





FCC Test Report

FCC EVALUATION REPORT FOR CERTIFICATION	
Project Reference No.	271859
Product	Remote Training System
Brand Name	
Model	SCOUTTRAINER100
Alternate Model	N/A
Tested according to	FCC Rules and Regulations Part 15 Subpart C 2013 15.249 ANSI C63.4-2009

Tested in period	2014.08.28 to 2014.10.17
Issued date	2014.10.17
Name and address of the Test House	 Nemko Shanghai Ltd. Shenzhen Branch Unit CD, Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, China Phone : +86 755 8221 0420 Fax : +86 755 8221 3363
Tested by	 2014.10.17 <hr/> Zone Peng date
Verified by	 2014.10.17 <hr/> Daria Liu date

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1. Client Information

1.1 Applicant

Company Name: **Binatone Electronics International Ltd.**
Company Address: **Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong**

1.2 Manufacturer

Company Name: **Foshan Shunde Alford Electronics Co., Ltd.**
Company Address: **Xinjiao Industrial Park, DaLiang, ShunDe, Foshan City, Guangdong Province, China**

1.3 Scope

- Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

2. Equipment under Test (EUT)

2.1 Identification of EUT

Category: Remote Training System

Model Name: SCOUTRAINER100

Alternate model: N/A

Brand name:



Technical data
(Rating, etc.): As below

2.2 Detail spec:

Carrier Frequency: 915.5MHz-921.26MHz

Number of Channel: 25

Channel step: 240kHz

Channels List :

1. 915.5
2. 915.74
3. 915.98
4. 916.22
5. 916.46
6. 916.70
7. 916.94
8. 917.18
9. 917.42
10. 917.66
11. 917.90
12. 918.14
13. 918.38
14. 918.62
15. 918.86
16. 919.10
17. 919.34
18. 919.58
19. 919.82
20. 920.06
21. 920.30
22. 920.54
23. 920.78
24. 921.02
25. 921.26

Modulation Type: MSK

Mode of operation (duplex, simplex, half duplex) : duplex

Antenna Type: Intergral Antenna

Antenna gain: 0dBi



Adapter Label:

2.3 Additional Information Related to Testing

CHL : 915.5MHz

CHM : 918.38MHz

CHH : 921.26MHz

3. General Test Conditions

3.1 Location

Global United Technology Services Co., Ltd. -- Nemko ELA 632

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

FCC Registration No.:600491

IC Registration No.9079A-1

Note: all test are witnessed by NEMKO engineer

3.2 Operating Environment

All tests and measurements were performed in a shielded enclosure or a controlled environment suitable for the tests conducted. The climatic conditions in the test area are automatically controlled and recorded continuously.

Parameters	Recording during test	Accepted deviation
Ambient temperature	20-25°C	15 – 35 °C
Relative humidity	45-55%	30 - 60%
Atmospheric pressure	101.2 kPa -101.3kPa	86-106kPa

3.2 Operating During Testing

TM1: CHL keeping TX mode

TM2: CHM keeping TX mode

TM3: CHH keeping TX mode

TM4: Keeping TX + Charging mode

Remark : When measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, have been performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. No findable change appear.

X,Y,Z 3 axis of EUT all have been tested , only the worse case is reported

Only choose the worse mode to be the representative test mode

3.4 Test Equipment

The test equipments used in testing are calibrated on a regular basis. For most of the testing equipments accredited calibration is conducted once a year. For certain equipment the calibration interval is longer. Between the calibrations all test equipment are controlled and verified on a regular basis. The test equipments used are defined in each test section of this report.

4. Measurement Uncertainty

The Measurement Uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 with the confidence level of 95 %.

Conducted Emission : 0.15~30MHz	3.45dB
Radiated Emission: 30MHz~1000MHz	4.50dB
1GHz-18GHz	4.70dB

5. Radiated Electromagnetic Disturbances

5.1 Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m from the EUT on an adjustable mast.

The EUT were rotated 0 to 360 degree and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. The test result are reported as below.

For below 1GHz

RBW=100 kHz; VBW=300KHz. The frequency range from 30MHz to 1000MHz is checked using Pk detector . For fundamental test , RBW=1MHz, VBW=1MHz.

For above 1GHz. The frequency range from 1GHz to 10GHz(10th harmonics) is checked.

