



**FCC Part15, Subpart B
ICES-003**

TEST REPORT

For

TOY Receiver

MODEL NUMBER: 3705BL

FCC ID: G6D3705BL

REPORT NUMBER: 4788998165.1-2-1

ISSUE DATE: May 11, 2019

Prepared for

**NEW BRIGHT INDUSTRIAL CO., LTD
9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD, KOWLOON BAY,
KOWLOON, HONG KONG.**

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch

Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China

Tel: +86 769 22038881

Fax: +86 769 33244054

Website: www.ul.com

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.



Revision History

Rev.	Issue Date	Revisions	Revised By
V0	04/30/2019	Initial Issue	
V1	05/11/2019	remove the IC number	Gary Zhang



Summary of Test Results				
Standard	Test Item	Limit	Result	Remark
FCC Part15, Subpart B ICES-003 Issue 6 ANSI C63.4-2014	Conducted Disturbance	Class B	PASS	
	Radiated Disturbance below 1 GHz	Class B	PASS	
	Radiated Disturbance above 1 GHz	Class B	PASS	



CONTENTS

- 1. ATTESTATION OF TEST RESULTS.....5**
- 2. TEST METHODOLOGY.....6**
- 3. FACILITIES AND ACCREDITATION.....6**
- 4. CALIBRATION AND UNCERTAINTY7**
 - 4.1. *Measuring Instrument Calibration7*
 - 4.2. *Measurement Uncertainty.....7*
- 5. EQUIPMENT UNDER TEST8**
 - 5.1. *Description of EUT.....8*
 - 5.2. *Test Mode.....8*
 - 5.3. *EUT Accessory8*
 - 5.4. *Support Units or Accessories for System Test9*
- 6. MEASURING EQUIPMENT AND SOFTWARE USED.....10**
- 7. EMISSION TEST11**
 - 7.1. *Conducted Disturbance Measurement..... 11*
 - 7.1.1. *Limits of conducted disturbance voltage11*
 - 7.1.2. *Test Procedure11*
 - 7.1.3. *Test Setup12*
 - 7.1.4. *Test Environment.....12*
 - 7.1.5. *Test Mode.....12*
 - 7.1.6. *Test Results.....13*
 - 7.2. *Radiated Disturbance Measurement..... 15*
 - 7.2.1. *Limits of radiated disturbance measurement.....15*
 - 7.2.2. *Test Procedure16*
 - 7.2.3. *Test Setup16*
 - 7.2.4. *Test Environment.....17*
 - 7.2.5. *Test Mode.....17*
 - 7.2.6. *Test Results – below 1GHz.....18*
 - 7.2.7. *Test Results – above 1GHz22*
- END OF REPORT.....25**



1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: NEW BRIGHT INDUSTRIAL CO., LTD
Address: 9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD,
KOWLOON BAY, KOWLOON, HONG KONG.

Manufacturer Information

Company Name: NEW BRIGHT INDUSTRIAL CO., LTD
Address: 9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD,
KOWLOON BAY, KOWLOON, HONG KONG.

EUT Information

EUT Name: TOY Receiver
Model: 3705BL
Brand: /
Sample Status: Normal
Date of Tested: April 30, 2019

APPLICABLE STANDARDS	
STANDARDS	TEST RESULTS
FCC Part15, Subpart B ICES-003 Issue 6 ANSI C63.4-2014	PASS

Prepared By:

Engineer Project Associate

Checked By:

Laboratory Leader

Approved By:

Laboratory Manager



2. TEST METHODOLOGY

All tests were performed in accordance with the standard FCC Part15 Subpart B, ANSI C63.4-2014, and ICES-003 Issue 6.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules</p> <p>IC(Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011</p>
---------------------------	---

Note: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.



4. CALIBRATION AND UNCERTAINTY

4.1. Measuring Instrument Calibration

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports	0.009MHz ~ 0.15MHz	2	4.00
Conducted emissions from the AC mains power ports	0.15MHz ~ 30MHz	2	3.62
Radiated emissions	30MHz ~ 1GHz	2	4.00
Radiated emissions	1GHz ~ 18GHz	2	5.78

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



5. EQUIPMENT UNDER TEST

5.1. Description of EUT

EUT Name	TOY Receiver
Model	3705BL
Battery	DC 9.6V

5.2. Test Mode

Test Mode	Description
Mode 1	Charging
Mode 2	Running

5.3. EUT Accessory

Item	Accessory	Brand Name	Model Name	Description
1	Remote control	NEW BRIGHT	3705HBL	/
2	Charger	NEW BRIGHT	LITHIUM ION CHARGER	9.6V
3	Battery	NEW BRIGHT	/	9.6V



5.4. Support Units or Accessories for System Test

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.

Item	Equipment	Mfr/Brand	Model/Type No.	Specification	Series No.
/	/	/	/	/	/

The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Specification
/	/	/	/	/

**6. MEASURING EQUIPMENT AND SOFTWARE USED**

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Dec. 10, 2018	Dec. 10, 2019
Two-Line V-Network	R&S	ENV216	101983	Dec. 10, 2018	Dec. 10, 2019
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec. 10, 2018	Dec. 10, 2019
Software					
Description		Manufacturer	Name	Version	
Test Software for Conducted Emissions		Farad	EZ-EMC	Ver. UL-3A1	
Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec. 10, 2018	Dec. 10, 2019
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sept. 17, 2018	Sept. 17, 2021
Preamplifier	HP	8447D	2944A09099	Dec. 10, 2018	Dec. 10, 2019
EMI Measurement Receiver	R&S	ESR26	101377	Dec. 10, 2018	Dec. 10, 2019
Horn Antenna	TDK	HRN-0118	130939	Sept. 17, 2018	Sept. 17, 2021
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Dec. 10, 2018	Dec. 10, 2019
Software					
Description		Manufacturer	Name	Version	
Test Software for Radiated Emissions		Farad	EZ-EMC	Ver. UL-3A1	

7. EMISSION TEST

7.1. Conducted Disturbance Measurement

7.1.1. Limits of conducted disturbance voltage

FREQUENCY (MHz)	Class A (dB μ V)		Class B (dB μ V)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46*
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

