

TEST REPORT

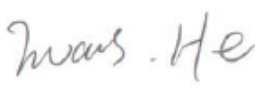
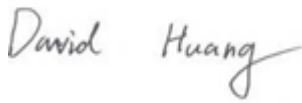
Applicant	YUAN DI TOYS FACTORY
Address	SHANDAI INDUSTRIAL DISTRICT, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA

Manufacturer or Supplier	YUAN DI TOYS FACTORY
Address	SHANDAI INDUSTRIAL DISTRICT, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA
Product:	RC TOYS
Brand Name:	N/A
Model:	YD898-MJ1935
Additional Model & Model Difference	YD898-MJ1936、YD898-MJ1937、YD898-MJ1927 etc. See item 3.1
Date of tests:	Oct. 22, 2020~ Nov. 06, 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
	 Date: Nov. 06, 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.....	7
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	9
3.4 DESCRIPTION OF SUPPORT UNITS	9
4. TEST TYPES AND RESULTS.....	10
4.1 RADIATED EMISSION MEASUREMENT	10
4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT	10
4.1.2 TEST INSTRUMENTS.....	11
4.1.3 TEST PROCEDURES	12
4.1.4 DEVIATION FROM TEST STANDARD	12
4.1.5 TEST SETUP	13
4.1.6 EUT OPERATING CONDITIONS	14
4.1.7 TEST RESULTS	15
4.2 20DB BANDWIDTH MEASUREMENT	22
4.2.1 LIMITS OF 20DB BANDWIDTH MEASUREMENT	22
4.2.2 TEST INSTRUMENTS.....	22
4.2.3 TEST PROCEDURE	23
4.2.4 DEVIATION FROM TEST STANDARD	23
4.2.5 TEST SETUP	23
4.2.6 EUT OPERATING CONDITIONS	23
4.2.7 TEST RESULTS	24
5. PHOTOGRAPHS OF THE TEST CONFIGURATION	26
6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	27



Test Report No.: RF2010WDG0168-1

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2010WDG0168-1	Original release	Nov. 06, 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	No antenna connector is used
§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	RC TOYS
MODEL NO.	YD898-MJ1935
ADDITIONAL MODELS	See below additional models list
FCC ID	2AASIYD85722898-8
NOMINAL VOLTAGE	Car: DC 6V(1.5V*AA*4) from Battery
MODULATION TECHNOLOGY	GFSK
OPERATING FREQUENCY	2405-2475MHz
ANTENNA TYPE	Whip Antenna,1dBi 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.: RF2010WDG0168-1) for detailed product photo.
4. Additional models (see about table) are identical with the test model YD898-MJ1935 except the color of the appearance and model name for trading purpose.

Additional Models List:

YD898-MJ1936, YD898-MJ1937, YD898-MJ1927, YD898-MJ1928, YD898-MJ1929,
YD898-MJ1930, YD898-MJ1931, YD898-MJ1932, YD898-MJ1933, YD898-MJ1934,
YD898-MJ1953, YD898-MJ1954, YD898-MJ1955, YD898-MJ1956, YD898-MJ1957,
YD898-MJ1958, YD898-MJ1959, YD898-MJ1960, YD898-MJ1961, YD898-MJ1962,
YD898-MJ1963, YD898-MJ1964, YD898-MJ1965, YD898-MJ1966, YD898-MJ1967,
YD898-MJ1968, YD898-MJ1969, YD898-MJ1970, YD898-MJ1988, YD898-MJ1989,
MJ1100, MJ1200, MJ1300, MJ1400, YD898-J53, YD898-J54, YD898-J55,
YD898-J56, YD898-J57, YD898-J58, YD898-MJ1999, YD898-MJ2000, YD898-MJ1906,
YD898-MJ1907, YD898-MJ1908, YD898-MJ1909, YD898-MJ1910, YD898-MJ1911,
YD898-MJ1914, YD898-MJ1808, YD898-MJ1809, YD898-MJ1814, YD898-MJ1815,
YD898-MJ1819, YD898-MJ1820, YD898-MT1935, YD898-MT1936, YD898-MT1937,
YD898-MT1927, YD898-MT1928, YD898-MT1953, YD898-MT1954, YD898-MT1955,
YD898-MT1956, YD898-MT1957, YD898-MT1958, YD898-MT1959, YD898-MT1960,
YD898-MT1961, YD898-MT1962, YD898-MT1963, YD898-MT1964, YD898-MT1965,
YD898-MT1966, YD898-MT1967, YD898-MT1968, YD898-MT1969, YD898-MT1970,
YD898-MT1988, YD898-MT1989, MT1100, MT1200, MT1300, MT1400, YD898-T53,
YD898-T54, YD898-T55, YD898-T56, YD898-T57, YD898-T58, YD898-MT1999,
YD898-MT2000, YD898-MT1906, YD898-MT1907, YD898-MT1908, YD898-MT1909,
YD898-MT1910, YD898-MT1911, YD898-MT1914, YD898-MT1808, YD898-MT1809,
YD898-MT1814, YD898-MT1815, YD898-MT1819, YD898-MT1820

