

TEST REPORT

Applicant:	Shantou Jingshuo Toys Co., Ltd.
Address:	Xingda Industrial District, Fengxiang Chenghai, Shantou city, Guangdong, China

Manufacturer or Supplier	Shantou Jingshuo Toys Co., Ltd.
Address	Xingda Industrial District, Fengxiang Chenghai, Shantou city, Guangdong, China
Product:	Toy RC Italia Racer 1 16 Sport Real Drive
Brand Name:	Sharper Image
Model:	1012342
Additional Model & Model Difference	N/A
Date of tests:	Mar. 05 to Apr. 30, 2020

the tests have been carried out according to the requirements of the following standard:

FCC Part 15, Subpart C, Section 15.249

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Evans He Project Engineer / EMC Department	Approved by David Huang Supervisor / EMC Department
<i>Evans He</i>	<i>David Huang</i>
Date: Jun. 28, 2020	

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and 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. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the 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 based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that 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.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1 SUMMARY OF TEST RESULTS.....	4
2 MEASUREMENT UNCERTAINTY	4
3 GENERAL INFORMATION	5
3.1 GENERAL DESCRIPTION OF EUT	5
3.2 DESCRIPTION OF TEST MODES	6
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	8
3.4 DESCRIPTION OF SUPPORT UNITS	8
4 TEST TYPES AND RESULTS.....	9
4.1 RADIATED EMISSION MEASUREMENT	9
4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT	9
4.1.2 TEST INSTRUMENTS.....	10
4.1.3 TEST PROCEDURES	11
4.1.4 DEVIATION FROM TEST STANDARD	11
4.1.5 TEST SETUP.....	12
4.1.6 EUT OPERATING CONDITIONS	13
4.1.7 TEST RESULTS	14
4.2 20dB BANDWIDTH MEASUREMENT	21
4.2.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT.....	21
4.2.2 TEST INSTRUMENTS.....	21
4.2.3 TEST PROCEDURE	22
4.2.4 DEVIATION FROM TEST STANDARD	22
4.2.5 TEST SETUP.....	22
4.2.6 EUT OPERATING CONDITIONS	22
4.2.7 TEST RESULTS	23
5 PHOTOGRAPHS OF THE TEST CONFIGURATION.....	24
6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	26



Test Report No.: RF200410N053- 2

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF200410N053-2	Original release	Jun. 28, 2020

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.249)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
§15.203	Antenna Requirement	PASS	A permanently attached antenna
§15.207 (a)	Conducted Emission	N/A	Powered from battery
§15.205	Restricted Band of Operation	PASS	Compliant
§15.209 §15.249(a)	Radiated Emission	PASS	Compliant
§15.215(c)	20dB Bandwidth Test	PASS	Compliant

NOTE: Test Lab Information:

Lab: Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

Test Lab Address: Zone A, Floor 1, Building 2 Wan Ye Long Technology Park
South Side of Zhoushi Road, Bao'an District Shenzhen, Guangdong, 518108,
People's Republic of China

2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	9kHz~30MHz	±2.16dB
	30MHz ~ 1GMHz	±3.74dB
	1GHz ~ 18GHz	±4.66dB
	18GHz ~ 40GHz	±4.67dB

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



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Toy RC Italia Racer 1 16 Sport Real Drive
MODEL NO.	1012342
ADDITIONAL MODELS	N/A
FCC ID	2AVX815724GRX
NOMINAL VOLTAGE	DC 7.5V(1.5V*AA*5) from Battery
MODULATION TECHNOLOGY	GFSK
OPERATING FREQUENCY	2407-2477MHz
ANTENNA TYPE	Wire antenna, with 0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 200410N053-2) for detailed product photos.



3.2 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and packet type. The worst case was found when the EUT was positioned on Y axis for radiated emission. The EUT was tested under the following mode.

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE<1G	RE≥1G	PLC	BW	
A	√	√	-	√	DC 7.5V from Battery

Where **RE<1G**: Radiated Emission below 1GHz **RE≥1G**: Radiated Emission above 1GHz
PLC: Power Line Conducted Emission **BW**: 20db bandwidth

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

Following channel(s) was (were) selected for the test as listed below.

TESTED CHANNEL	TESTED FREQUENCY
Low	2407 MHz
Middle	2442 MHz
High	2477 MHz



Channel List

CHANNEL	FREQUENCY (MHZ)	CHANNEL	FREQUENCY (MHZ)	CHANNEL	FREQUENCY (MHZ)
1	2407	25	2431	49	2455
2	2408	26	2432	50	2456
3	2409	27	2433	51	2457
4	2410	28	2434	52	2458
5	2411	29	2435	53	2459
6	2412	30	2436	54	2460
7	2413	31	2437	55	2461
8	2414	32	2438	56	2462
9	2415	33	2439	57	2463
10	2416	34	2440	58	2464
11	2417	35	2441	59	2465
12	2418	36	2442	60	2466
13	2419	37	2443	61	2467
14	2420	38	2444	62	2468
15	2421	39	2445	63	2469
16	2422	40	2446	64	2470
17	2423	41	2447	65	2471
18	2424	42	2448	66	2472
18	2425	43	2449	67	2473
20	2426	44	2450	68	2474
21	2427	45	2451	69	2475
22	2428	46	2452	70	2476
23	2429	47	2453	71	2477
24	2430	48	2454		

Note: The more detailed channel, please refer to the product specifications

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	25deg. C, 57%RH	DC 7.5V from Battery	Aaron
BW	25deg. C, 57%RH	DC 7.5V from Battery	Aaron
PLC	-	-	-