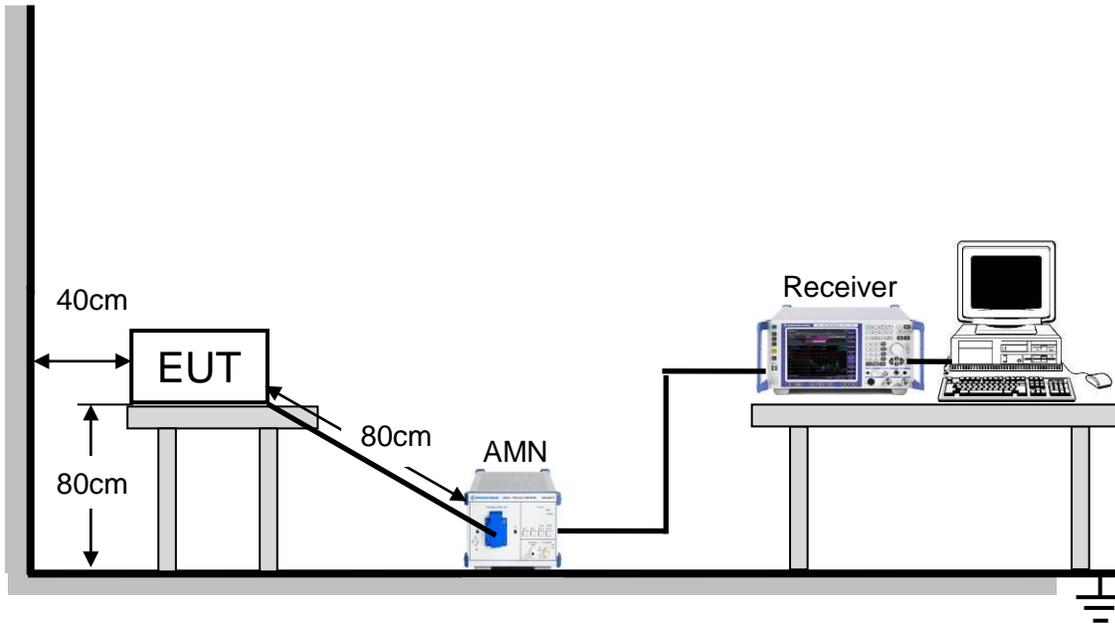
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

7.1.2. Test Procedure

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item: Photographs of Test Configuration.

7.1.3. Test Setup



For the actual test configuration, please refer to Appendix I: Photographs of Test Configuration.

7.1.4. Test Environment

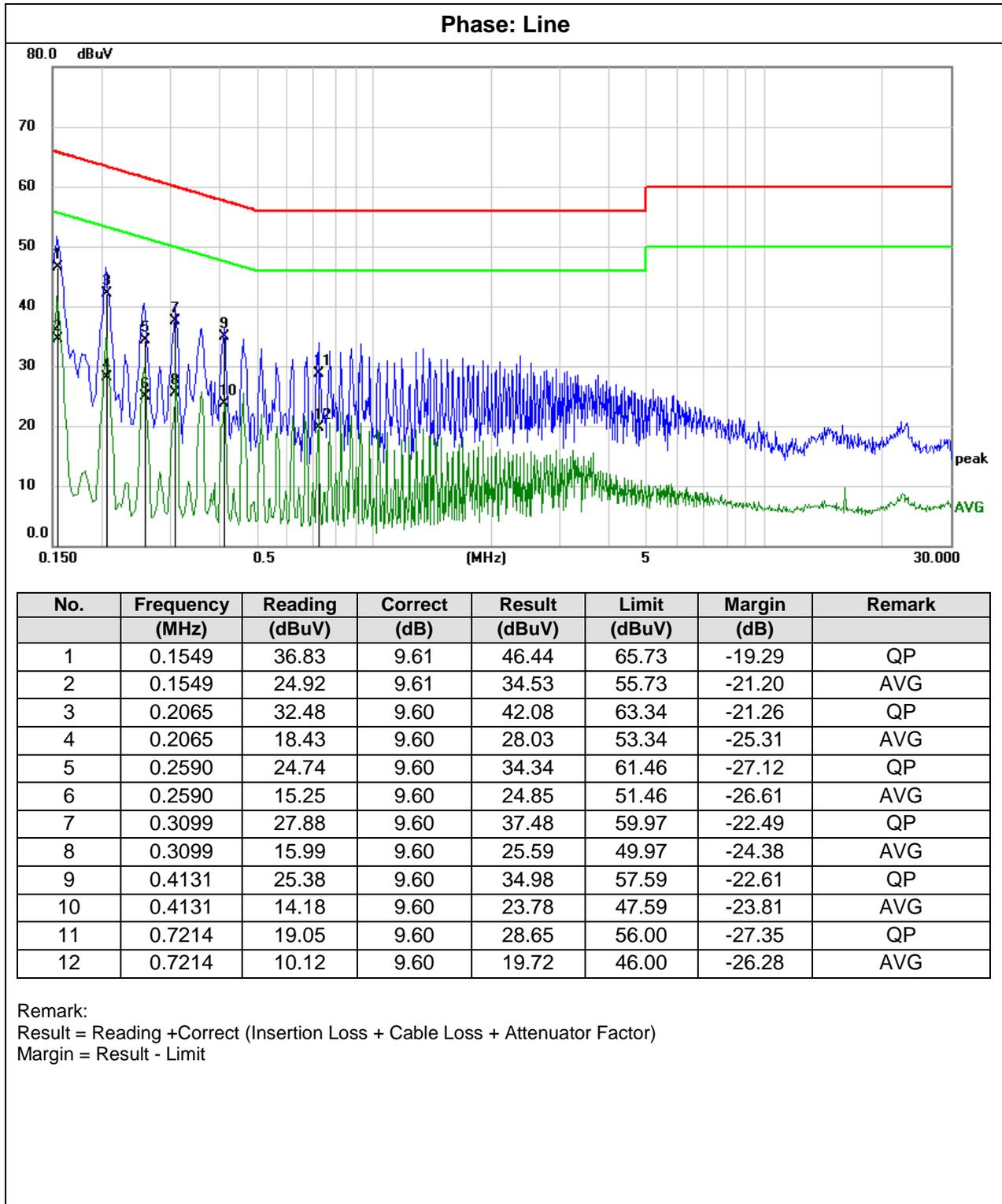
Temperature:	23°C
Humidity:	60%
ATM pressure:	101kPa