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 6V from Battery

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
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	2405 MHz
Middle	2445 MHz
High	2475 MHz

Channel List

CHANNEL	FREQUENCY (GHZ)	CHANNEL	FREQUENCY (GHZ)	CHANNEL	FREQUENCY (GHZ)
1	2405	25	2429	49	2453
2	2406	26	2430	50	2454
3	2407	27	2431	51	2455
4	2408	28	2432	52	2456
5	2409	29	2433	53	2457
6	2410	30	2434	54	2458
7	2411	31	2435	55	2459
8	2412	32	2436	56	2460
9	2413	33	2437	57	2461
10	2414	34	2438	58	2462
11	2415	35	2439	59	2463
12	2416	36	2440	60	2464
13	2417	37	2441	61	2465
14	2418	38	2442	62	2466
15	2419	39	2443	63	2467
16	2420	40	2444	64	2468
17	2421	41	2445	65	2469
18	2422	42	2446	66	2470
19	2423	43	2447	67	2471
20	2424	44	2448	68	2472
21	2425	45	2449	69	2473
22	2426	46	2450	70	2474
23	2427	47	2451	71	2475
24	2428	48	2452		

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

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	26deg. C, 56%RH	DC 6V from Battery	Aaron Liang
BW	26deg. C, 56%RH	DC 6V from Battery	Aaron Liang
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 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	-	-	-	-	-

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	-

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	1300.5001K06-10 0262-eQ	Mar. 24, 20	Mar. 24, 21
Bilog Antenna	Sunol Sciences	JB6	A110712	Jul. 21, 20	Jul. 21, 21
Active Antenna	CMO-POWER	AL-130	121031	Jun. 30, 20	Jun. 30, 21
Signal Amplifier	HP	8447E	443008	Mar. 24, 20	Mar. 24, 21
Signal and Spectrum Analyzer	R&S	FSV40	101094	Mar. 19, 20	Mar. 19, 21
MXA signal analyzer	Agilent	N9020A	MY49100060	Mar. 24, 20	Mar. 24, 21
Horn Antenna	COM-POWER	AH-118	71259	Apr. 17, 20	Apr. 17, 21
Horn Antenna	COM-POWER	AH-118	71283	Jul. 21, 20	Jul. 21, 21
SHF-EHF Horn	Schwarzbeck	BBHA9170	BBHA9170147	May 10, 20	May 10, 21
SHF-EHF Horn	Schwarzbeck	BBHA9170	BBHA9170242	May 10, 20	May 10, 21
AMPLIFIER	EM Electornic Corporation	EM01G26G	60613	Mar. 24, 20	Mar. 24, 21
Pre-amplifier	Rohde&Schwarz	SCU40	100437	Oct. 17, 20	Oct. 16, 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

NOTE:

1. The test was performed in 966 Chamber (a 3m Semi-anechoic chamber).
2. The calibration interval of the above test instruments is 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 above1GHz 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:

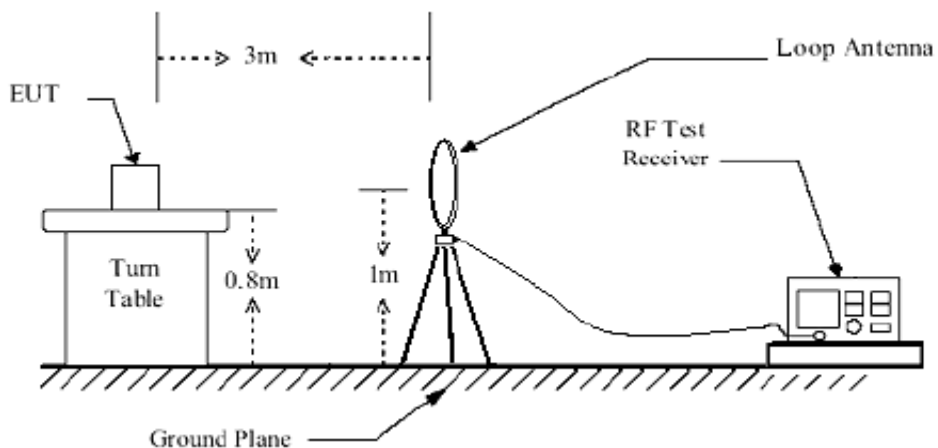
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution 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