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C, Section 15.249

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together without any other necessary accessories or support units

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field strength of fundamental (milli-volts/meter)	Field strength of harmonics (micro-volts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESL6	1300.5001K06-100262-eQ	Mar. 24, 20	Mar. 24, 21
Bilog Antenna	Sunol Sciences	JB6	A110712	Apr. 08, 20	Apr. 07, 21
Active Antenna	CMO-POWER	AL-130	121031	Mar. 27, 20	Mar. 26, 21
Signal Amplifier	HP	8447E	443008	Mar. 24, 20	Mar. 24, 21
3m Semi-anechoic Chamber	SAEMC	9m*6m*6m	N/A	Oct. 18, 18	Oct. 17, 21
Test Software	EZ-EMC	ICP-03A1	N/A	N/A	N/A
Spectrum	Agilent	E4446A	MY46180622	May 08, 20	May 07, 21
MXA signal analyzer	Agilent	N9020A	MY49100060	Mar. 24, 20	Mar. 24, 21
Horn Antenna	COM-POWER	HAH-118	71259	Apr. 17, 20	Apr. 17, 21
Horn Antenna	COM-POWER	HAH-118	71283	Mar. 20, 20	Mar. 19, 21
SHF-EHF Horn	Schwarzbeck	BBHA9170	BBHA9170147	Jun. 30, 19	Jun. 29, 20
SHF-EHF Horn	Schwarzbeck	BBHA9170	BBHA9170242	Jun. 30, 19	Jun. 29, 20
AMPLIFIER	EM Electornic Corporation	EM01G26G	60613	Mar. 24, 20	Mar. 24, 21
AMPLIFIER	Emc Instruments Corporation	Emc012645	980077	Jan. 04, 20	Jan. 03, 21

NOTE:

1. The test was performed in 966 Chamber.
2. The calibration interval of the above test instruments are 12 months (except 3m Semi-anechoic Chamber) and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 749762.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

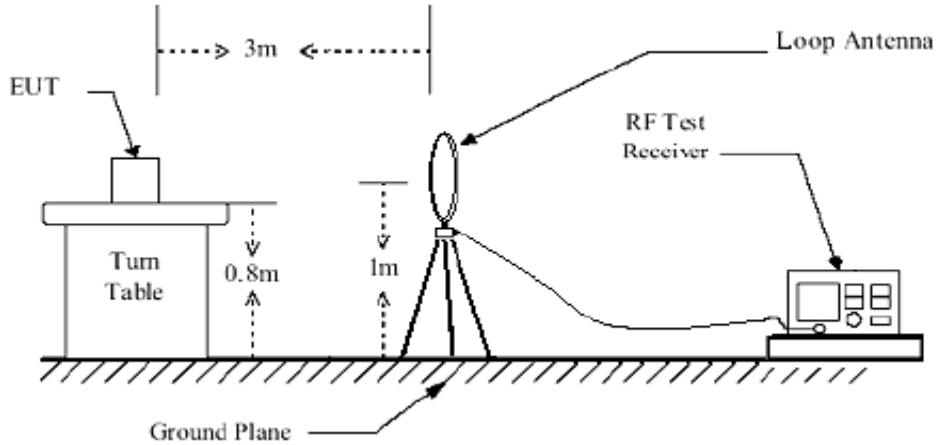
4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