RBW=1MHz ; VBW=1MHz, PK detector for peak emissions measurement above 1GHz

Duty cycle correction factor is used for average evaluation by peak measurement.

5.2 Measurement Equipment

Equipment	Model No.	Serial No.	Cal. Due	Manufacturer
EMI Test Receiver	ESU26	GTS203	Jul. 04 2015	R&S
BiConiLog Antenna	VULB9163	GTS214	Feb. 26 2015	SCHWARZBECK
Horn Antenna	BBHA9120D	GTS215	Feb. 26 2015	SCHWARZBECK
Horn Antenna	BBHA9170	GTS216	Feb. 26 2015	SCHWARZBECK
Coaxial Cable	N/A	GTS213	Apr. 01 2015	GTS
Coaxial Cable	N/A	GTS211	Apr. 01 2015	GTS
Coaxial cable	N/A	GTS210	Apr. 01 2015	GTS
Coaxial Cable	N/A	GTS212	Apr. 01 2015	GTS
Amplifier	8347A	GTS204	Jul. 04 2015	HP

5.3 Test Result

Harmonics emission:

Channel	Connect mode	Antenna Polarity	Remark	Test Data	Test Result
921.26MHz	TX mode	Vertical	1-10GHz	Diagram 5-1	Pass
		Horizontal	1-10GHz	Diagram 5-2	Pass
915.5MHz	TX mode	Horizontal	1-10GHz	Diagram 5-3	Pass
		Vertical	1-10GHz	Diagram 5-4	Pass
918.38MHz	TX mode	Vertical	1-10GHz	Diagram 5-5	Pass
		Horizontal	1-10GHz	Diagram 5-6	Pass

Fundamental emission:

Channel	Connect mode	Antenna Polarity	Test Data	Test Result
915.5MHz	TX mode	Horizontal	Diagram 5-7	Pass
		Vertical	Diagram 5-8	Pass
918.38MHz	TX mode	Vertical	Diagram 5-9	Pass
		Horizontal	Diagram 5-10	Pass
921.26MHz	TX mode	Horizontal	Diagram 5-11	Pass
		Vertical	Diagram 5-12	Pass

Spurious emission:

Channel	Connect mode	Antenna Polarity	Remark	Test Data	Test Result
915.5MHz	TX mode	Horizontal	30 – 1000MHz	Diagram 5-13	Pass
		Vertical	30 - 1000MHz	Diagram 5-14	Pass
918.38MHz	TX mode	Vertical	30 – 1000MHz	Diagram 5-15	Pass
		Horizontal	30 – 1000MHz	Diagram 5-16	Pass
921.26MHz	TX mode	Horizontal	30 – 1000MHz	Diagram 5-17	Pass
		Vertical	30 – 1000MHz	Diagram 5-18	Pass

Remark:

If PK value is lower than QP/AV limit , then PK, QP and AV deem to comply their own limit .

- 1) All modes of operation were investigated and the worst -case emission mode are reported.

Band Edge :

Channel	Connect mode	Antenna Polarity	Test Data	Test Result
915.5MHz	TX mode	Horizontal	Diagram 5-19	Pass
		Vertical	Diagram 5-20	Pass
921.26MHz	TX mode	Horizontal	Diagram 5-21	Pass
		Vertical	Diagram 5-22	Pass

Remark:

- 1) All restriction band have been tested.Only worse case is reported

NOTES:

- 1.All modes were measured and the worst case emission was reported.
2. H =Horizontal V=Vertical
3. Emission = Reading +Antenna Factor + Cable Loss –Amp Factor(if exist)
4. Emission level dB μ V = 20 log Emission level μ V/m
5. The lower limit shall apply at the transition frequencies
6. All the emissions outside of band should comply with 15.209 limits.