7.1.5. Test Mode

Pre-test Mode:	Mode 1
Final Test Mode:	Mode 1

**7.1.6. Test Results**

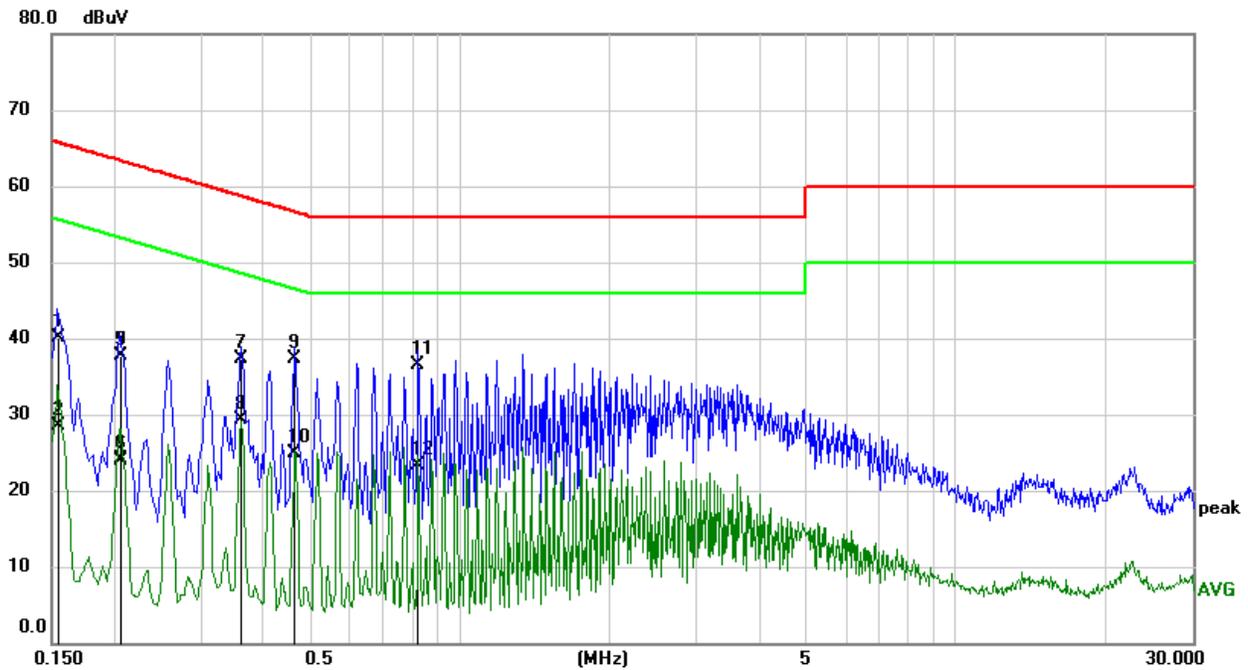
Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz





Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz

Phase: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1553	30.43	9.60	40.03	65.71	-25.68	QP
2	0.1553	18.83	9.60	28.43	55.71	-27.28	AVG
3	0.2065	28.05	9.60	37.65	63.34	-25.69	QP
4	0.2065	14.38	9.60	23.98	53.34	-29.36	AVG
5	0.2068	28.18	9.60	37.78	63.33	-25.55	QP
6	0.2068	14.42	9.60	24.02	53.33	-29.31	AVG
7	0.3613	27.70	9.60	37.30	58.70	-21.40	QP
8	0.3613	19.61	9.60	29.21	48.70	-19.49	AVG
9	0.4650	27.80	9.60	37.40	56.60	-19.20	QP
10	0.4650	15.32	9.60	24.92	46.60	-21.68	AVG
11	0.8260	26.84	9.60	36.44	56.00	-19.56	QP
12	0.8260	13.61	9.60	23.21	46.00	-22.79	AVG

Remark:

Result = Reading + Correct (Insertion Loss + Cable Loss + Attenuator Factor)

Margin = Result - Limit



7.2. Radiated Disturbance Measurement

7.2.1. Limits of radiated disturbance measurement

Below 1 GHz

Measurement Method and Applied Limits:

ANSI C63.4:

Frequency (MHz)	Class A		Class B
	Field strength (uV/m) (at 10m)	Field strength (dBuV/m) (at 3m)	Field strength (dBuV/m) (at 3m)
30 - 88	90	49.5	40
88 - 216	150	53.9	43.5
216 - 960	210	56.9	46
Above 960	300	60	54

Above 1 GHz

Measurement Method and Applied Limits:

ANSI C63.4:

Frequency (MHz)	Class A				Class B	
	(dBuV/m) (at 3m)		(dBuV/m) (at 10m)		(dBuV/m) (at 3m)	
	Peak	Average	Peak	Average	Peak	Average
Above 1000	80	60	69.5	49.5	74	54

Frequency Range of Radiated Disturbance Measurement

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

NOTE:

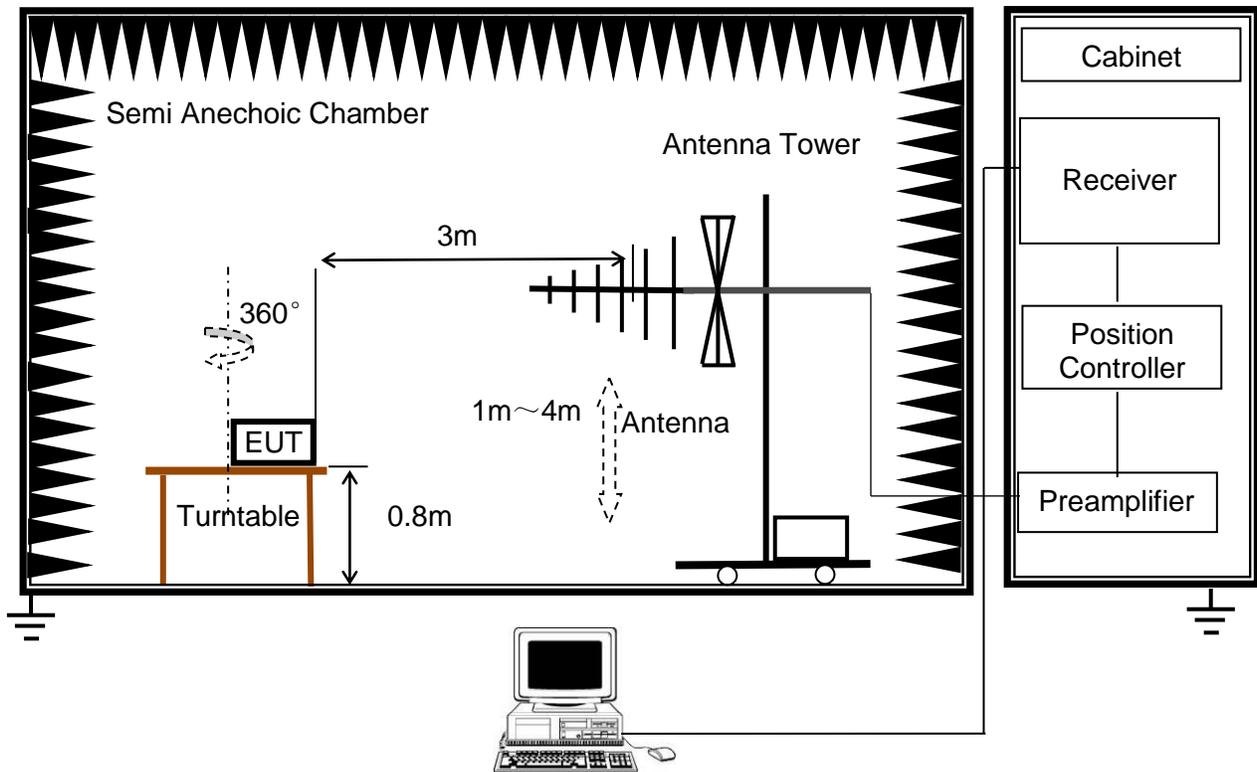
- (1) The limit for radiated test was performed according to FCC Part 15, Subpart B;
- (2) The tighter limit applies at the band edges;
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m),
3m Emission level = 10m Emission level + 20log(10m/3m);