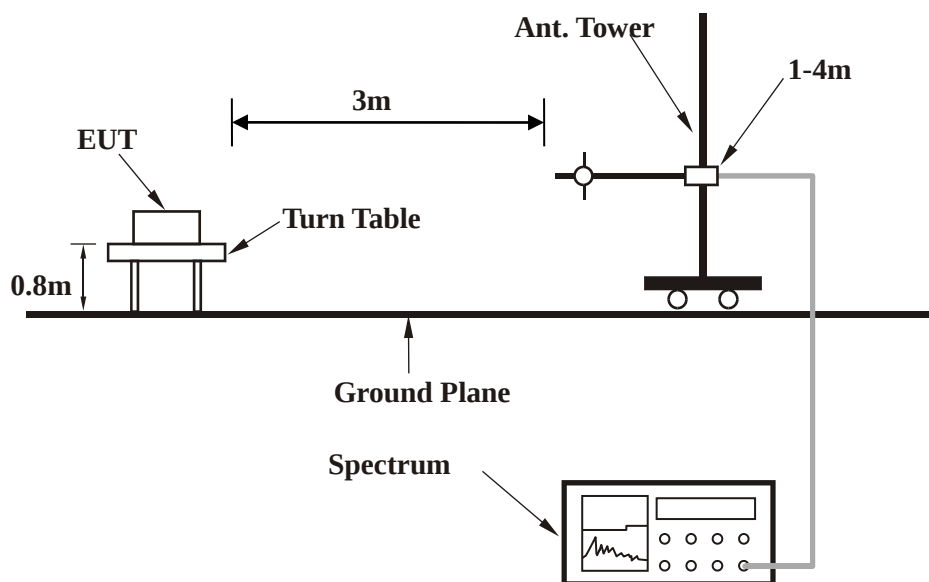
No deviation.