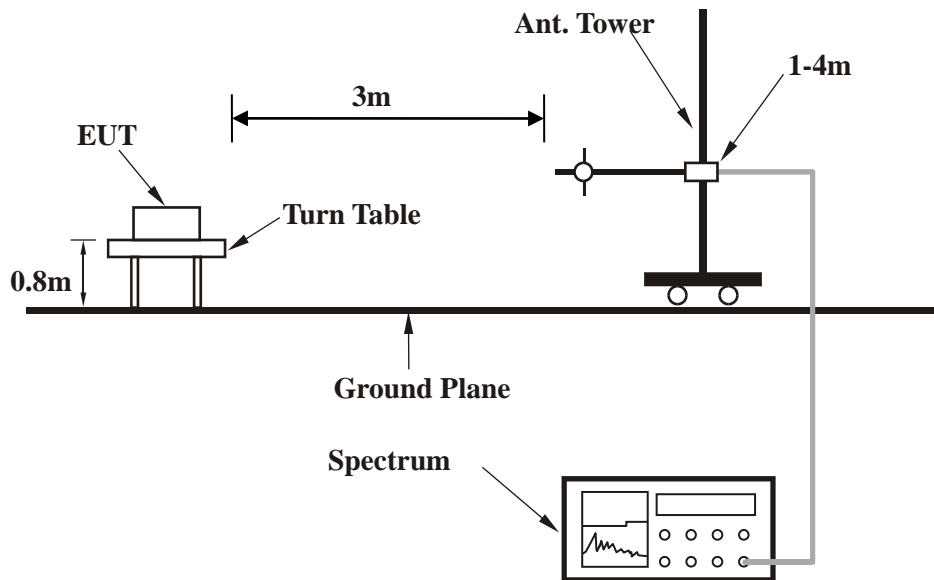


4.1.5 TEST SETUP

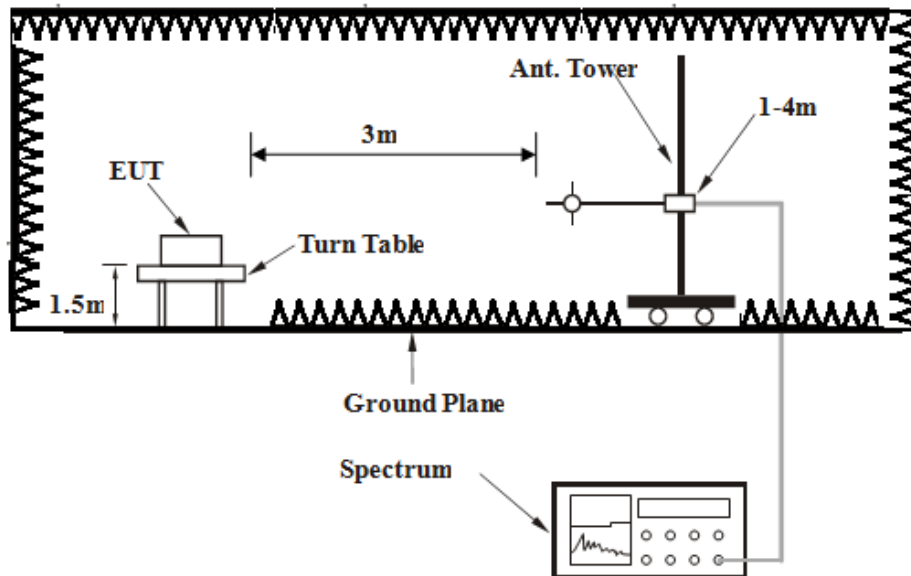
Below 30MHz test setup



Below 1GHz test setup



Above 1GHz test setup



Note: For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



4.1.7 TEST RESULTS

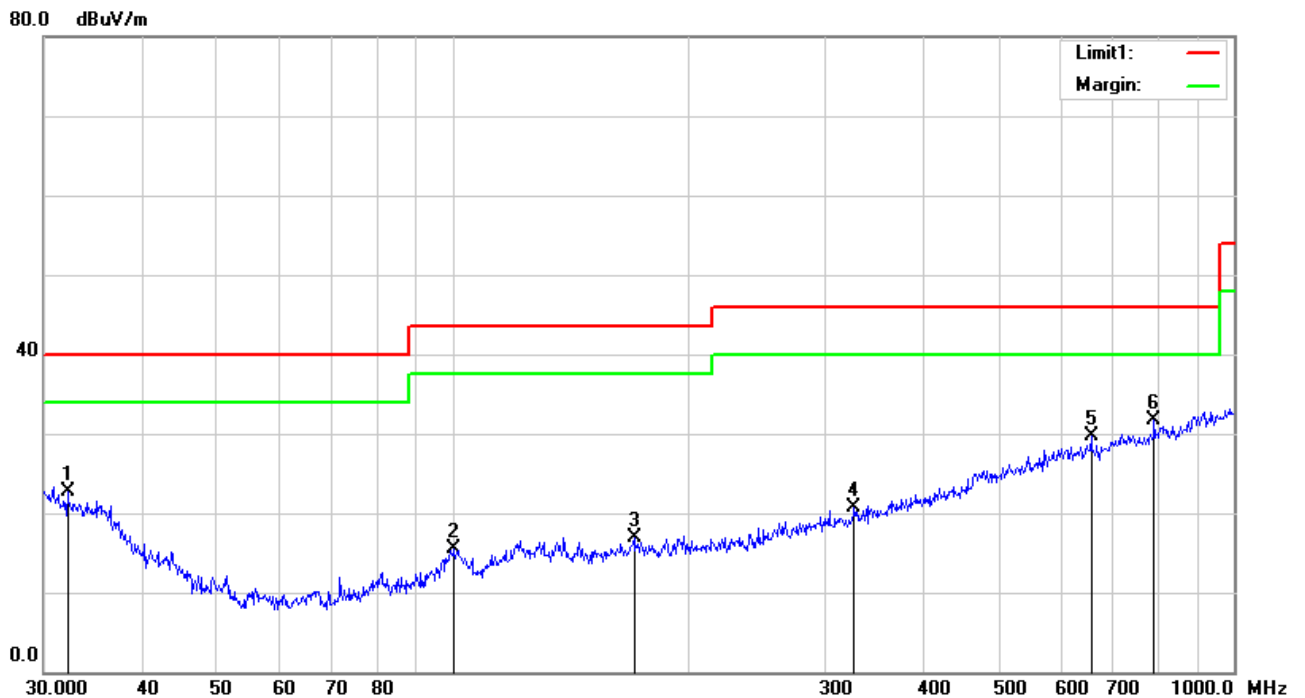
BELOW 1GHz WORST-CASE DATA

CHANNEL	TX Middle Channel	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & test distance: HORIZONTAL at 3 m										
No.	Frequency (MHz)	Reading (dBuV/m)	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	32.1795	26.13	18.71	22.27	0.14	22.71	40.00	-17.29	100	336
2	100.5806	28.32	8.77	22.32	0.82	15.59	43.50	-27.91	100	310
3	170.7926	26.66	11.15	22.26	1.40	16.95	43.50	-26.55	100	0
4	326.7395	26.88	14.23	22.22	1.79	20.68	46.00	-25.32	100	12
5	656.5300	28.13	20.72	21.46	2.37	29.76	46.00	-16.24	100	203
6	790.6188	28.29	22.11	21.17	2.54	31.77	46.00	-14.23	100	349

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB)
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.



