FCC RADIO TEST REPORT

FCC ID:Z26-BIGFOOT

Product：	Intelligent tracking robot
Trade Name：	N/A
Model Name：	Bigfoot 2.0
Serial Model：	Bigfoot 1.0,Bigfoot 3.0,Bigfoot 4.0,Bigfoot 5.0, Bigfoot 6.0,Bigfoot 7.0,Bigfoot 8.0
Report No.：	NTEK-2014NT0401419F

Prepared for

FTR Systems(Shanghai) Inc.

139 Pu Tuo Rd, Liutuan Town, Pudong District, Shanghai,China

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name ..... FTR Systems(Shanghai) Inc.

Address ..... 139 Pu Tuo Rd, Liutuan Town, Pudong District, Shanghai,China

Manufacture's Name... Shanghai Ying Yu Electronic Co., Ltd.

Address ..... 68 Yuan Ye Rd,Volkswagen Industrail Park. Anting Town,Jiading District,Shanghai,China

Product description

Product name ..... Intelligent tracking robot

Model and/or type reference ..... Bigfoot 2.0

Serial Model ..... Bigfoot 1.0,Bigfoot 3.0,Bigfoot 4.0,Bigfoot 5.0, Bigfoot 6.0,Bigfoot 7.0,Bigfoot 8.0

Standards ..... FCC Part15.247

Test procedure ..... ANSI C63.4-2003

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test .....

Date (s) of performance of tests ..... 01 Apr. 2014 ~24 Apr. 2014

Date of Issue..... 24 Apr. 2014

Test Result..... **Pass**

Testing Engineer : Apple Huang

(Apple Huang)

Technical Manager : Brown Lu

(Brown Lu)

Authorized Signatory : Bovey Yang

(Bovey Yang)

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd
Add.:1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC Registration No.:238937; IC Registration No.:9270A-1
CNAS Registration No.:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Intelligent tracking robot</td></tr>
<tr><td>Trade Name</td><td>N/A</td></tr>
<tr><td>Model Name</td><td>Bigfoot 2.0</td></tr>
<tr><td>Serial Model</td><td>Bigfoot 1.0,Bigfoot 3.0,Bigfoot 4.0,Bigfoot 5.0,
Bigfoot 6.0,Bigfoot 7.0,Bigfoot 8.0</td></tr>
<tr><td>Model Difference</td><td>All the models are the same circuit and RF module, except the mode names and colours.</td></tr>
<tr><td>Product Description</td><td>The EUT is a Intelligent tracking robot
<table>
<tr><td>Operation Frequency:</td><td>2403~2480 MHz</td></tr>
<tr><td>Modulation Type:</td><td>OQPSK</td></tr>
<tr><td>Number Of Channel</td><td>78CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Output Power(Conducted):</td><td>3.53 dBm (Max.)</td></tr>
<tr><td>Antenna Gain (dBi)</td><td>2.5dbi</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Ratings</td><td>DC 37V</td></tr>
<tr><td>Adapter</td><td>model: SSLC084V42M
Input:AC 100V-240V~,1.8A MAX,50-60Hz
Output:42V⎓,2A</td></tr>
<tr><td>Battery</td><td>DC 37V</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		
27	2429	54	2456		

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	External Antenna	N/A	2.5	Antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 1	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	Link Mode

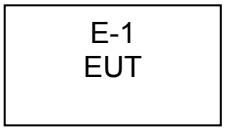
Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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	Brand	Model/Type No.	Series No.	Note
E-1	Intelligent tracking robot	N/A	Bigfoot 2.0	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2013.07.06	2014.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2013.06.07	2014.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2013.07.06	2014.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2013.06.07	2014.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2013.06.07	2014.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2013.07.06	2014.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2013.07.06	2014.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2013.06.08	2014.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2013.07.06	2014.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2013.07.06	2014.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2013.06.06	2014.06.05	1 year
2	LISN	R&S	ENV216	101313	2013.08.24	2014.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2013.08.24	2014.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2013.06.07	2014.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2013.06.07	2014.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2013.06.08	2014.06.07	1 year

1	Attenuation	MCE	24-10-34	BN9258	2013.06.08	2014.06.07	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

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

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

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

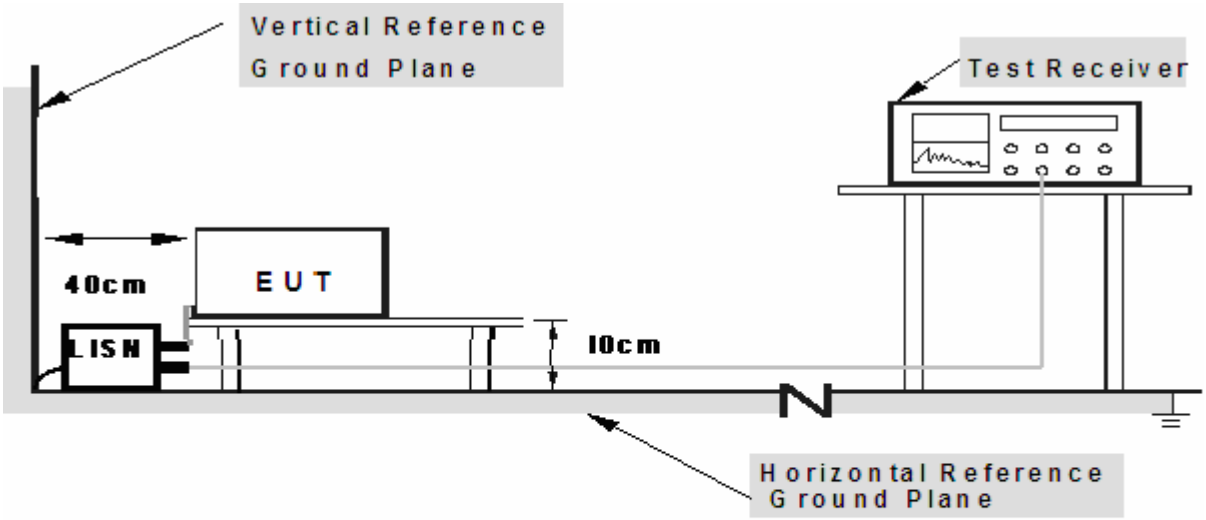
3.1.2 TEST PROCEDURE

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 –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

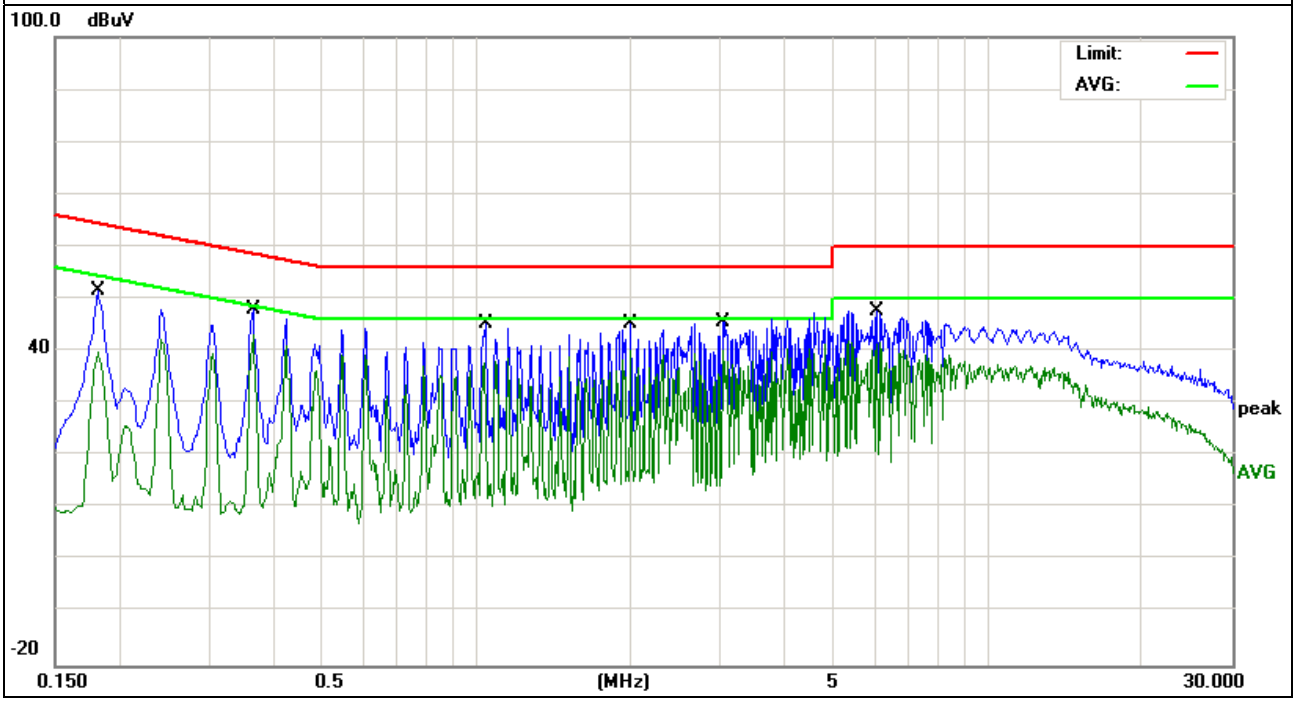
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