4.1.5 TEST SETUP

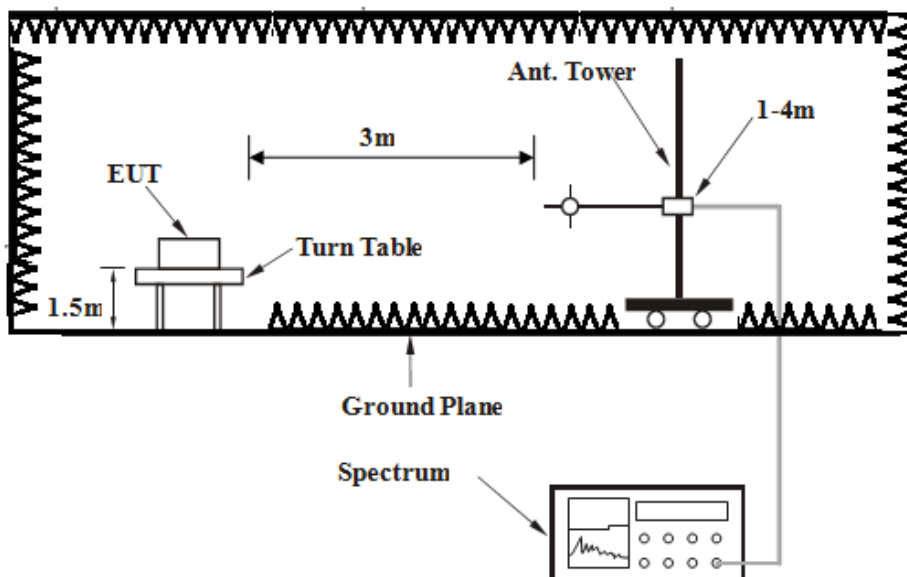
Below 30MHz test setup



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

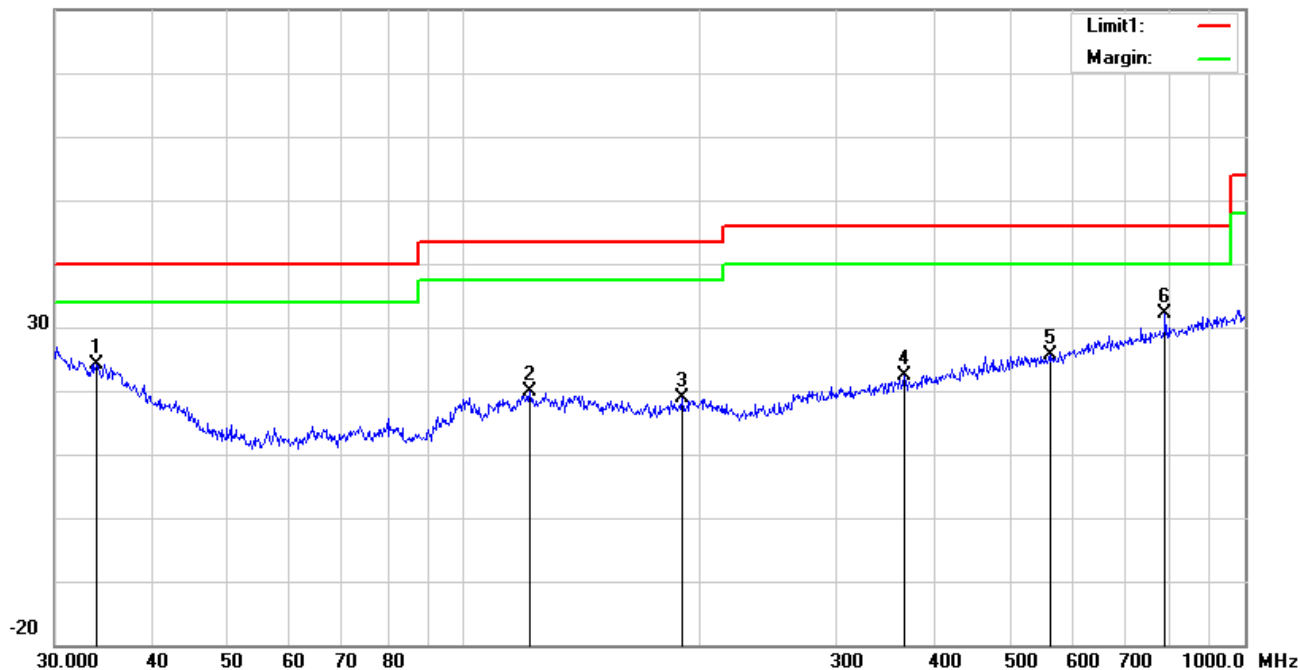
CHANNEL	TX Middle Channel	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

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	33.9174	26.65	18.46	21.62	0.64	24.13	40.00	-15.87	169	73
2	121.5486	27.25	13.04	21.65	1.12	19.76	43.50	-23.74	150	192
3	190.4050	26.98	12.24	21.78	1.36	18.80	43.50	-24.70	140	83