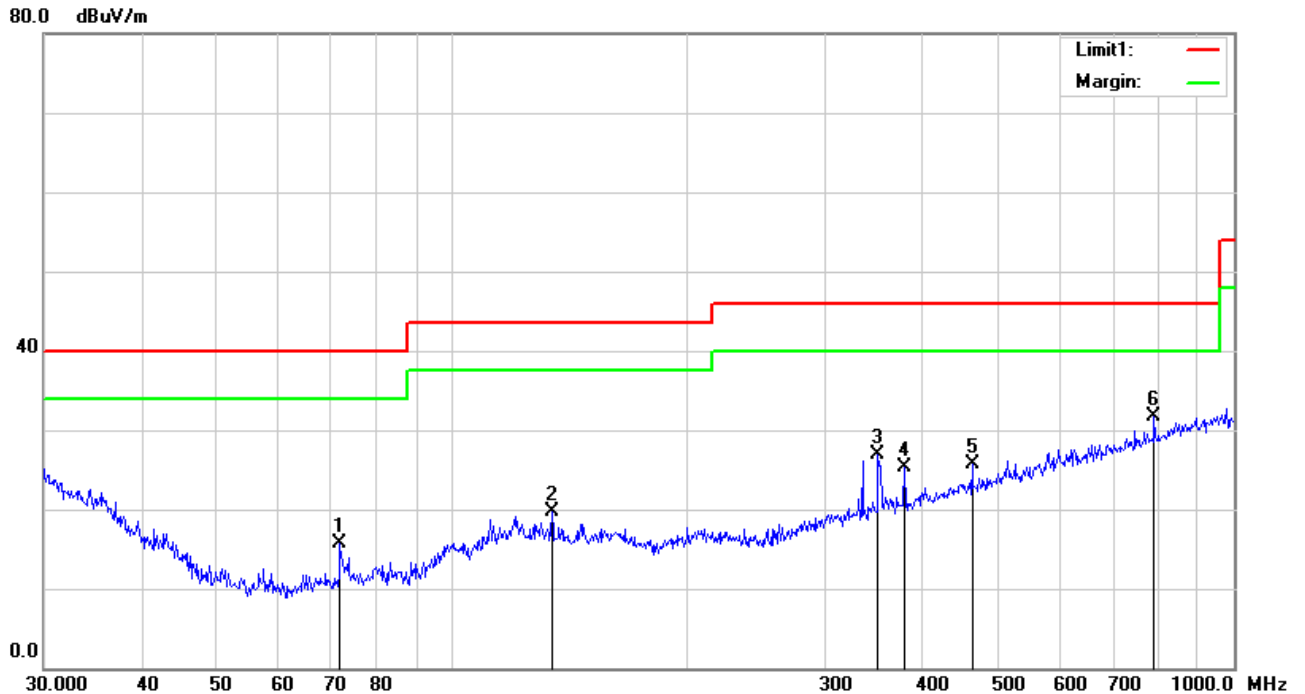


CHANNEL	TX Middle Channel	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & test distance: Vertical at 3 m										
No.	Frequency (MHz)	Reading (dBuV/m)	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	71.8320	29.96	7.76	22.39	0.38	15.71	40.00	-24.29	100	203
2	134.0882	28.06	12.98	22.40	1.13	19.77	43.50	-23.73	100	113
3	350.4768	32.63	14.66	22.15	1.85	26.99	46.00	-19.01	100	49
4	378.5843	30.30	15.25	22.07	1.90	25.38	46.00	-20.62	100	31
5	462.3455	28.62	16.95	21.89	2.04	25.72	46.00	-20.28	100	191
6	790.6188	28.98	21.29	21.17	2.54	31.64	46.00	-14.36	100	207

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB)
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.





ABOVE 1GHZ WORST-CASE DATA:

CHANNEL	TX Low Channel	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

2407-Horizonta

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR (PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (mm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
2400	46.02	PK	74	-27.98	200	333	59.67	-13.65
2400	33.26	AV	54	-20.74	200	333	46.91	-13.65
*2407	73.81	PK	114	-40.19	200	107	87.78	-13.97
*2407	61.05	AV	94	-32.95	200	107	75.02	-13.97
4814	52.47	PK	74	-21.53	200	161	56.22	-3.75
4814	39.71	AV	54	-14.29	200	161	43.46	-3.75
7221	51.74	PK	74	-22.26	100	337	52.32	-0.58
7221	38.98	AV	54	-15.02	100	337	39.56	-0.58

2407-Vertical

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR (PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (mm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
2400	44.74	PK	74	-29.26	200	284	58.39	-13.65
2400	31.98	AV	54	-22.02	200	284	45.63	-13.65
*2407	71.54	PK	114	-42.46	200	217	85.51	-13.97
*2407	58.78	AV	94	-35.22	200	217	72.75	-13.97
4816	51.38	PK	74	-22.62	200	276	55.13	-3.75
4816	38.62	AV	54	-15.38	200	276	42.37	-3.75
7224	50.39	PK	74	-23.61	200	308	50.97	-0.58
7224	37.63	AV	54	-16.37	200	308	38.21	-0.58

REMARKS:

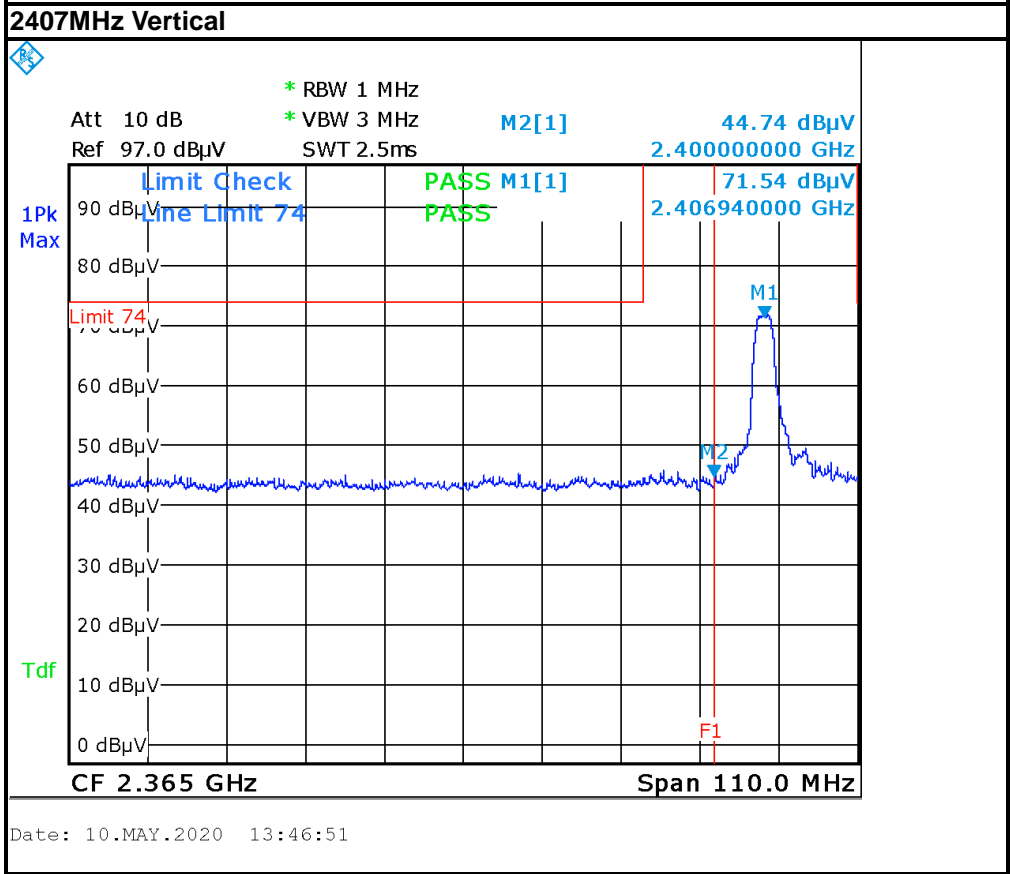
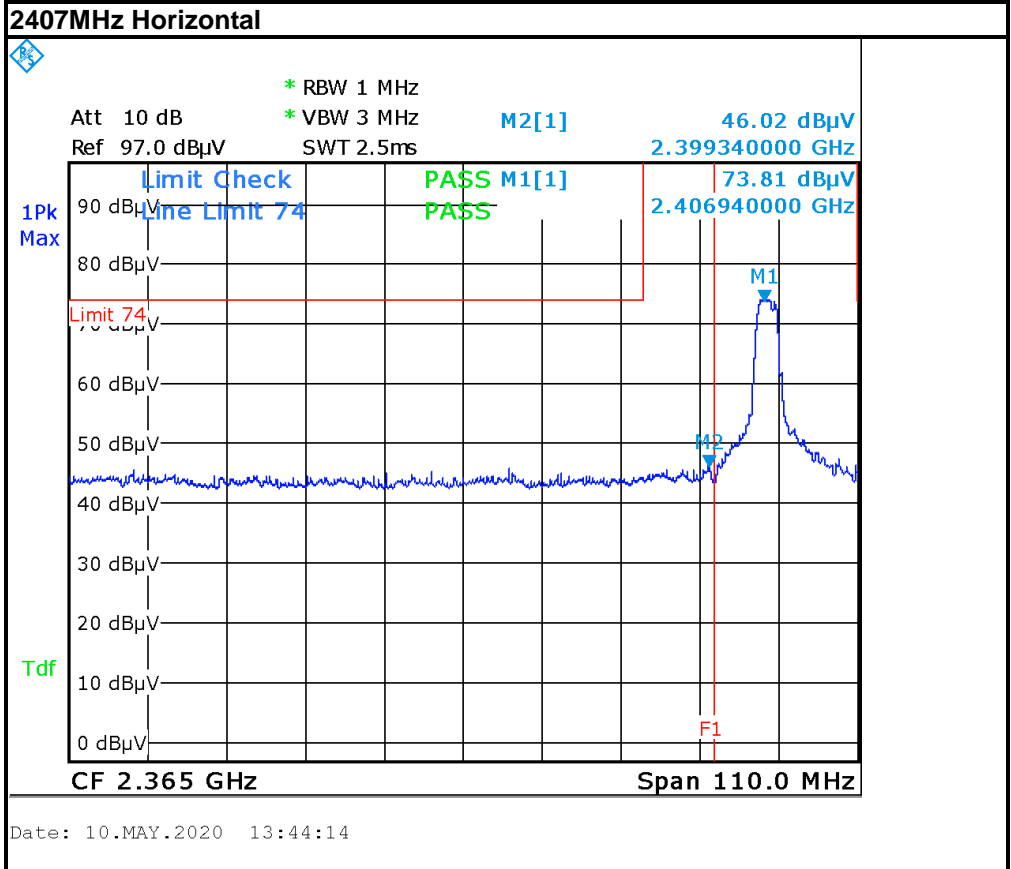
1. Field strength value(AV) (dBuV/m) = Field strength value(PK) (dBuV/m) + Average Factor (dB).
2. Margin value = Field strength value – Limit value.
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. " * ": Fundamental frequency.