EUT：	Intelligent tracking robot	Model Name. ：	Bigfoot 2.0
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 42V form adapter AC 120V/50Hz	Test Mode：	Mode 1

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1819	41.87	9.79	51.66	64.39	-12.73	QP
0.1819	30.21	9.79	40.00	54.39	-14.39	AVG
0.3660	37.97	10.01	47.98	58.59	-10.61	QP
0.3660	33.03	10.01	43.04	48.59	-5.55	AVG
1.0460	35.05	10.15	45.20	56.00	-10.80	QP
1.0460	27.61	10.15	37.76	46.00	-8.24	AVG
2.0059	35.04	10.25	45.29	56.00	-10.71	QP
2.0059	29.86	10.25	40.11	46.00	-5.89	AVG
3.0380	35.36	10.30	45.66	56.00	-10.34	QP
3.0380	29.96	10.30	40.26	46.00	-5.74	AVG
6.0739	37.27	10.41	47.68	60.00	-12.32	QP
6.0739	31.25	10.41	41.66	50.00	-8.34	AVG

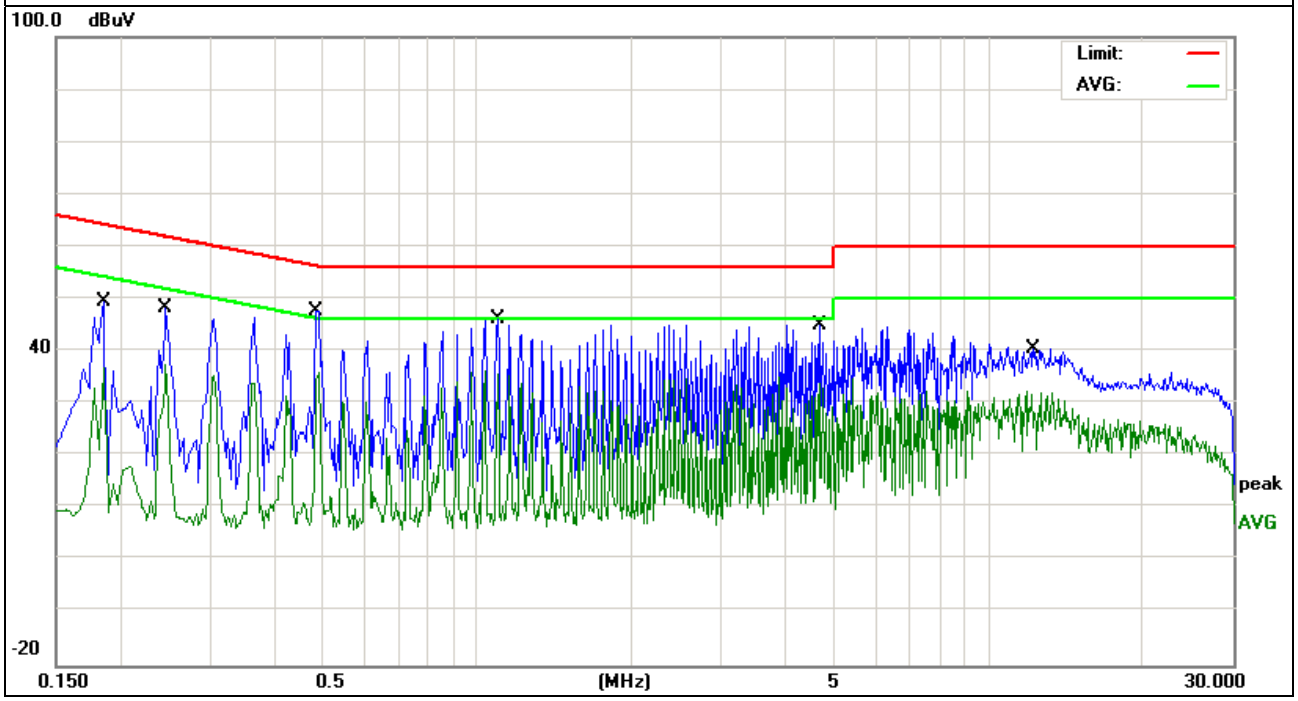
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent tracking robot	Model Name. ：	Bigfoot 2.0
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 42V form adapter AC 120V/50Hz	Test Mode：	Mode 1

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1860	39.74	9.79	49.53	64.21	-14.68	QP
0.1860	27.14	9.79	36.93	54.21	-17.28	AVG
0.2460	38.36	9.84	48.20	61.89	-13.69	QP
0.2460	27.47	9.84	37.31	51.89	-14.58	AVG
0.4860	37.55	10.18	47.73	56.24	-8.51	QP
0.4860	25.77	10.18	35.95	46.24	-10.29	AVG
1.0940	35.92	10.16	46.08	56.00	-9.92	QP
1.0940	25.63	10.16	35.79	46.00	-10.21	AVG
4.6819	34.47	10.37	44.84	56.00	-11.16	QP
4.6819	23.40	10.37	33.77	46.00	-12.23	AVG
12.2259	30.14	10.33	40.47	60.00	-19.53	QP
12.2259	21.35	10.33	31.68	50.00	-18.32	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / *10Hz* for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. 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. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

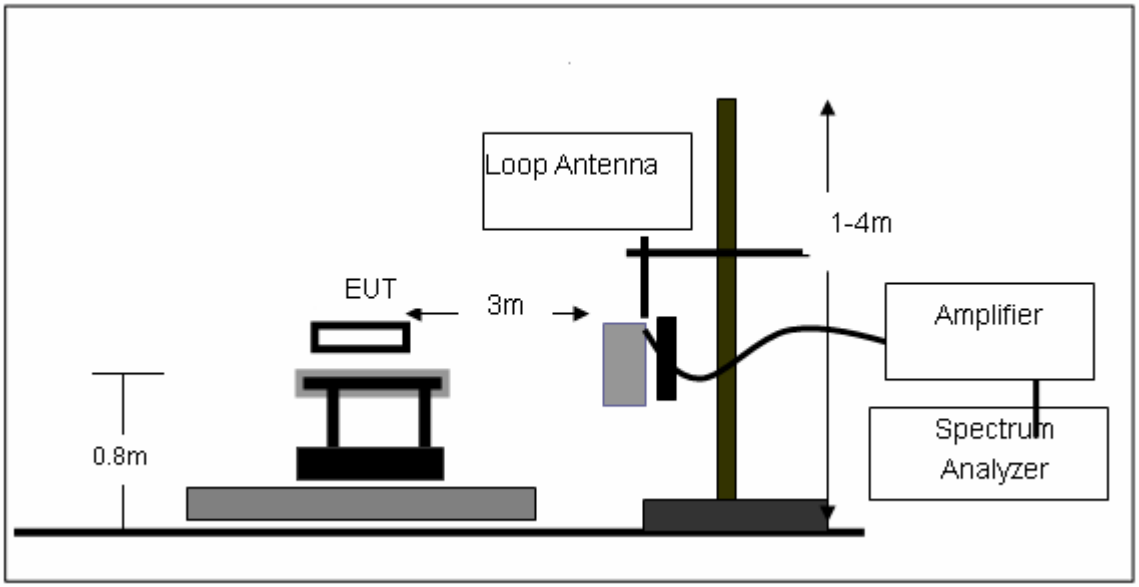
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