4	366.8231	27.76	14.74	22.00	1.87	22.37	46.00	-23.63	149	94
5	562.6624	27.24	18.30	22.03	2.24	25.75	46.00	-20.25	151	339
6	790.6188	29.98	21.27	21.72	2.67	32.20	46.00	-13.80	146	256

REMARKS:

1. Result (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Gain (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Result level – Limit value

80.0 dBuV/m



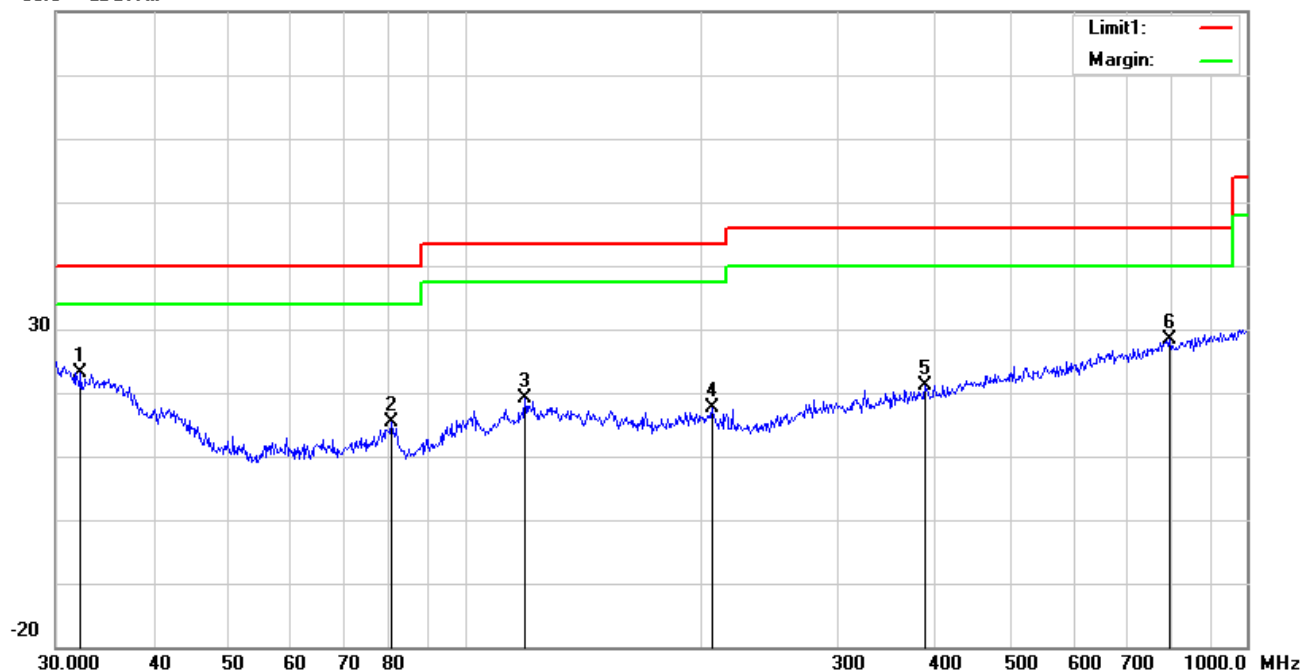
CHANNEL	TX Middle Channel	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