BUREAU VERITAS

Test Report No.: RF200410N053- 2

Band edge Plot





CHANNEL	TX Middle Channel	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

2428-Horizonta

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR (PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (mm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
*2442	74.64	PK	114	-39.36	100	257	87.66	-13.02
*2442	61.88	AV	94	-32.12	100	257	74.9	-13.02
4884	51.2	PK	74	-22.8	100	251	55.16	-3.96
4884	38.44	AV	54	-15.56	100	251	42.4	-3.96
7326	50.33	PK	74	-23.67	100	61	51.09	-0.76
7326	37.57	AV	54	-16.43	100	61	38.33	-0.76

2428-Vertical

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR (PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (mm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
*2442	72.64	PK	114	-41.36	100	14	85.66	-13.02
*2442	59.88	AV	94	-34.12	100	14	72.9	-13.02
4884	51.69	PK	74	-22.31	100	340	55.65	-3.96
4884	38.93	AV	54	-15.07	100	340	42.89	-3.96
7326	49.88	PK	74	-24.12	200	129	50.64	-0.76
7326	37.12	AV	54	-16.88	200	129	37.88	-0.76

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

CHANNEL	TX High Channel	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

2477-Horizontal

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR (PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (mm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
2483.5	49.52	PK	74	-24.48	200	197	63.17	-13.65
2483.5	36.76	AV	54	-17.24	200	197	50.41	-13.65
*2477	75.71	PK	114	-38.29	100	332	89.68	-13.97
*2477	62.95	AV	94	-31.05	100	332	76.92	-13.97
4956	49.69	PK	74	-24.31	200	37	53.44	-3.75
4956	36.93	AV	54	-17.07	200	37	40.68	-3.75
7434	48.75	PK	74	-25.25	200	318	49.33	-0.58
7434	35.99	AV	54	-18.01	200	318	36.57	-0.58

2477-Vertical

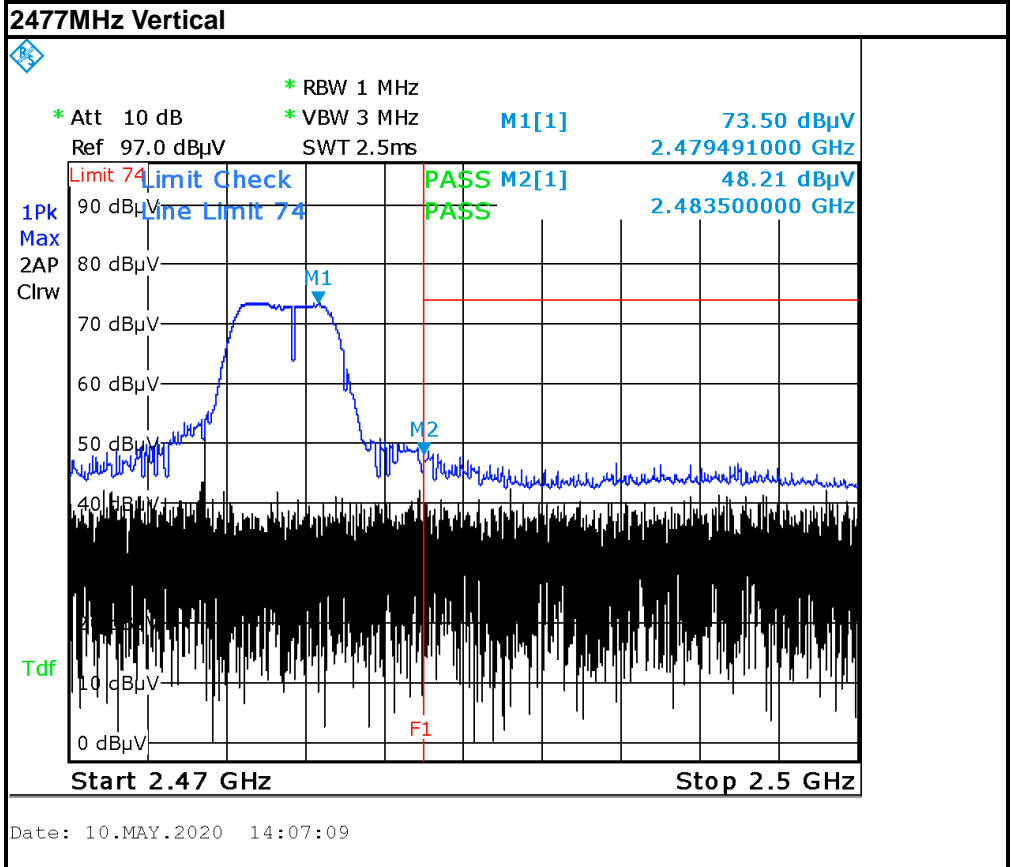
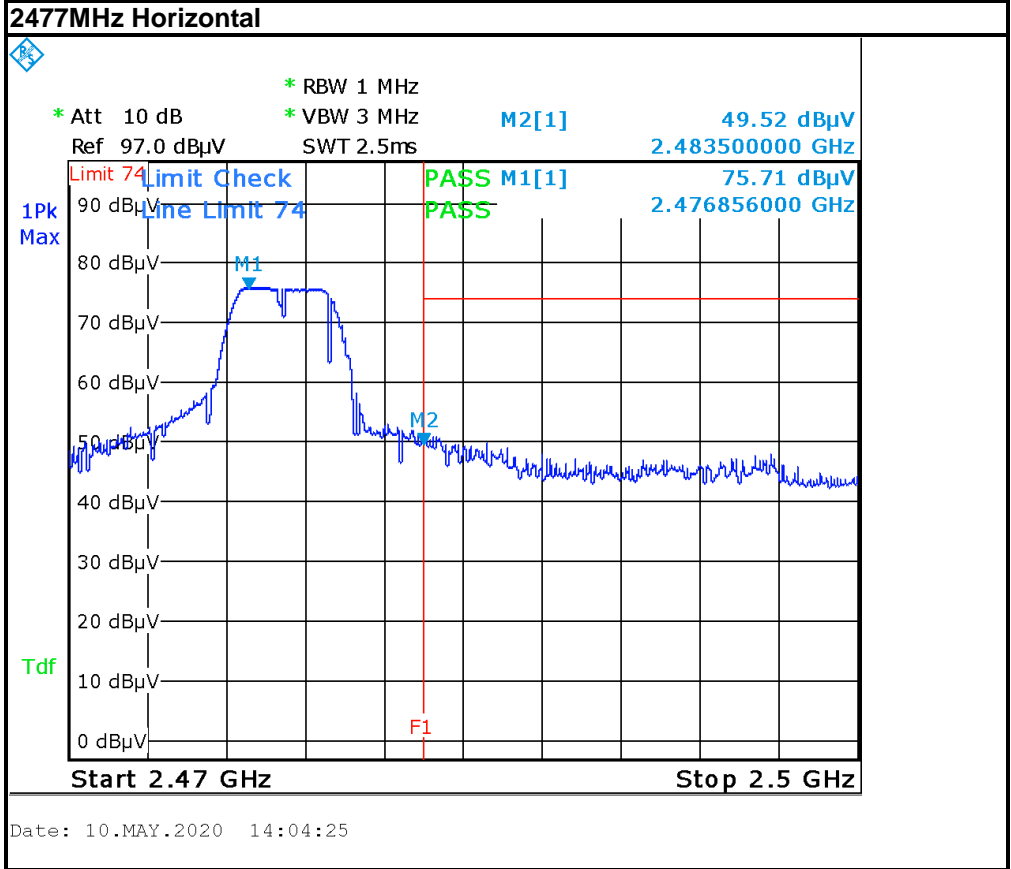
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	DETECTOR (PK/AV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (mm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
2483.5	48.21	PK	74	-25.79	100	72	61.86	-13.65
2483.5	35.45	AV	54	-18.55	100	72	49.1	-13.65
*2477	73.5	PK	114	-40.5	100	105	87.47	-13.97
*2477	60.74	AV	94	-33.26	100	105	74.71	-13.97
4954	51.69	PK	74	-22.31	200	57	55.44	-3.75
4954	38.93	AV	54	-15.07	200	57	42.68	-3.75
7431	48.66	PK	74	-25.34	100	37	49.24	-0.58
7431	35.9	AV	54	-18.1	100	37	36.48	-0.58