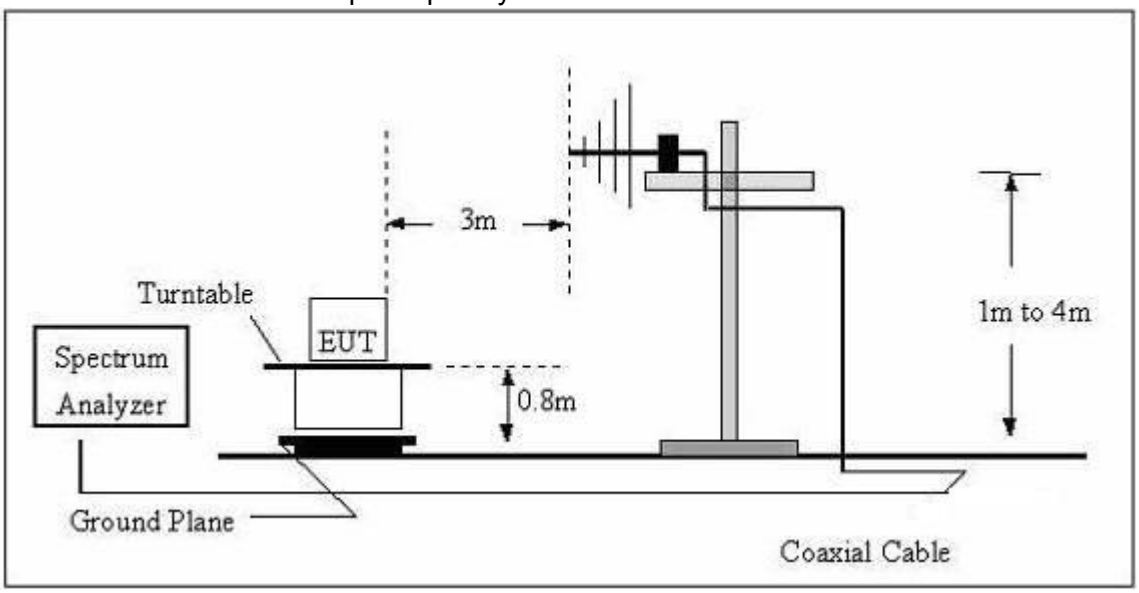
No deviation

3.2.4 TEST SETUP

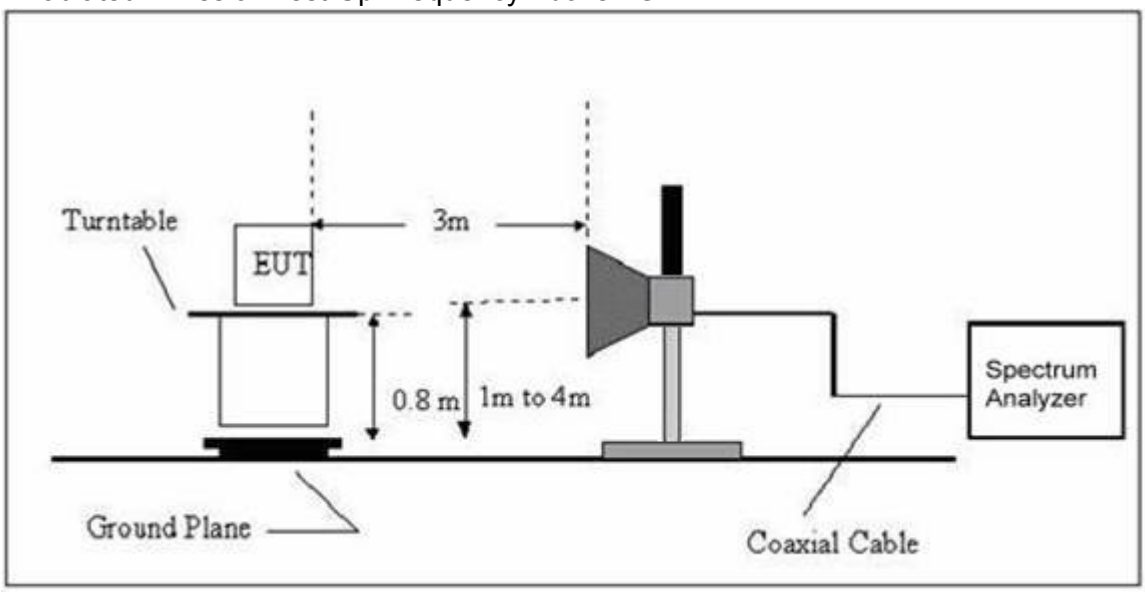
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

EUT：	Intelligent tracking robot	Model Name. ：	Bigfoot 2.0
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 37V
Test Mode ：	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	N/A
--	--	--	--	N/A

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT：	Intelligent tracking robot	Model Name ：	Bigfoot 2.0
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 37V form Battery
Test Mode ：	TX		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detect or Type	Comment
Low Channel (2403 MHz)-Below 1G							
50.2324	24.71	8.97	33.68	40.00	-6.32	QP	Vertical
73.8756	20.43	7.45	27.88	40.00	-12.12	QP	Vertical
125.0066	17.36	12.21	29.57	43.50	-13.93	QP	Vertical
182.5592	23.51	9.61	33.12	43.50	-10.38	QP	Vertical
240.8302	19.94	9.72	29.66	46.00	-16.34	QP	Vertical
562.6624	7.64	20.52	28.16	46.00	-17.84	QP	Vertical
40.1347	22.87	13.84	36.71	40.00	-3.29	QP	Horizontal
50.2324	27.70	8.97	36.67	40.00	-3.33	QP	Horizontal
70.8315	25.39	6.97	32.36	40.00	-7.64	QP	Horizontal
129.9225	17.80	11.64	29.44	43.50	-14.06	QP	Horizontal
191.0738	27.19	8.61	35.80	43.50	-7.70	QP	Horizontal
796.1829	1.92	25.77	27.69	46.00	-18.31	QP	Horizontal
Middel Channel (2450 MHz)-Below 1G							
41.8596	14.44	13.09	27.53	40.00	-12.47	QP	Vertical
50.5859	24.67	8.84	33.51	40.00	-6.49	QP	Vertical
185.7880	24.01	9.11	33.12	43.50	-10.38	QP	Vertical
235.8163	18.79	9.30	28.09	46.00	-17.91	QP	Vertical
416.1791	8.33	17.15	25.48	46.00	-20.52	QP	Vertical
793.3958	7.10	25.63	32.73	46.00	-13.27	QP	Vertical
31.9542	17.26	18.07	35.33	40.00	-4.67	QP	Horizontal
41.5670	21.78	13.21	34.99	40.00	-5.01	QP	Horizontal
73.1025	22.16	7.33	29.49	40.00	-10.51	QP	Horizontal
135.9822	14.32	11.43	25.75	43.50	-17.75	QP	Horizontal
186.4404	26.47	9.05	35.52	43.50	-7.98	QP	Horizontal
782.3451	1.69	24.29	25.98	46.00	-20.02	QP	Horizontal

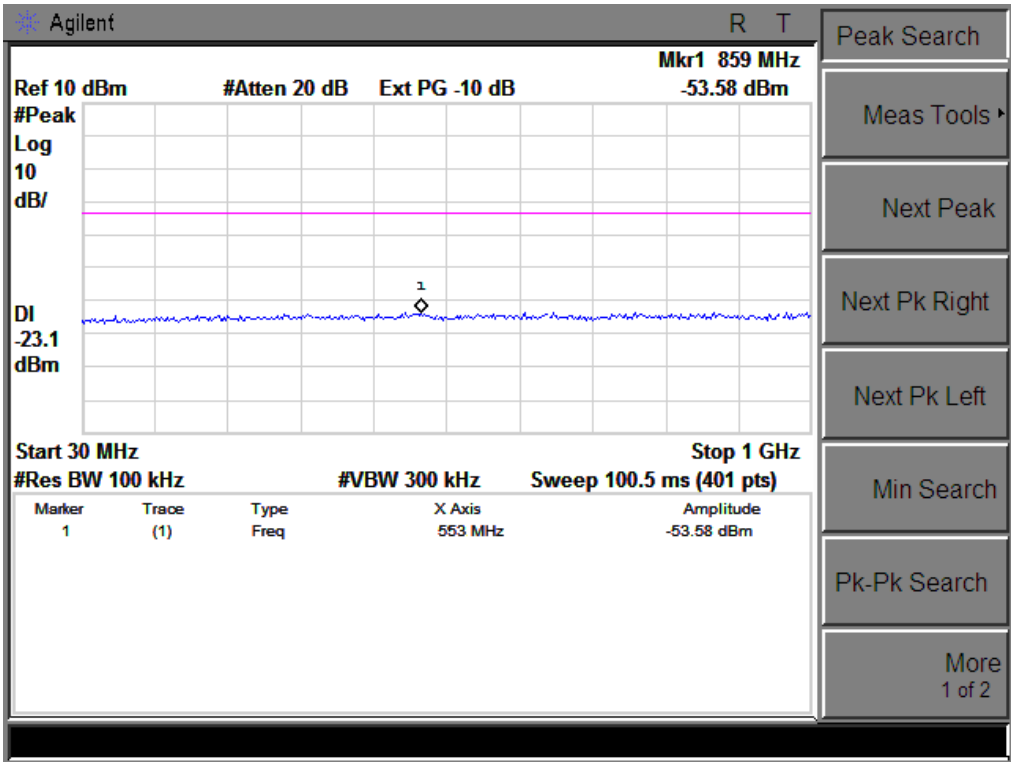
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detect or Type	Comment
High Channel (2480 MHz)-Below 1G							
50.2324	25.18	8.97	34.15	40.00	-5.85	QP	Vertical
85.5977	15.85	9.29	25.14	40.00	-14.86	QP	Vertical
123.2655	16.78	12.41	29.19	43.50	-14.31	QP	Vertical
164.3300	18.42	10.84	29.26	43.50	-14.24	QP	Vertical
307.8312	9.62	14.98	24.60	46.00	-21.40	QP	Vertical
782.3451	6.38	24.29	30.67	46.00	-15.33	QP	Vertical
35.8746	17.64	16.05	33.69	40.00	-6.31	QP	Horizontal
53.5052	26.22	7.84	34.06	40.00	-5.94	QP	Horizontal
68.3906	20.42	5.95	26.37	40.00	-13.63	QP	Horizontal
164.3300	19.74	10.84	30.58	43.50	-12.92	QP	Horizontal
286.9823	9.10	14.25	23.35	46.00	-22.65	QP	Horizontal
760.7036	1.52	22.02	23.54	46.00	-22.46	QP	Horizontal

