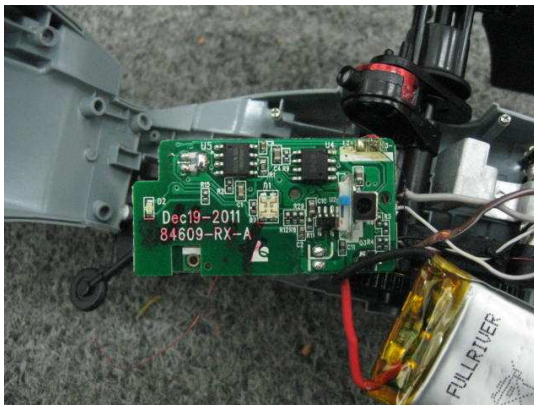
Side View of the product



Inner Circuit Top View



Inner Circuit Bottom View



TEST REPORT No: (5211)075-0174(A)

Inner Circuit Top View



Inner Circuit Bottom View



TEST REPORT No: (5211)075-0174(A)

Measurement of Radiated Emission Test Set Up



Measurement of Radiated Emission Test Set Up



TEST REPORT No: (5211)075-0174(A)

Measurement of Radiated Emission Test Set Up



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