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.



Band edge Plot





4.2 20dB BANDWIDTH MEASUREMENT

4.2.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

According to FCC 15.215(c), must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Wireless Connectivity Tester	R&S	CMW270	1201.0002K75	Dec. 18, 19	Dec. 17, 20
MXA VEXTOR SIGNAL	Agilent	n5182a	MY50140530	Mar. 24, 20	Mar. 24, 21
MXA signal analyzer	Agilent	n9020a	MY49100060	Mar. 24, 20	Mar. 24, 21
RF Control Unit	Tonscend	JS0806-2	188060112	Mar. 24, 20	Mar. 24, 21
Signal Generation	Agilent	E4421B	US40051152	Dec. 18, 19	Dec. 17, 20
DC Power Supply	Agilent	E3640A	MY40004013	Mar. 30, 20	Mar. 30, 21
Programmable Temperature & Humidity Chamber	Hongjin	HYC-TH-225D H	DG-180746	Mar. 24, 20	Mar. 24, 21
Test System	Tonscend	JS 1120-3	N/A	N/A	N/A
Power Splitter	Weinschel	1580-1	TL177	Mar. 27, 20	Mar. 27, 21

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

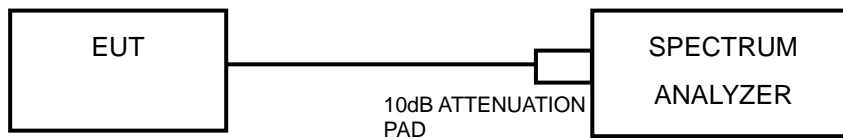
4.2.3 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



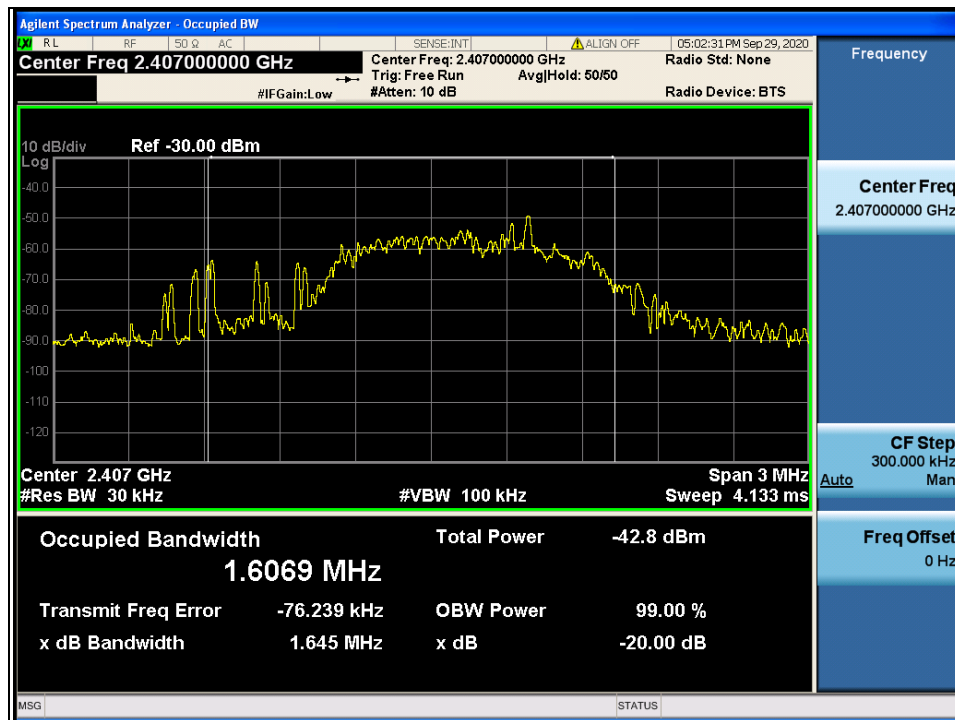
4.2.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