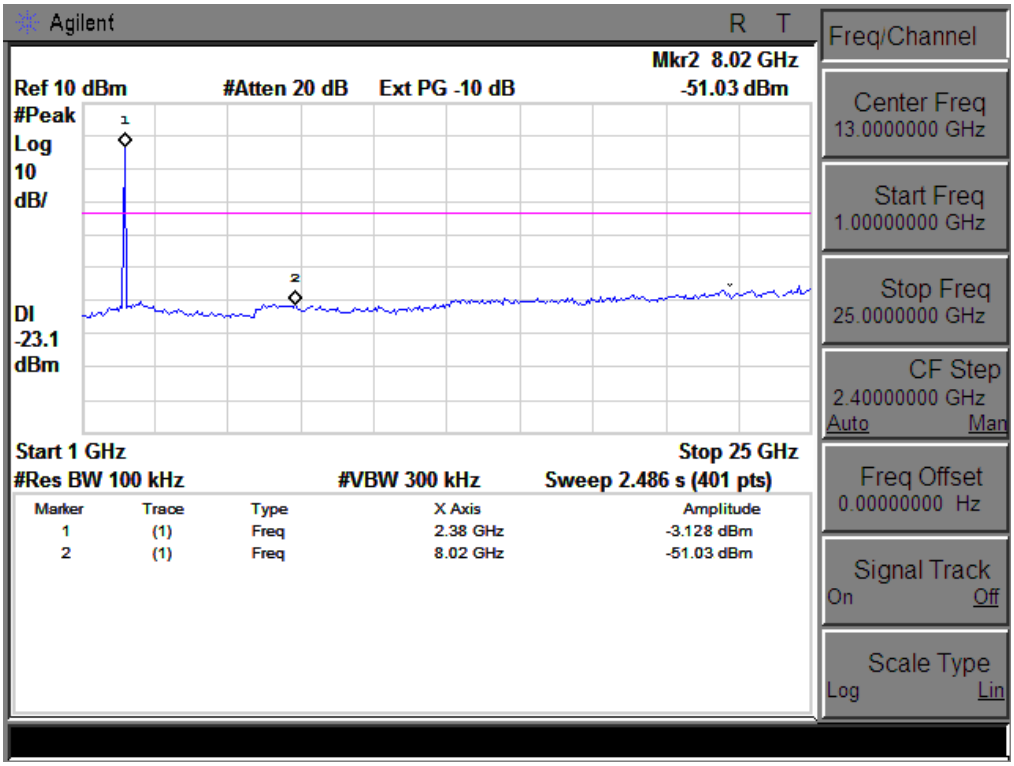
3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detect or Type	Comment
Low Channel (2403 MHz)-Above 1G							
4806	54.20	10.40	64.60	74.00	-9.40	Pk	Vertical
4806	33.87	10.40	44.27	54.00	-9.73	Av	Vertical
7209	45.65	12.39	58.04	74.00	-15.96	Pk	Vertical
7209	29.59	12.39	41.98	54.00	-12.02	Av	Vertical
4806	55.69	10.40	66.09	74.00	-7.91	Pk	Horizontal
4806	35.25	10.40	45.65	54.00	-8.35	Av	Horizontal
7209	46.54	12.39	58.93	74.00	-15.07	Pk	Horizontal
7209	29.88	12.39	42.27	54.00	-11.73	Av	Horizontal
Middel Channel (2450 MHz)-Above 1G							
4900	54.43	10.28	64.71	74.00	-9.29	Pk	Vertical
4900	34.67	10.28	44.95	54.00	-9.05	Av	Vertical
7350	45.13	12.82	57.95	74.00	-16.05	Pk	Vertical
7350	28.62	12.82	41.44	54.00	-12.56	Av	Vertical
4900	52.72	10.28	63.00	74.00	-11.00	Pk	Horizontal
4900	32.37	10.28	42.65	54.00	-11.35	Av	Horizontal
7350	44.31	12.82	57.13	74.00	-16.87	Pk	Horizontal
7350	26.71	12.82	39.53	54.00	-14.47	Av	Horizontal
High Channel (2480 MHz)-Above 1G							
4960	52.82	10.46	63.28	74.00	-10.72	Pk	Vertical
4960	34.13	10.46	44.59	54.00	-9.41	Av	Vertical
7440	43.03	13.13	56.16	74.00	-17.84	Pk	Vertical
7440	28.69	13.13	41.82	54.00	-12.18	Av	Vertical
4960	55.08	10.46	65.54	74.00	-8.46	Pk	Horizontal
4960	35.01	10.46	45.47	54.00	-8.53	Av	Horizontal
7440	44.81	13.13	57.94	74.00	-16.06	Pk	Horizontal
7440	29.02	13.13	42.15	54.00	-11.85	Av	Horizontal

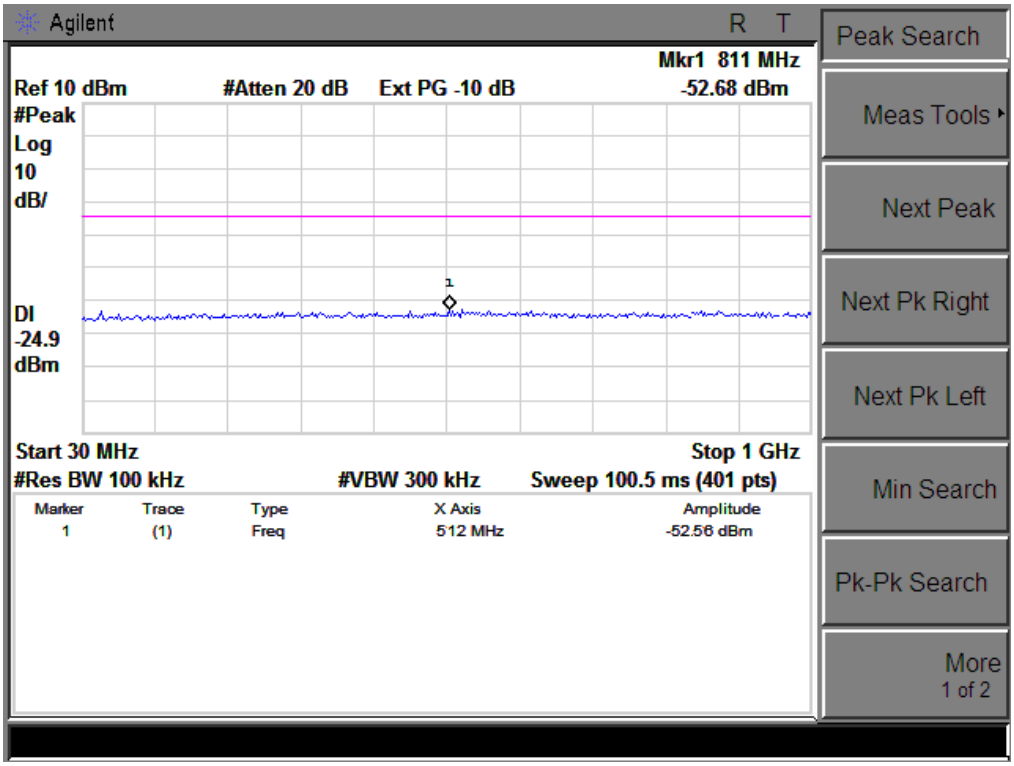
Conducted Spurious Emissions at Antenna Port:

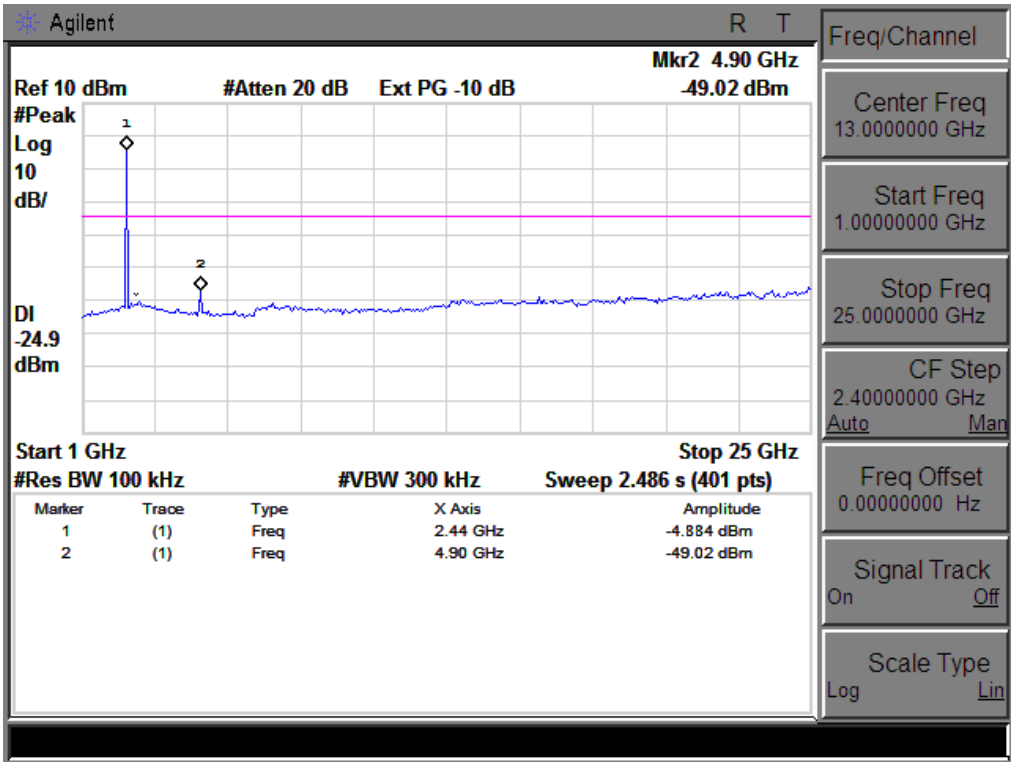
Low Channel



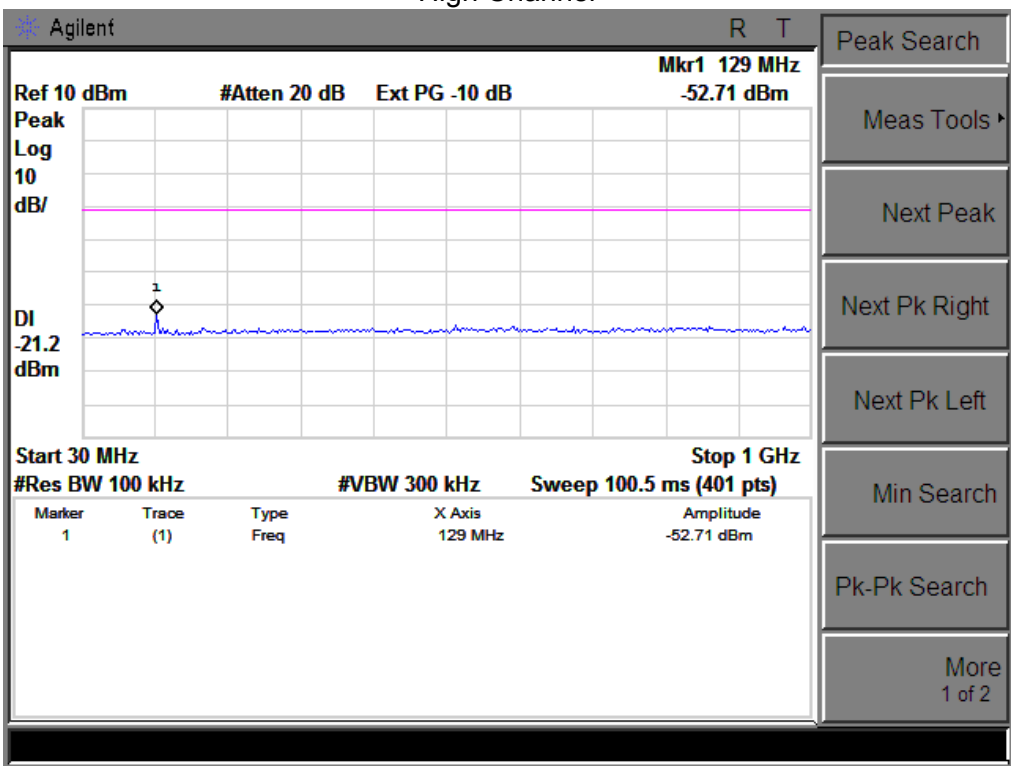


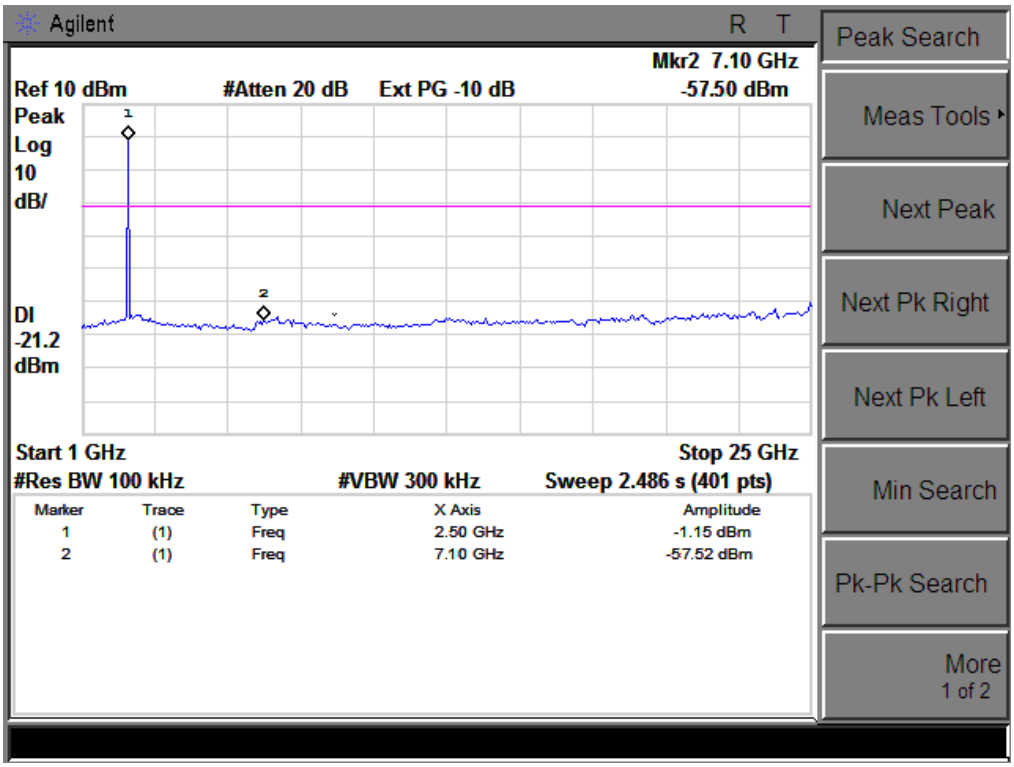
Middle Channel





High Channel





4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

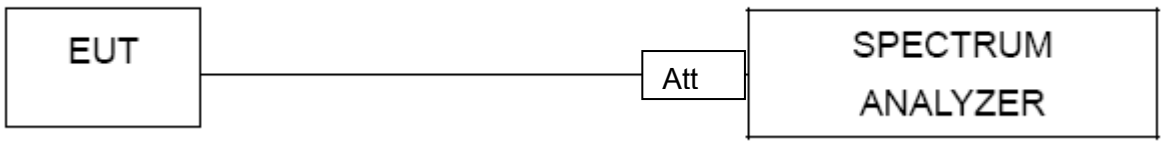
4.1.1 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. 3 kHz ≤Set the RBW≤100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