Remark :

The limit of 15.209 of 3 meter distance is

Frequency MHz	Distance m	Field strength		Distance m	Field strength dB μ V/m(QP)
		μ V/m	dB μ V/m(QP)		
30-88	3	100	40.0	10	30.0
88-216	3	150	43.5	10	33.5
216-960	3	200	46.0	10	36.0
960-1000	3	500	54.0	10	44.0
Above 1000	3	74.0 dB μ V/m (PK) 54.0 dB μ V/m (AV)		/	/

15.205 Restricted bands of operation:

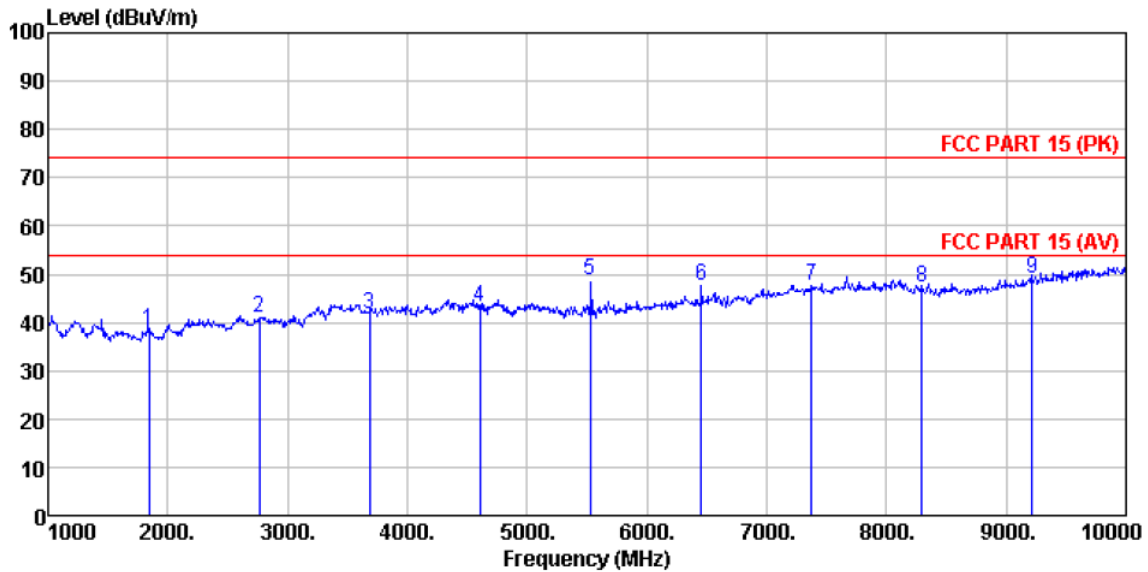
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

5.3.1 Diagram 5-1

CF: 921.26MHz

Ant. : Vertical

Harmonics Emission



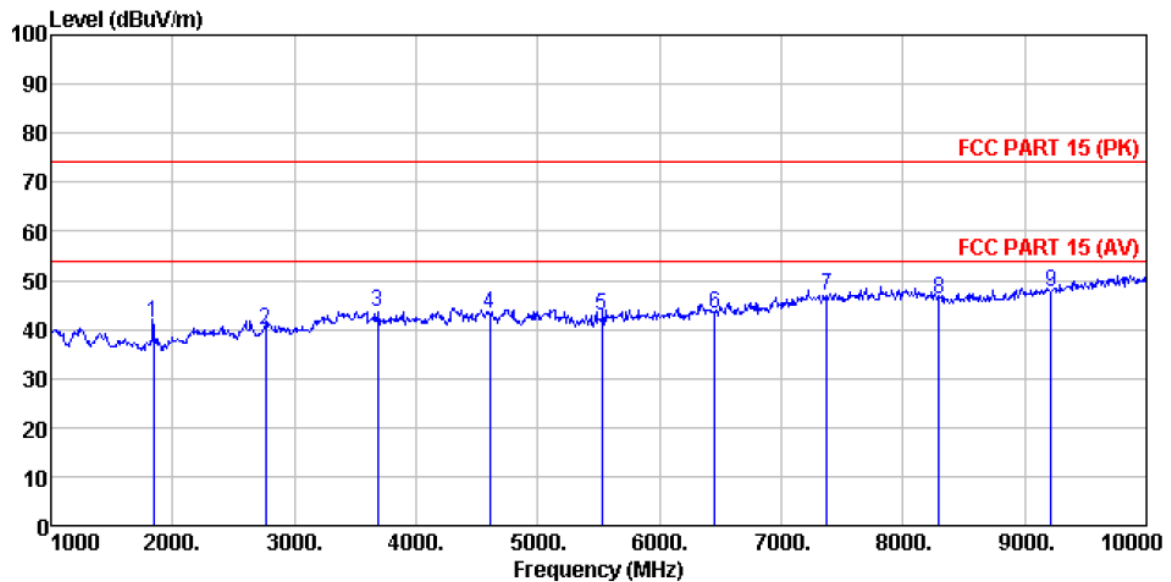
	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1843.000	42.07	25.50	4.88	34.20	38.25	74.00	-35.75 Peak
2	2764.500	40.40	28.31	5.73	33.59	40.85	74.00	-33.15 Peak
3	3686.000	37.68	29.22	7.30	32.54	41.66	74.00	-32.34 Peak
4	4607.500	35.22	31.53	8.44	31.99	43.20	74.00	-30.80 Peak
5	5529.000	39.55	32.05	9.56	32.42	48.74	74.00	-25.26 Peak
6	6450.500	35.23	33.57	10.83	32.13	47.50	74.00	-26.50 Peak
7	7372.000	31.34	36.49	11.75	31.84	47.74	74.00	-26.26 Peak
8	8293.500	29.73	36.62	12.58	31.83	47.10	74.00	-26.90 Peak
9	9215.000	29.95	37.37	13.82	32.07	49.07	74.00	-24.93 Peak