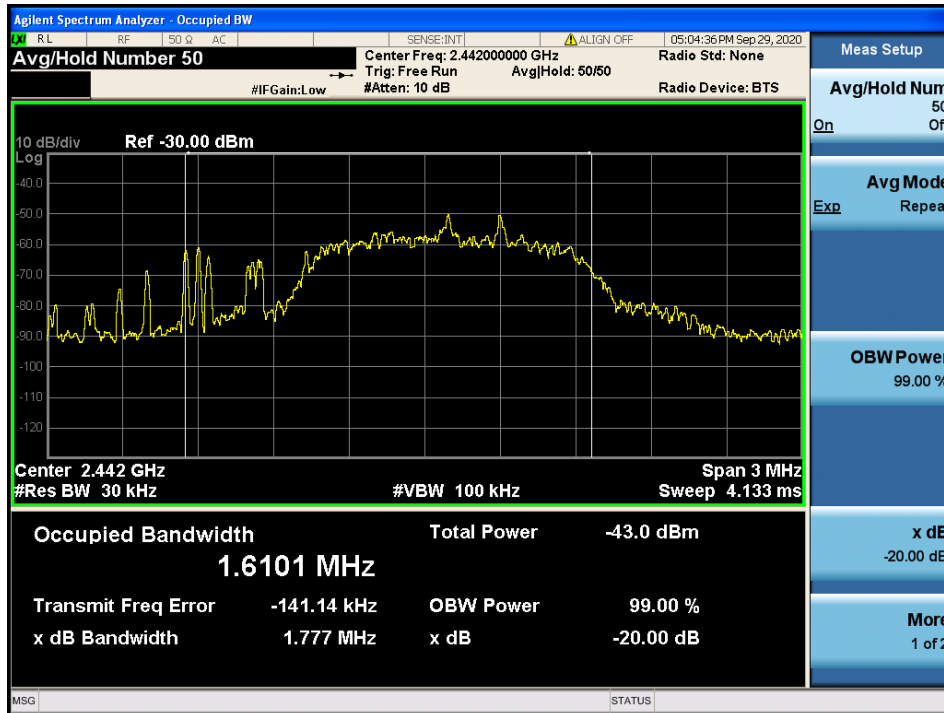
4.2.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
Low	2407	1.645
Middle	2442	1.777
High	2477	1.141

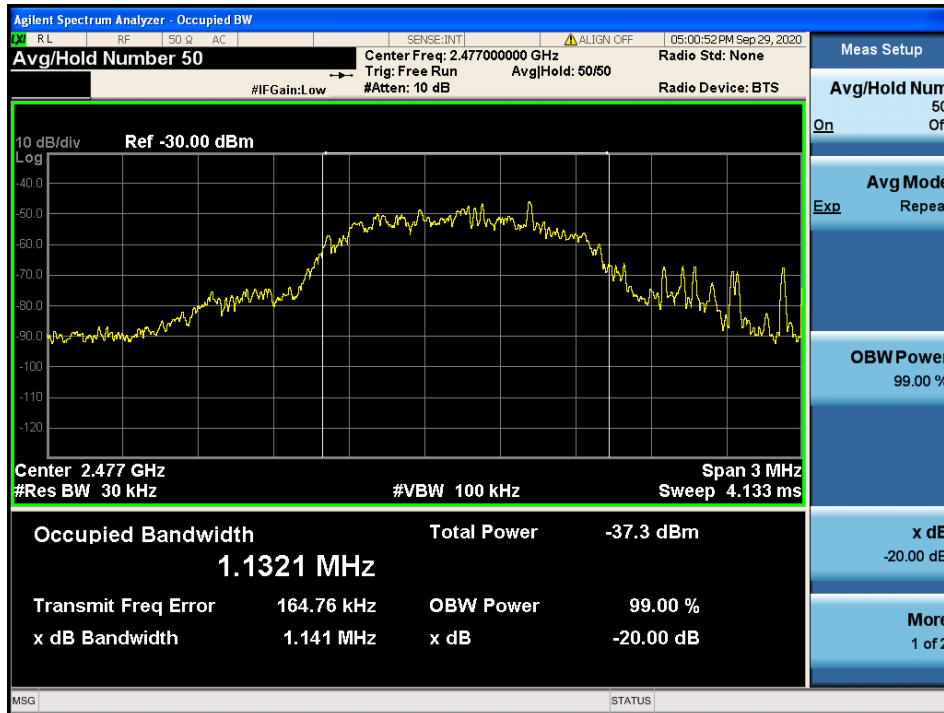
Test Data: Low channel



Test Data: Middle channel



Test Data: High channel





Test Report No.: RF200410N053- 2

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



**BUREAU
VERITAS**

Test Report No.: RF200410N053- 2

6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---