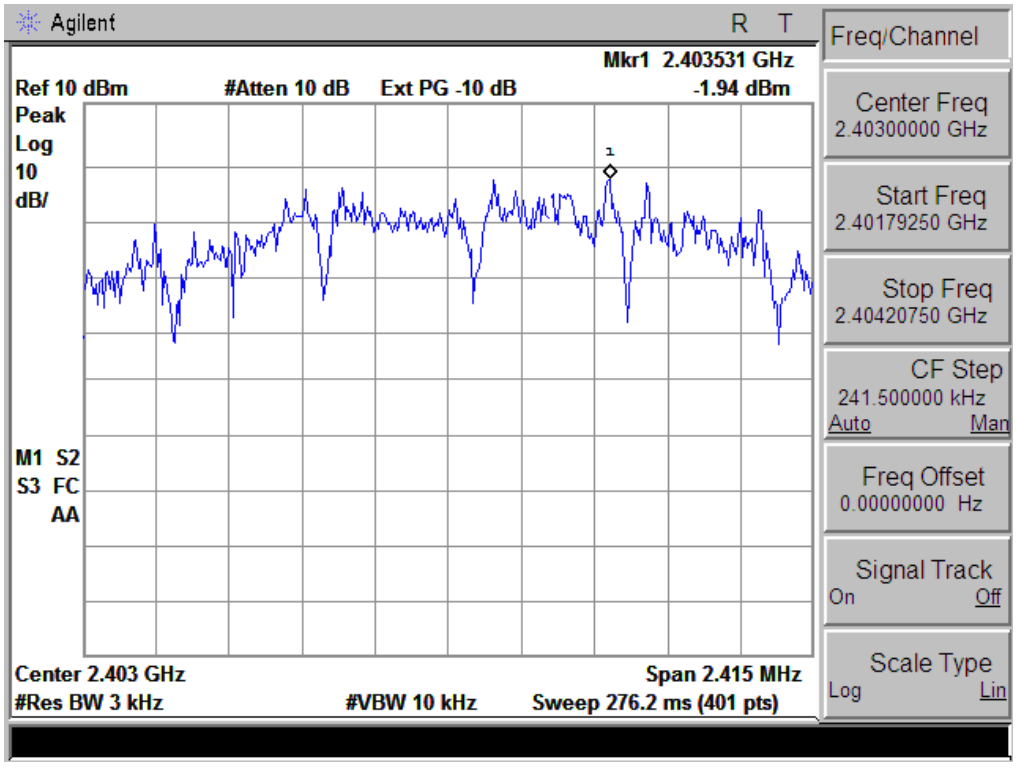
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

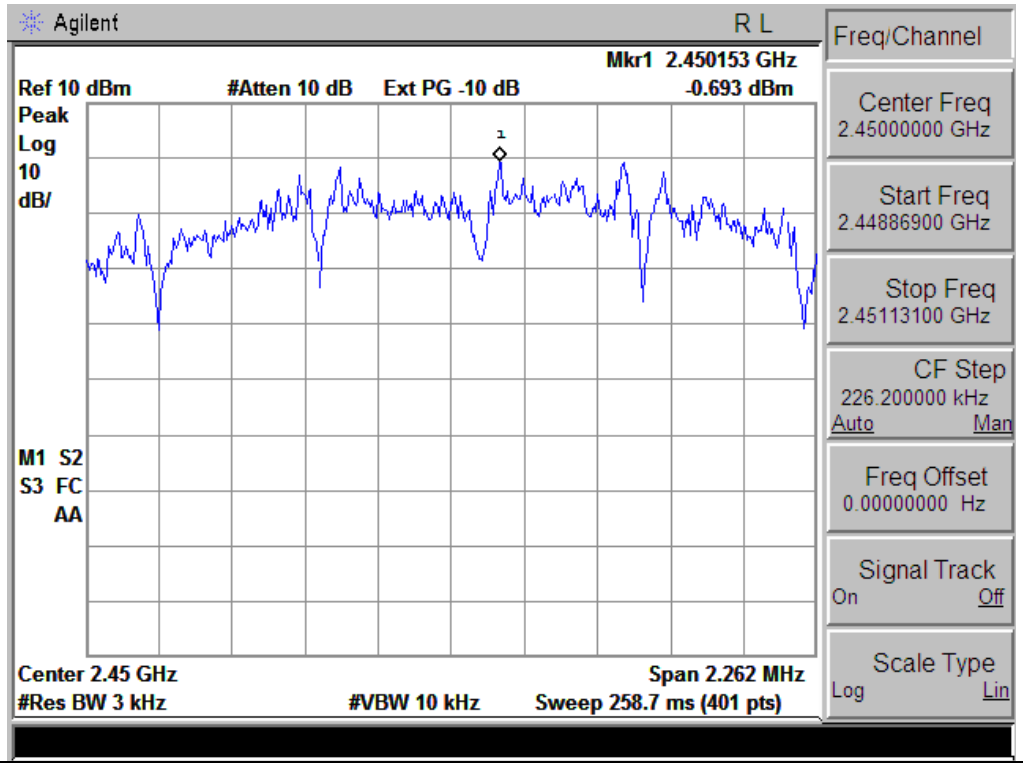
EUT：	Intelligent tracking robot	Model Name ：	Bigfoot 2.0
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 37V
Test Mode ：	TX Mode /CH01, CH48, CH78		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2403 MHz	-1.940	8	PASS
2450 MHz	-0.693	8	PASS
2480 MHz	-1.035	8	PASS

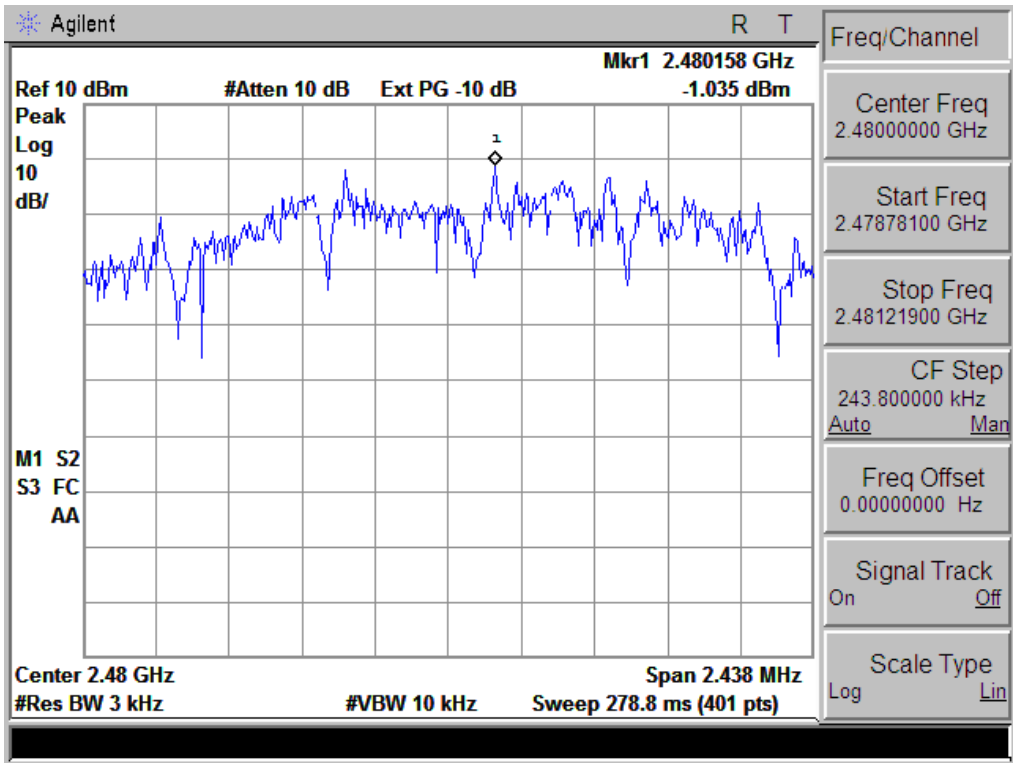
TX CH01



TX CH48



TX CH78



5. BANDWIDTH TEST

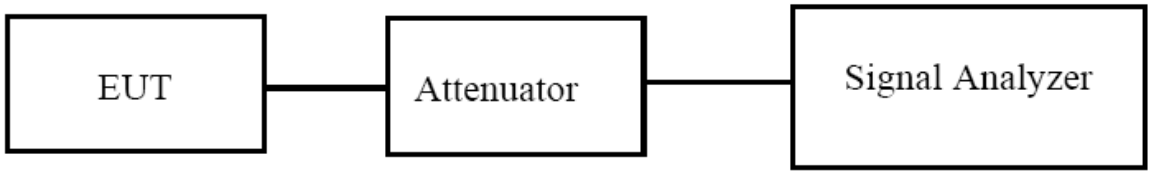
5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