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	32.2925	24.54	19.60	21.63	0.63	23.14	40.00	-16.86	132	256
2	80.6442	28.69	7.39	21.61	0.92	15.39	40.00	-24.61	161	240
3	119.4361	26.83	12.77	21.65	1.11	19.06	43.50	-24.44	161	218
4	207.1226	25.83	12.16	21.81	1.41	17.59	43.50	-25.91	150	306
5	387.9920	26.01	15.26	22.00	1.91	21.18	46.00	-24.82	148	92
6	796.1830	26.18	21.35	21.71	2.68	28.50	46.00	-17.50	145	259

REMARKS:

1. Result (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Gain (dB).
3. The emission levels of other frequencies were less than 20dB margin against the limit.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Result level – Limit value

80.0 dBuV/m



ABOVE 1GHz WORST-CASE DATA:

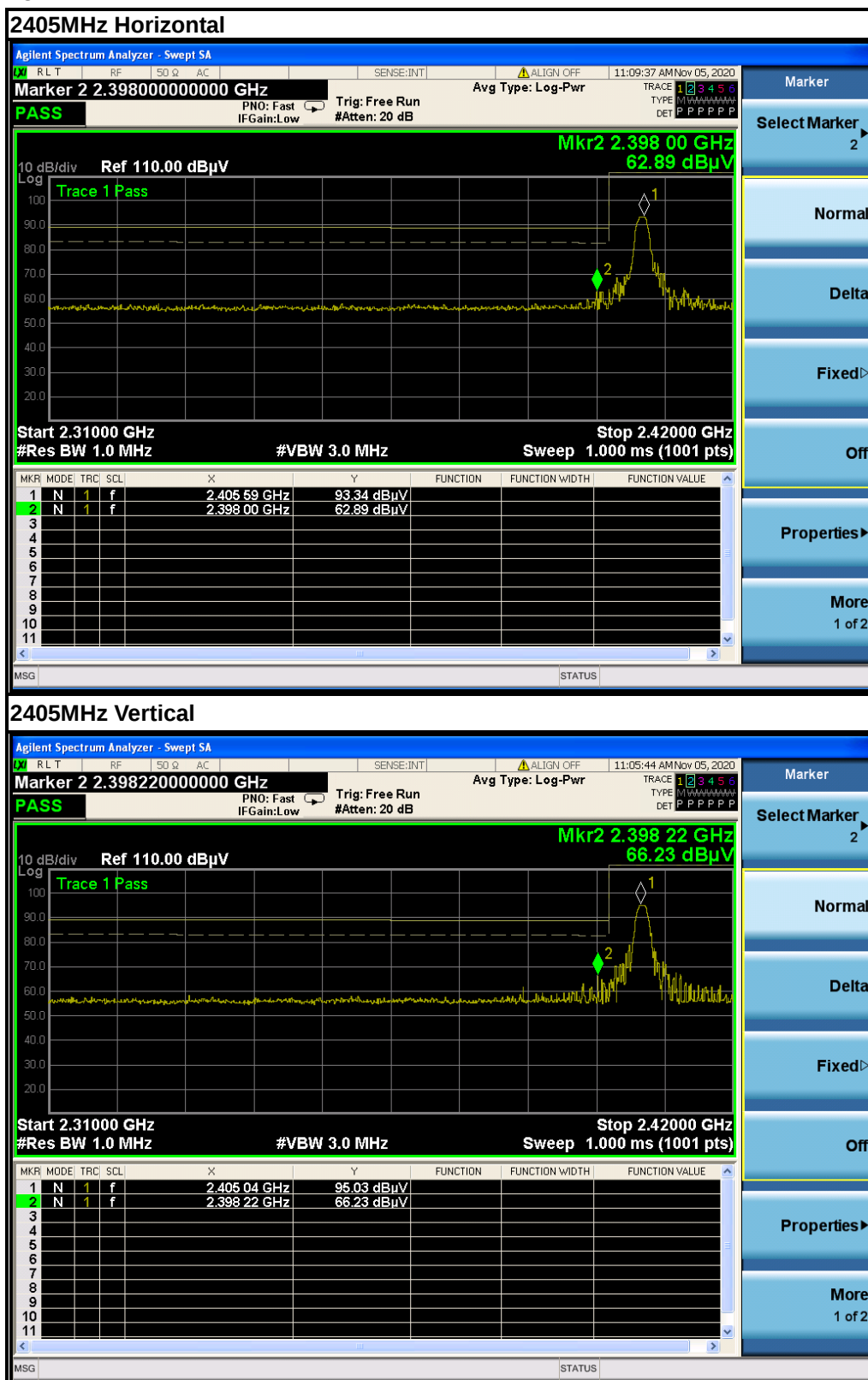
CHANNEL	TX Low Channel	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	FREQ.	Emission Level	Limit	Margin	Height	Degree	Raw Value	Correction Factor
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	(dBuV)	(dB/m)
1	2398	62.89 PK	74	-11.11	135	113	74.27	-11.38
2	2398	45.03 AV	54	-8.97	135	113	56.41	-11.38
3	*2405	93.34 PK	114	-20.66	133	255	104.72	-11.38
4	*2405	75.48 AV	94	-18.52	133	255	86.86	-11.38
5	4810	50.63 PK	74	-23.37	165	227	56.7	-6.07
6	4810	32.77 AV	54	-21.23	165	227	38.84	-6.07
7	7215	51.91 PK	74	-22.09	131	67	51.62	0.29
8	7215	34.05 AV	54	-19.95	131	67	33.76	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	FREQ.	Emission Level	Limit	Margin	Height	Degree	Raw Value	Correction Factor
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	(dBuV)	(dB/m)
1	2398.22	66.23 PK	74	-7.77	160	101	77.61	-11.38
2	2398.22	48.37 AV	54	-5.63	160	101	59.75	-11.38
3	*2405	95.03 PK	114	-18.97	145	220	106.41	-11.38
4	*2405	77.17 AV	94	-16.83	145	220	88.55	-11.38
5	4810	51.81 PK	74	-22.19	156	1	57.88	-6.07
6	4810	33.95 AV	54	-20.05	156	1	40.02	-6.07
7	7215	52.71 PK	74	-21.29	135	122	52.42	0.29
8	7215	34.85 AV	54	-19.15	135	122	34.56	0.29

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) - Pre-amplifier Gain (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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	FREQ.	Emission Level	Limit	Margin	Height	Degree	Raw Value	Correction Factor
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	(dBuV)	(dB/m)
1	*2445	79.98 PK	114	-34.02	131	131	91.36	-11.38
2	*2445	62.12 AV	94	-31.88	131	131	73.5	-11.38
3	4890	52.17 PK	74	-21.83	151	352	58.24	-6.07
4	4890	34.31 AV	54	-19.69	151	352	40.38	-6.07
5	7335	51.76 PK	74	-22.24	160	301	51.47	0.29
6	7335	33.9 AV	54	-20.1	160	301	33.61	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	FREQ.	Emission Level	Limit	Margin	Height	Degree	Raw Value	Correction Factor
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	(dBuV)	(dB/m)
1	*2445	78.75 PK	114	-35.25	156	107	90.13	-11.38
2	*2445	60.89 AV	94	-33.11	156	107	72.27	-11.38
3	4890	50.89 PK	74	-23.11	148	14	56.96	-6.07
4	4890	33.03 AV	54	-20.97	148	14	39.1	-6.07
5	7335	51.22 PK	74	-22.78	164	150	50.93	0.29
6	7335	33.36 AV	54	-20.64	164	150	33.07	0.29