7.2.2. Test Procedure

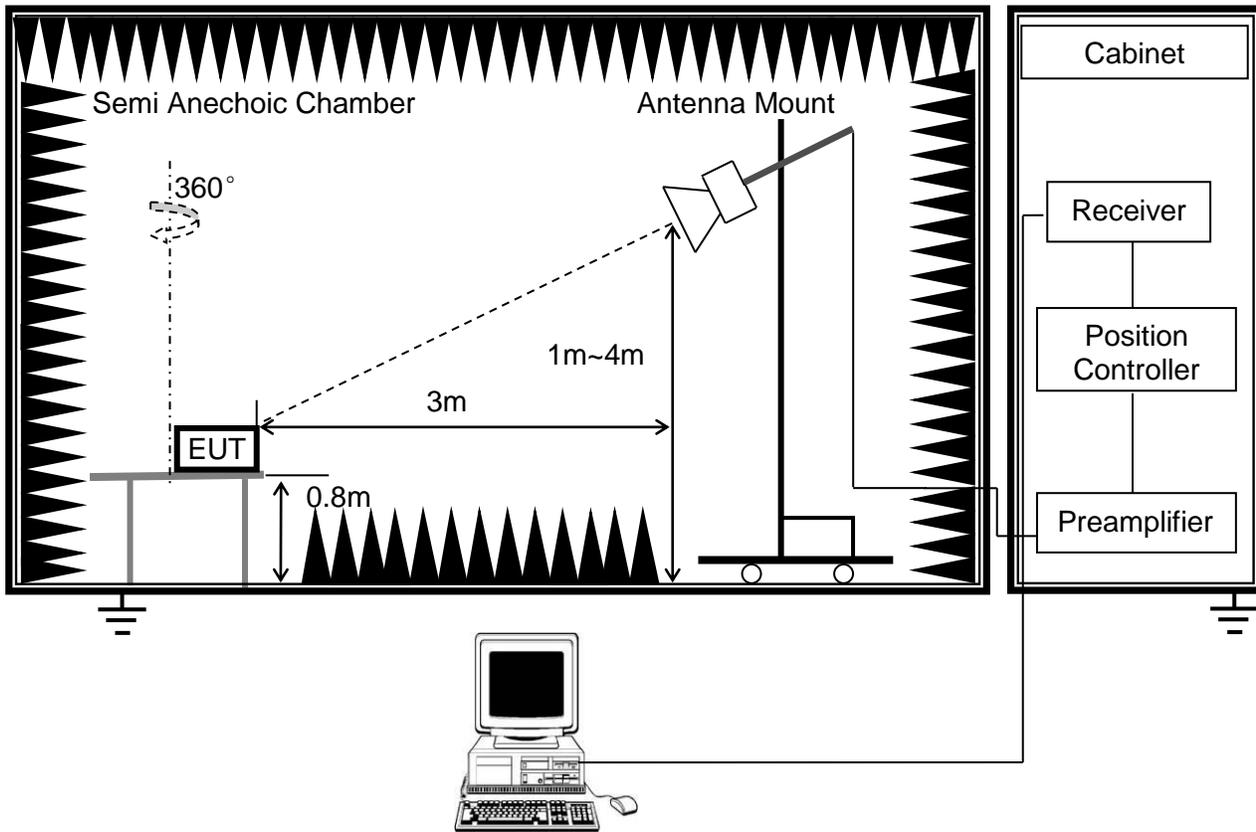
- a. The measuring distance of at 3m shall be used for measurements at frequency up to 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For the actual test configuration, please refer to the related Item:EUT Photographs of Test Configuration.

7.2.3. Test Setup

(a) Radiated Disturbance Test Set-Up Frequency 30MHz - 1GHz



(b) Radiated Disturbance Test Set-Up Frequency above 1GHz



For the actual test configuration, please refer to Appendix I: Photographs of Test Configuration.

7.2.4. Test Environment

Radiated Disturbance - below 1 GHz		Radiated Disturbance - above 1 GHz	
Temperature:	24°C	Temperature:	24.2°C
Humidity:	60%	Humidity:	57%
ATM pressure:	101kPa	ATM pressure:	101kPa