5.1.1 TEST PROCEDURE

According to KDB 558074 D01 DTS Meas Guidance v03r01

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator
2. Position the EUT without connection to measurement instrument. 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.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



5.1.2 EUT OPERATION CONDITIONS

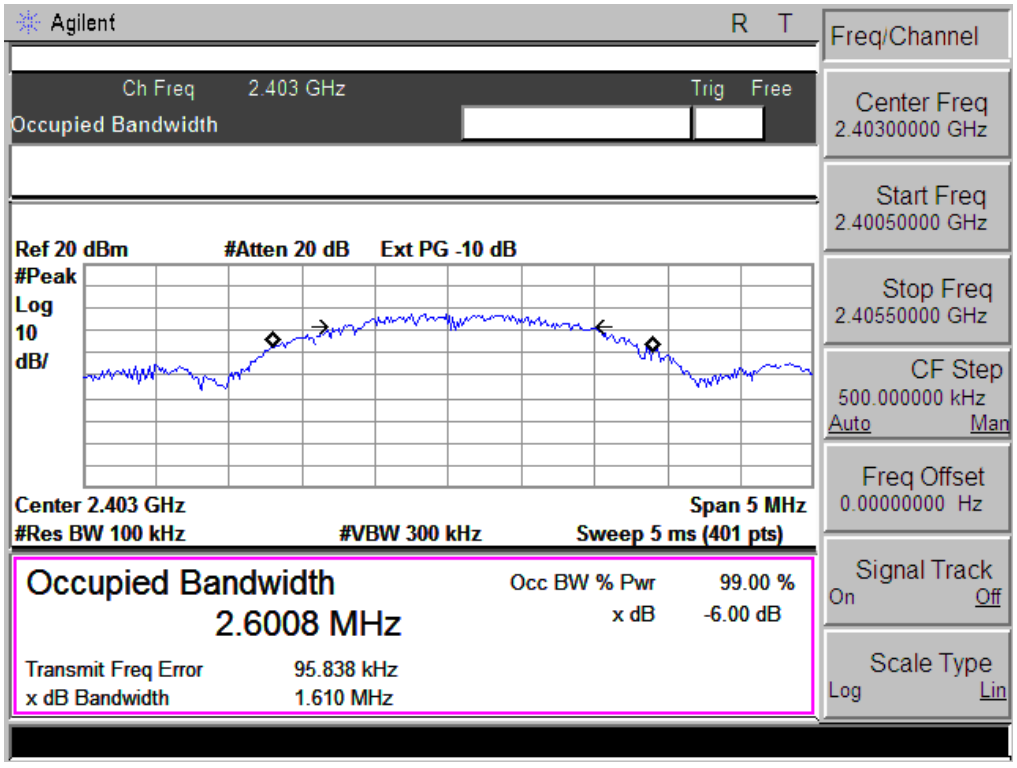
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.3 TEST RESULTS

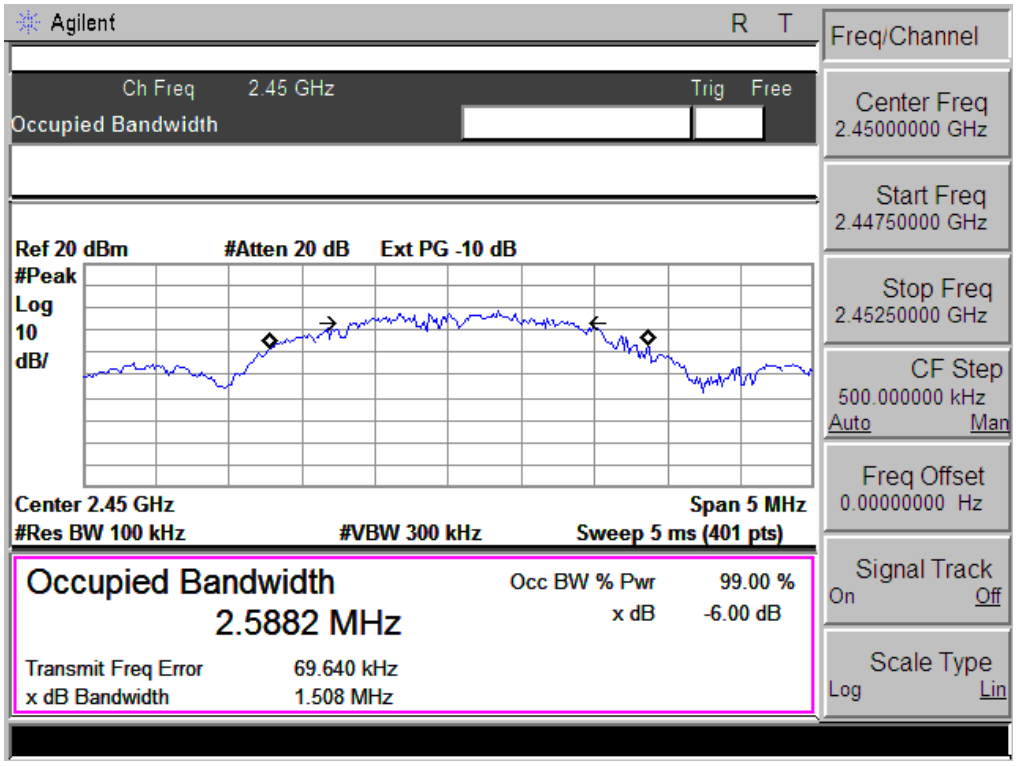
EUT：	Intelligent tracking robot	Model Name ：	Bigfoot 2.0
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 37V from battery
Test Mode ：	TX Mode /CH01, CH48, CH78		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2403	1.61	500	Pass
Middle	2450	1.51	500	Pass
High	2480	1.61	500	Pass

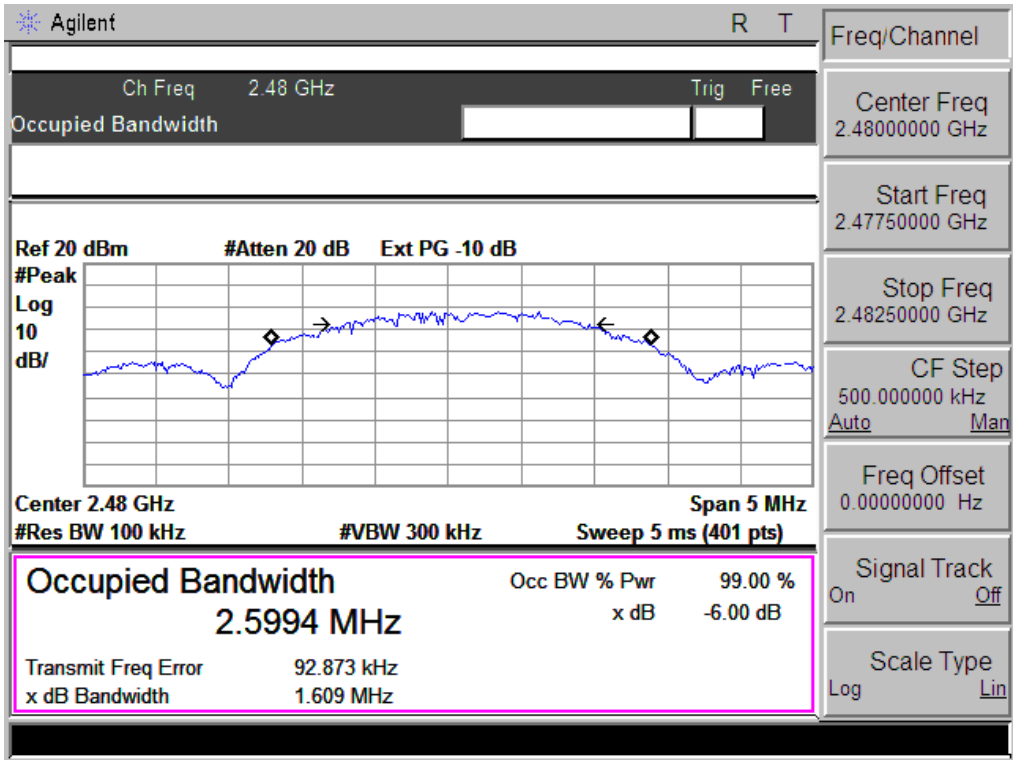
TX CH 01



TX CH 48



TX CH 78



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

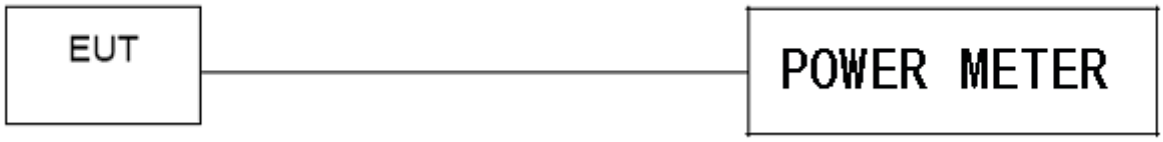
6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