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) - Pre-amplifier Gain (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)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	FREQ.	Emission Level	Limit	Margin	Height	Degree	Raw Value	Correction Factor
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	(dBuV)	(dB/m)
1	2483.5	54.8 PK	74	-19.2	150	272	66.18	-11.38
2	2483.5	36.94 AV	54	-17.06	150	272	48.32	-11.38
3	*2475	85.33 PK	114	-28.67	155	196	96.71	-11.38
4	*2475	67.47 AV	94	-26.53	155	196	78.85	-11.38
5	4950	52.97 PK	74	-21.03	137	79	59.04	-6.07
6	4950	35.11 AV	54	-18.89	137	79	41.18	-6.07
7	7425	53.1 PK	74	-20.9	151	339	52.81	0.29
8	7425	35.24 AV	54	-18.76	151	339	34.95	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	FREQ.	Emission Level	Limit	Margin	Height	Degree	Raw Value	Correction Factor
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)	(dBuV)	((dB/m)
1	2494.15	61.11 PK	74	-12.89	154	179	72.49	-11.38
2	2494.15	43.25 AV	54	-10.75	154	179	54.63	-11.38
3	*2475	94.72 PK	114	-19.28	139	281	106.1	-11.38
4	*2475	76.86 AV	94	-17.14	139	281	88.24	-11.38
5	4950	52.98 PK	74	-21.02	169	82	59.05	-6.07
6	4950	35.12 AV	54	-18.88	169	82	41.19	-6.07
7	7425	52.09 PK	74	-21.91	132	33	51.8	0.29
8	7425	34.23 AV	54	-19.77	132	33	33.94	0.29

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) - Pre-amplifier Gain (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. 28, 19	Dec. 27, 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-225 DH	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.

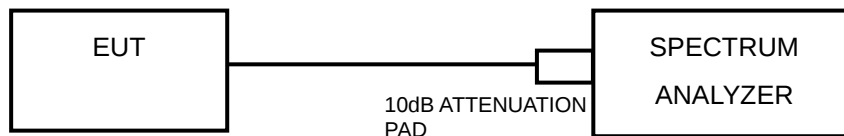
4.2.3 TEST PROCEDURE

- 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



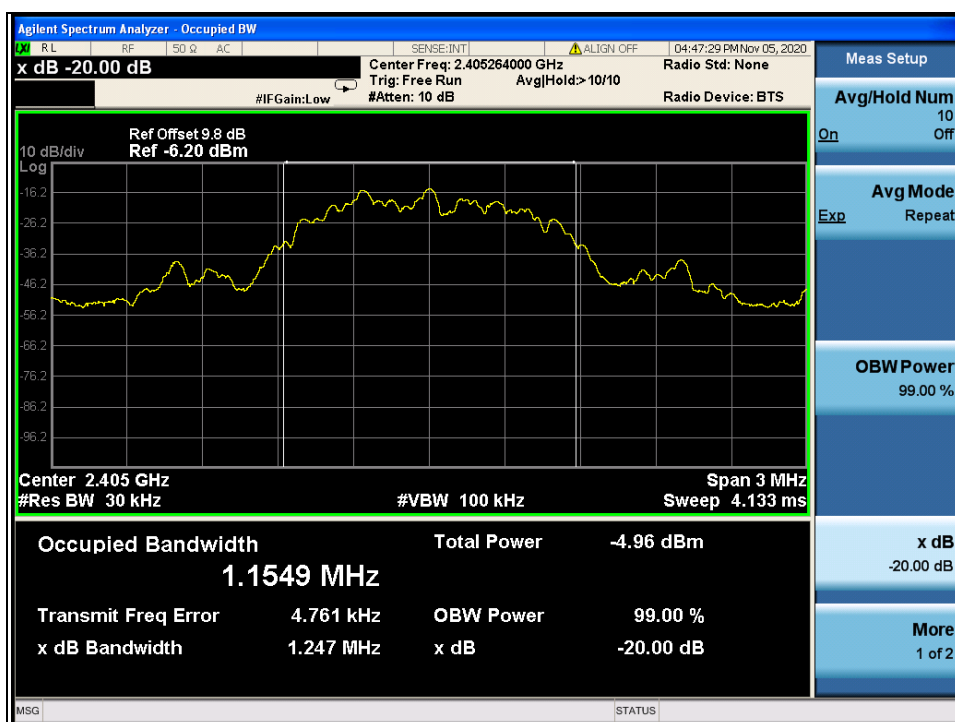
4.2.6 EUT OPERATING CONDITIONS

- 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.