7.2.5. Test Mode

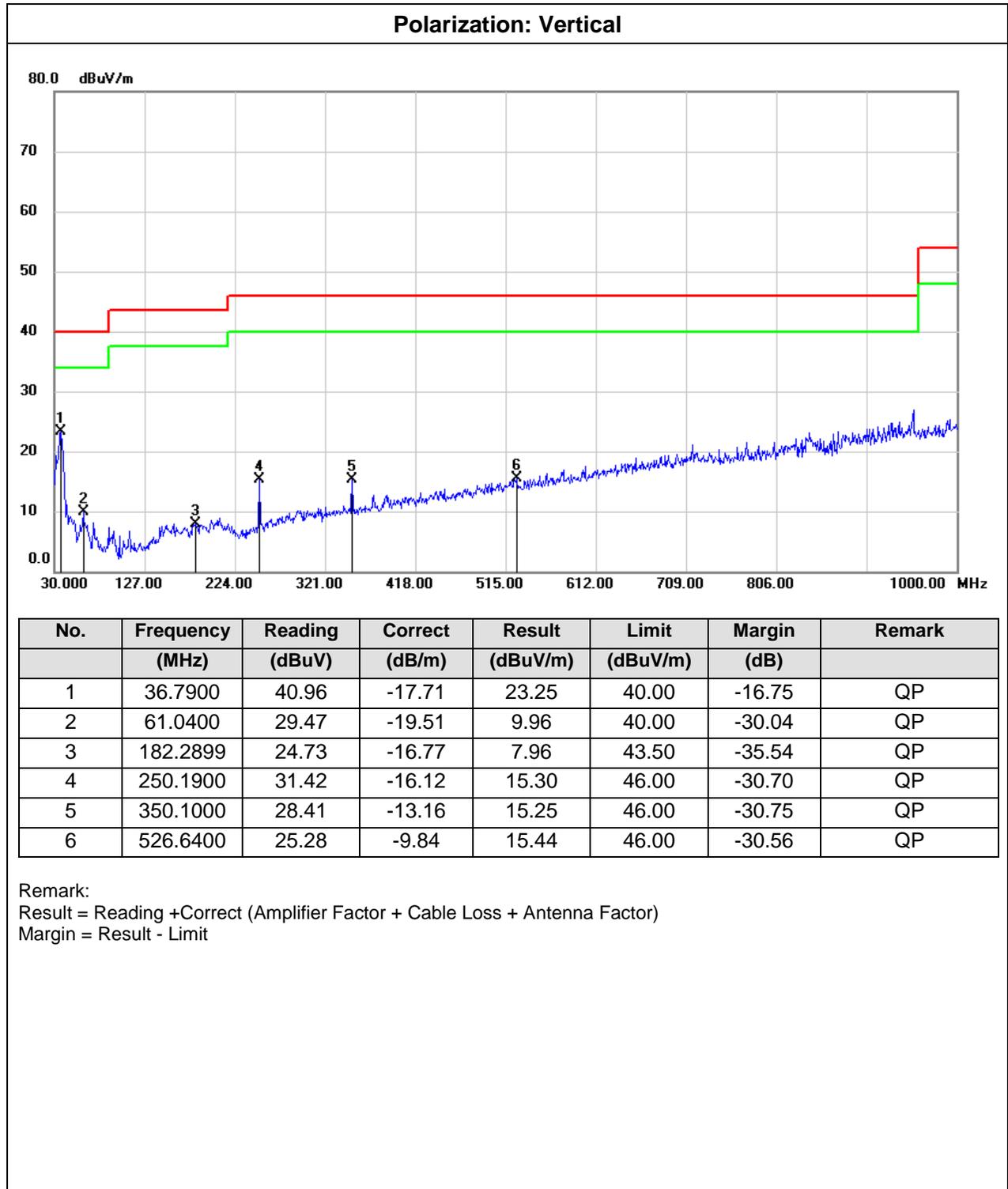
Radiated Disturbance - below 1 GHz		Radiated Disturbance - above 1 GHz	
Pre-test Mode:	Mode 1 & Mode 2	Pre-test Mode:	Mode 1 & Mode 2
Final Test Mode:	Mode 1 & Mode 2	Final Test Mode:	Mode 2

Note: All test modes have been tested, but only the worst case data recorded in the report.



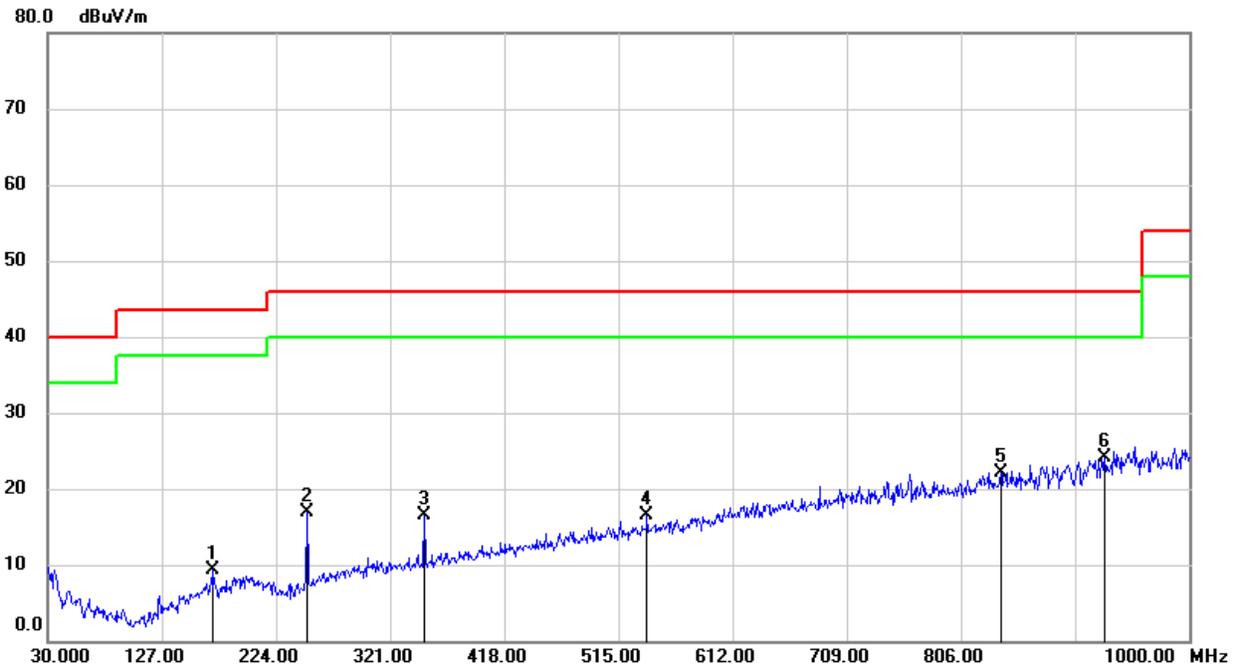
7.2.6. Test Results – below 1GHz

Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz





Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz

Polarization: Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	170.6500	26.13	-16.86	9.27	43.50	-34.23	QP
2	250.1900	33.00	-16.12	16.88	46.00	-29.12	QP
3	350.1000	29.72	-13.16	16.56	46.00	-29.44	QP
4	539.2500	26.13	-9.60	16.53	46.00	-29.47	QP
5	839.9500	26.80	-4.64	22.16	46.00	-23.84	QP
6	928.2200	27.87	-3.69	24.18	46.00	-21.82	QP

Remark:

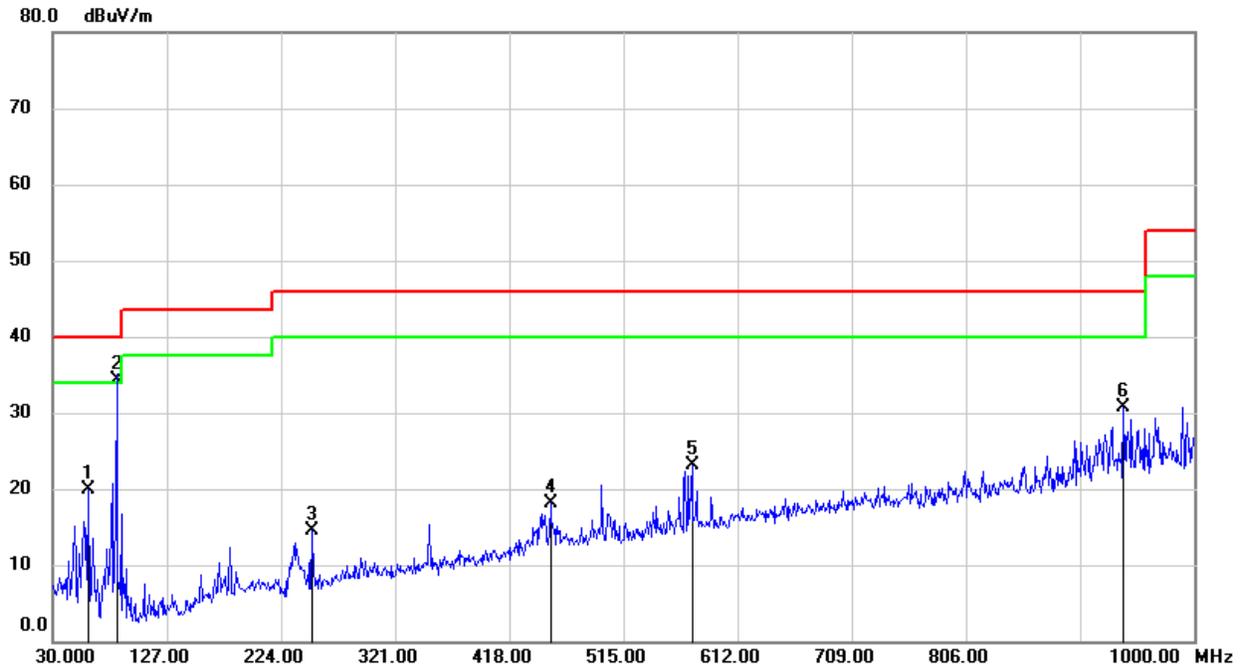
Result = Reading + Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit



Test Mode:	Mode 2
------------	--------

Polarization: Vertical



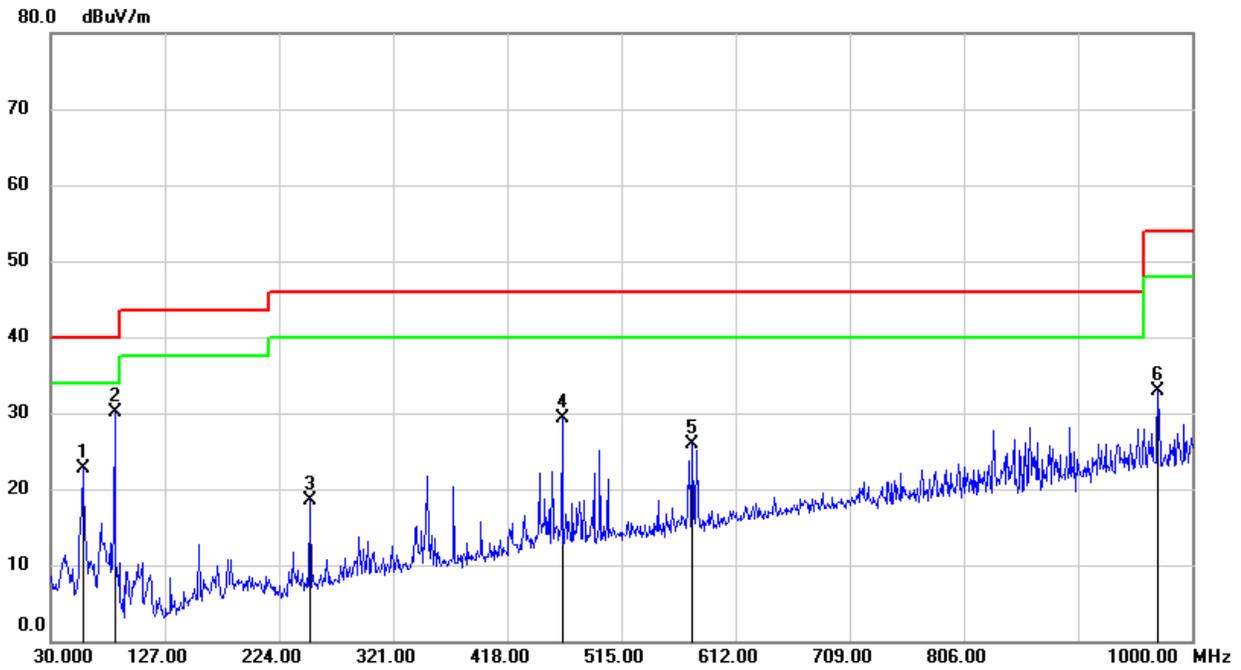
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	60.0700	39.33	-19.46	19.87	40.00	-20.13	QP
2	84.3200	55.09	-20.87	34.22	40.00	-5.78	QP
3	250.1900	30.57	-16.12	14.45	46.00	-31.55	QP
4	452.9200	29.45	-11.41	18.04	46.00	-27.96	QP
5	573.2000	32.05	-8.90	23.15	46.00	-22.85	QP
6	939.8600	34.34	-3.63	30.71	46.00	-15.29	QP

Remark:
 Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
 Margin = Result - Limit