EUT：	Intelligent tracking robot	Model Name ：	Bigfoot 2.0
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 37V from battery
Test Mode ：	TX Mode		

Test Channe	Frequency	Maximum Peak Conducted Output Power (PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2403	3.47	30
CH48	2450	3.39	30
CH78	2480	3.53	30

7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

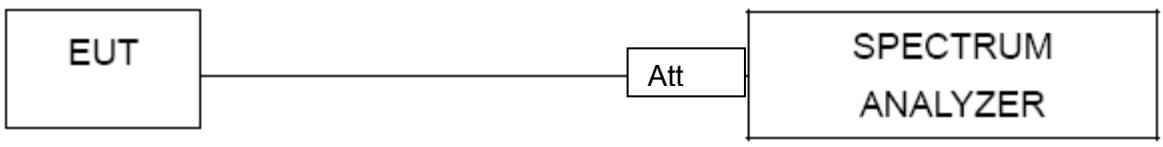
TEST PROCEDURE

a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
e) Repeat above procedures until all measured frequencies were complete.

7.1 DEVIATION FROM STANDARD

No deviation.

7.2 TEST SETUP



7.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.4 TEST RESULTS

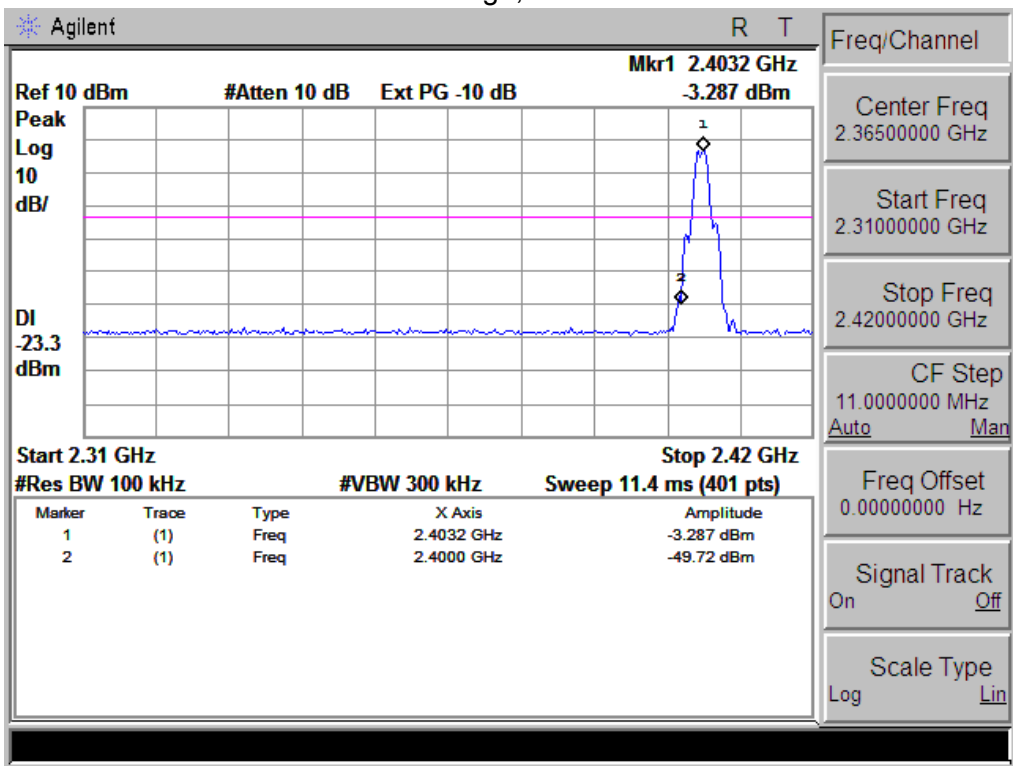
EUT：	Intelligent tracking robot	Model Name ：	Bigfoot 2.0
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 37V from battery

Frequency Band	Delta Peak to band emission (dBc)	＞Limit (dBc)	Result
Left-band	46.43	20	Pass
Right-band	46.02	20	Pass

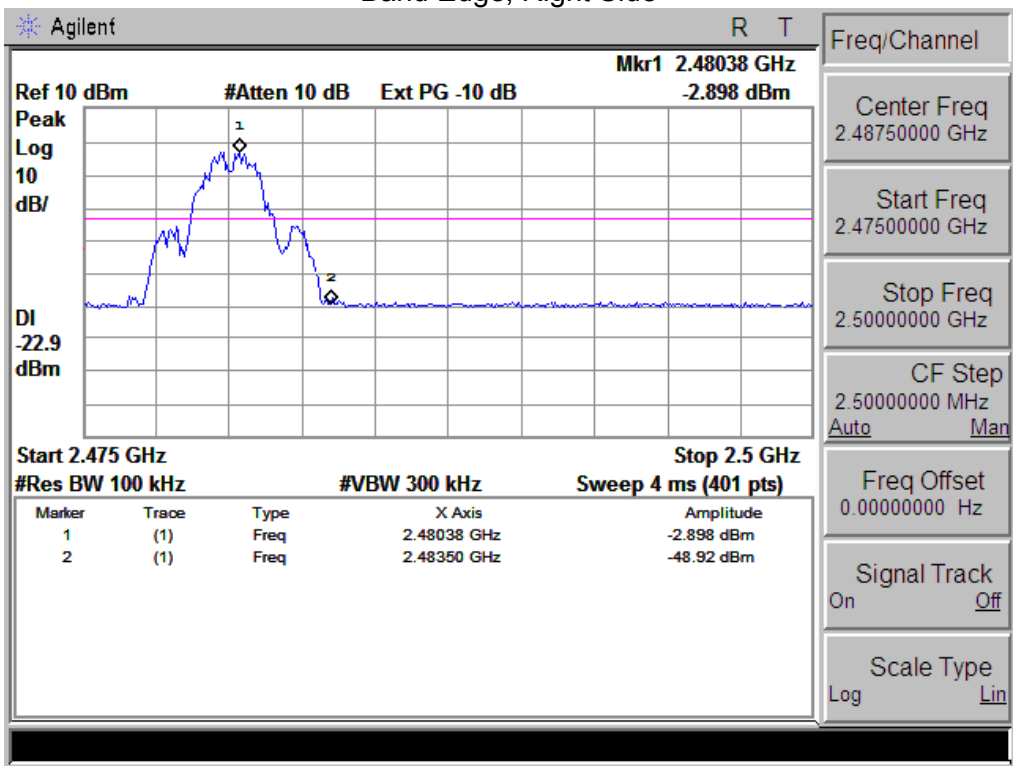
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		
2390	46.87	-13.06	33.81	74.00	-40.19	peak	Vertical
2390	47.54	-13.06	34.48	74.00	-39.52	peak	Horizontal
2483.5	48.95	-12.78	36.17	74.00	-37.83	peak	Vertical
2483.5	47.48	-12.78	34.70	74.00	-39.30	peak	Horizontal

Note: Test method to see chapter 3.2 . When PK value is lower than the Average value limit, average didn't record.

Band Edge, Left Side



Band Edge, Right Side



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2 EUT ANTENNA

The EUT antenna is External antenna. It comply with the standard requirement.

9. EUT TEST PHOTO

Radiated Measurement Photos

Conducted Measurement Photos