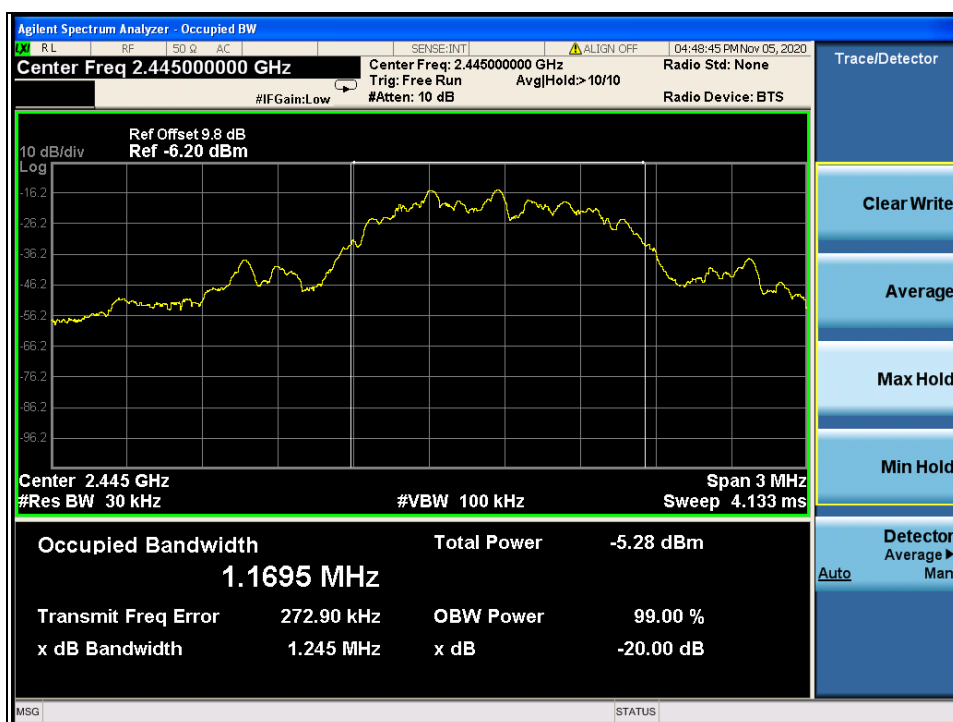
4.2.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
Low	2405	1.247
Middle	2445	1.245
High	2475	1.242

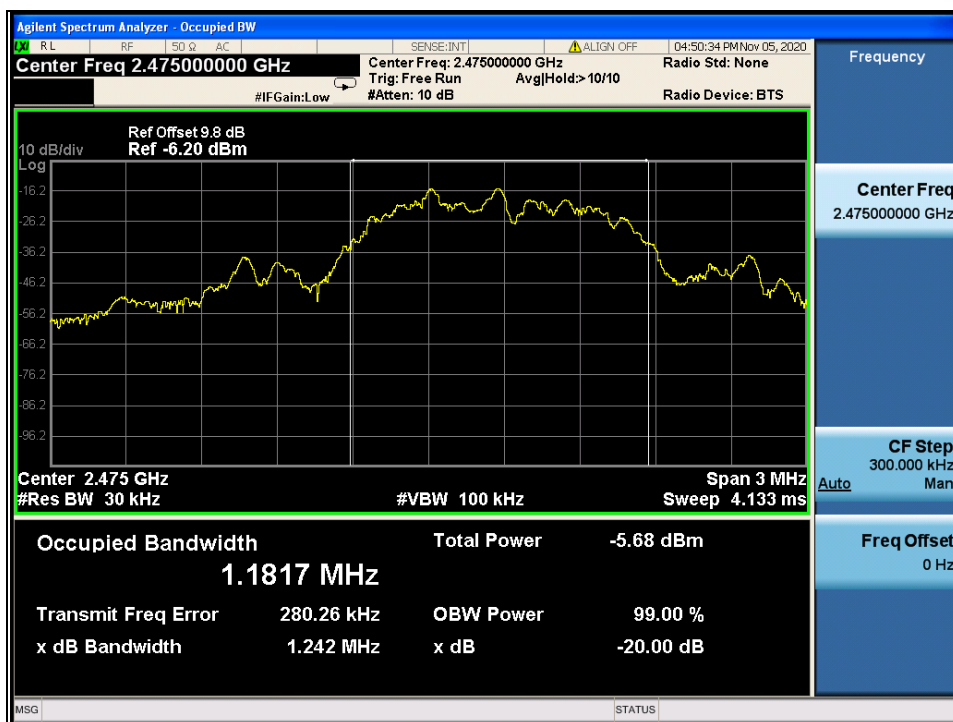
Test Data: Low channel



Test Data: Middle channel



Test Data: High channel



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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---