Test Mode: Mode 2

Polarization: Horizontal

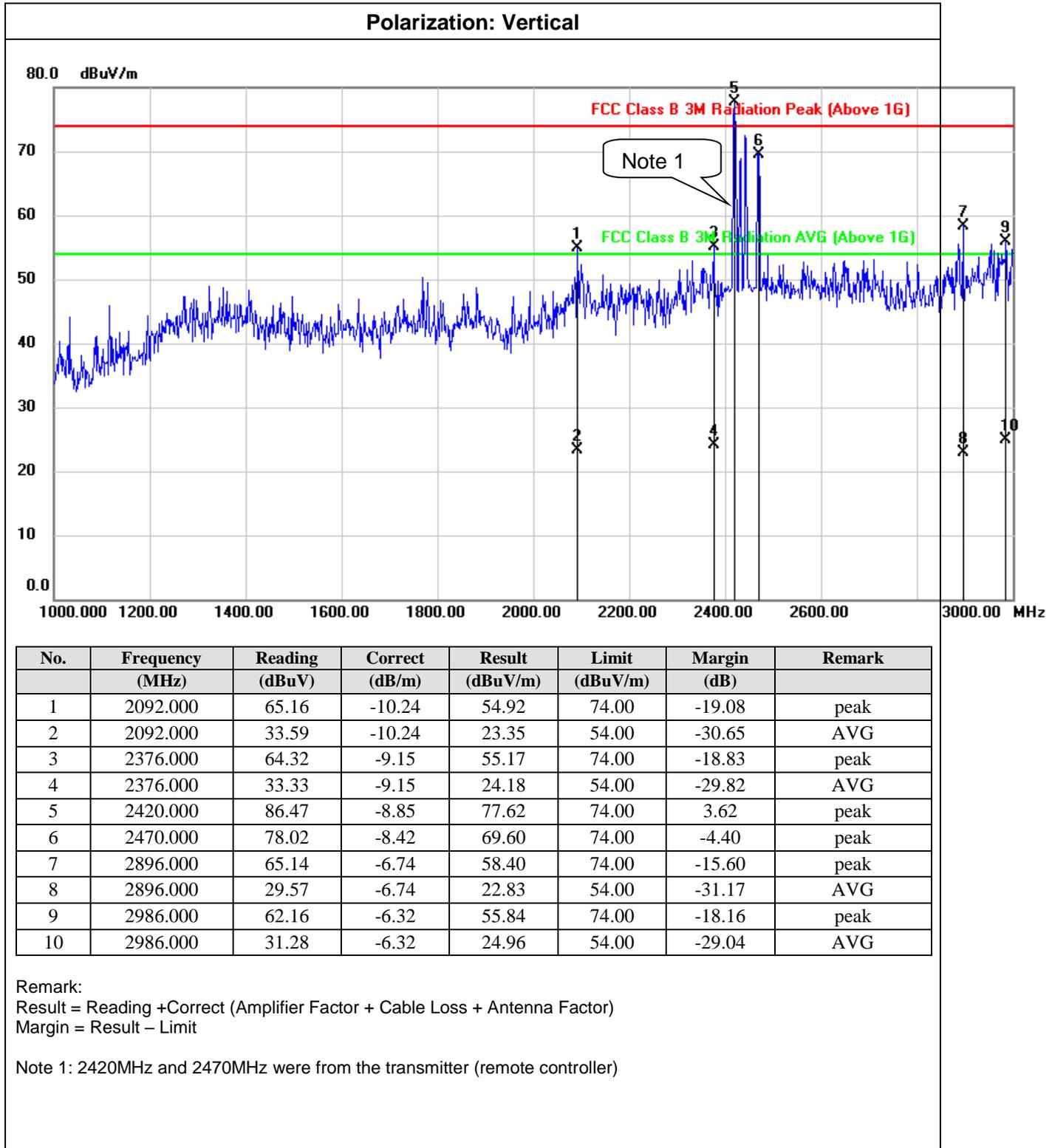


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	57.1600	41.82	-19.04	22.78	40.00	-17.22	QP
2	84.3200	51.04	-20.87	30.17	40.00	-9.83	QP
3	250.1900	34.64	-16.12	18.52	46.00	-27.48	QP
4	464.5600	40.46	-11.23	29.23	46.00	-16.77	QP
5	575.1400	34.86	-8.86	26.00	46.00	-20.00	QP
6	970.9000	36.22	-3.32	32.90	54.00	-21.10	QP

Remark:
 Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
 Margin = Result - Limit

**7.2.7. Test Results – above 1GHz**

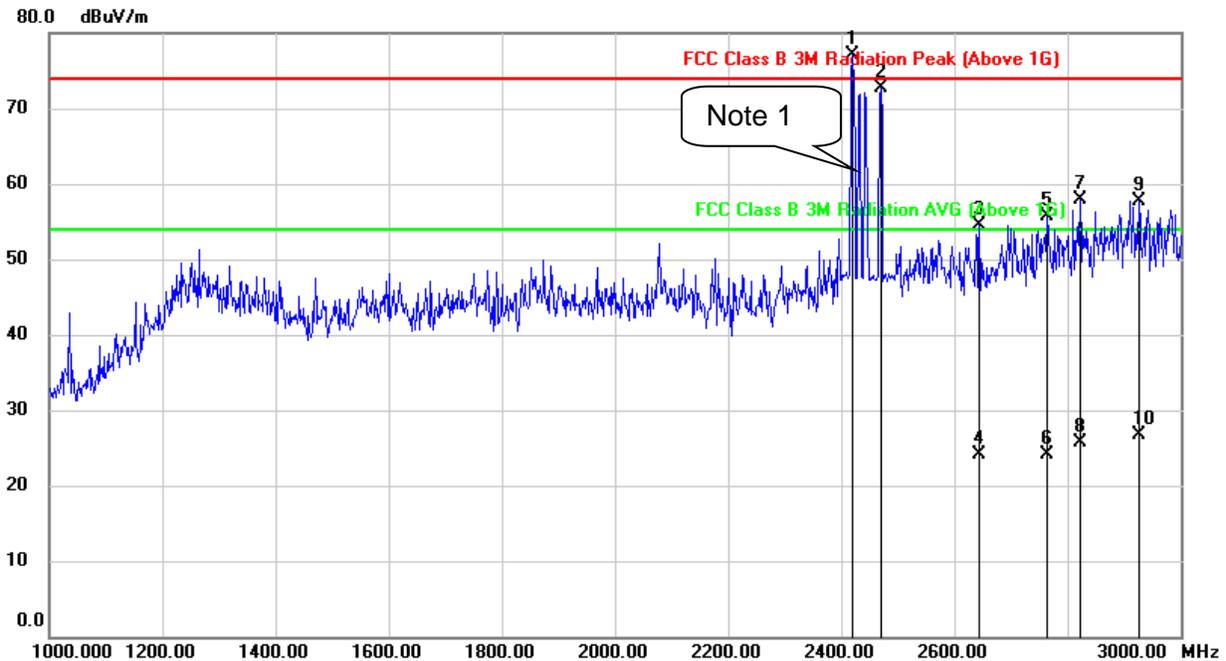
Test Mode:	Mode 2
------------	--------





Test Mode: Mode 2

Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2420.000	85.91	-8.85	77.06	74.00	3.06	peak
2	2470.000	81.12	-8.42	72.70	74.00	-1.30	peak
3	2644.000	62.78	-8.30	54.48	74.00	-19.52	peak
4	2644.000	32.45	-8.30	24.15	54.00	-29.85	AVG
5	2764.000	63.14	-7.47	55.67	74.00	-18.33	peak
6	2764.000	31.67	-7.47	24.20	54.00	-29.80	AVG
7	2822.000	65.00	-7.12	57.88	74.00	-16.12	peak
8	2822.000	32.81	-7.12	25.69	54.00	-28.31	AVG
9	2926.000	64.35	-6.60	57.75	74.00	-16.25	peak
10	2926.000	33.23	-6.60	26.63	54.00	-27.37	AVG

Remark:

Result = Reading + Correct (Amplifier Factor + Cable Loss + Antenna Factor)

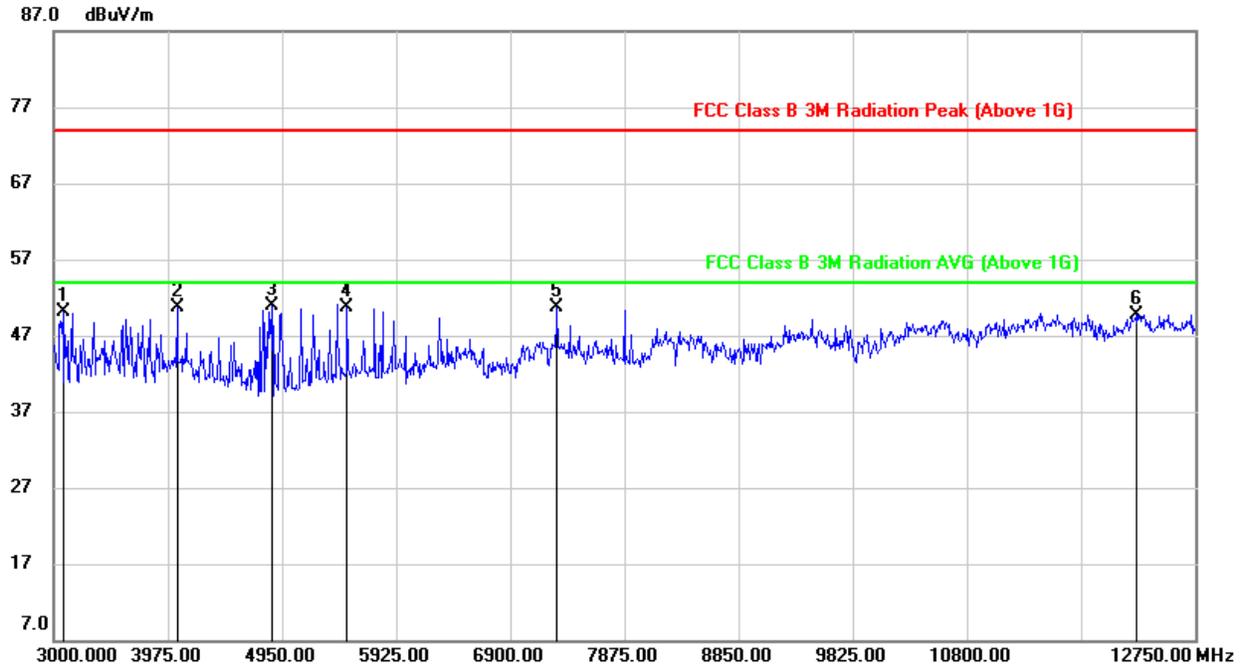
Margin = Result - Limit

Note 1: 2420MHz and 2470MHz were from the transmitter (remote controller)



Test Mode:	Mode 2
------------	--------

Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3078.000	54.21	-4.05	50.16	74.00	-23.84	peak
2	4053.000	53.69	-2.92	50.77	74.00	-23.23	peak
3	4862.250	51.01	-0.14	50.87	74.00	-23.13	peak
4	5505.750	47.89	2.83	50.72	74.00	-23.28	peak
5	7299.750	43.63	7.14	50.77	74.00	-23.23	peak
6	12243.000	35.46	14.30	49.76	74.00	-24.24	peak

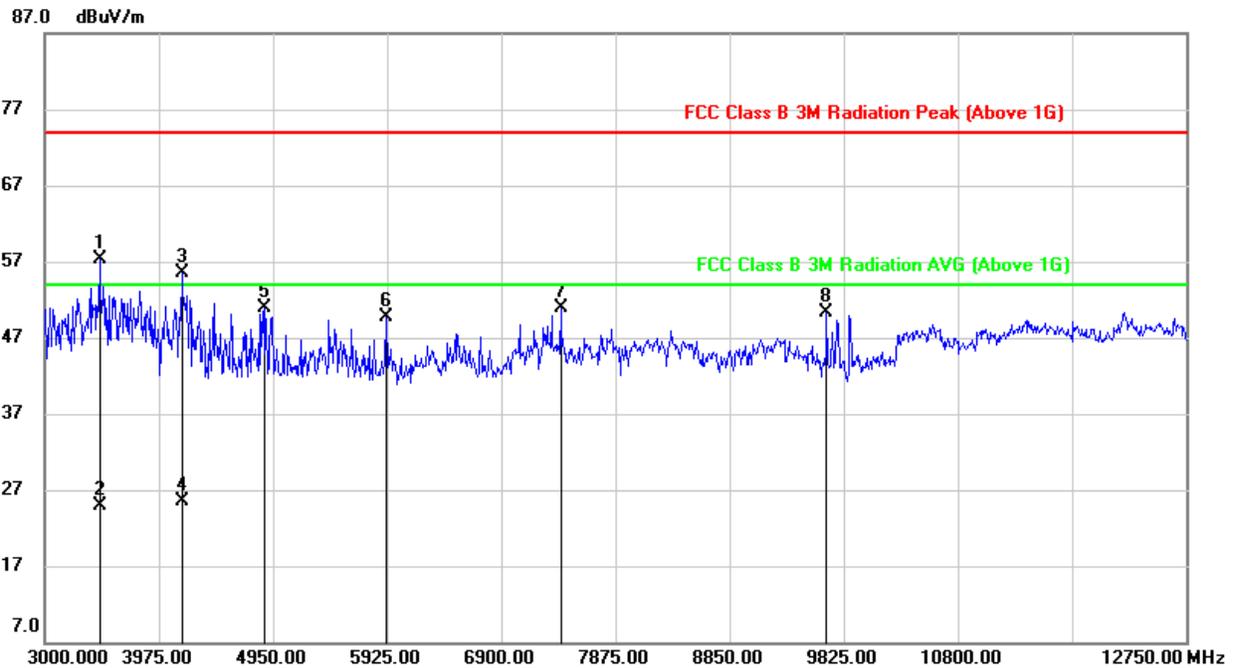
Remark:

Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit



Test Mode: Mode 2

Polarization: Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3468.000	61.61	-4.28	57.33	74.00	-16.67	peak
2	3468.000	29.21	-4.28	24.93	54.00	-29.07	AVG
3	4170.000	57.53	-2.11	55.42	74.00	-18.58	peak
4	4171.878	27.60	-2.09	25.51	54.00	-28.49	AVG
5	4881.750	50.94	-0.12	50.82	74.00	-23.18	peak
6	5915.250	44.69	5.07	49.76	74.00	-24.24	peak
7	7407.000	43.52	7.47	50.99	74.00	-23.01	peak
8	9678.750	40.21	10.08	50.29	74.00	-23.71	peak

Remark:

Result = Reading + Correct (Amplifier Factor + Cable Loss + Antenna Factor)

Margin = Result - Limit

END OF REPORT