5.3.2 Diagram 5-2

CF: 921.26MHz

Ant. : Horizontal

Harmonics Emission



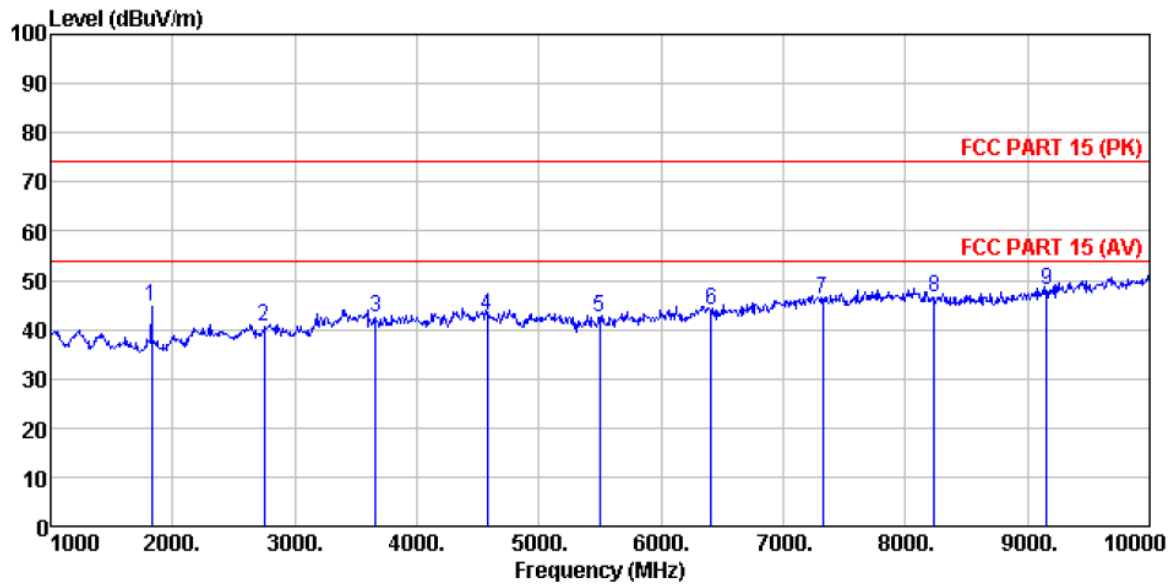
	ReadAntenna	Cable Preamp	Limit	Over					
Freq	Level	Factor	Loss	Factor	Level				
MHz	dBuV	dB/m	dB	dB	dBuV/m				
1	1843.000	45.22	25.50	4.88	34.20	41.40	74.00	-32.60	Peak
2	2764.500	39.43	28.31	5.73	33.59	39.88	74.00	-34.12	Peak
3	3686.000	39.55	29.22	7.30	32.54	43.53	74.00	-30.47	Peak
4	4607.500	35.19	31.53	8.44	31.99	43.17	74.00	-30.83	Peak
5	5529.000	33.67	32.05	9.56	32.42	42.86	74.00	-31.14	Peak
6	6450.500	30.91	33.57	10.83	32.13	43.18	74.00	-30.82	Peak
7	7372.000	30.42	36.49	11.75	31.84	46.82	74.00	-27.18	Peak
8	8293.500	28.79	36.62	12.58	31.83	46.16	74.00	-27.84	Peak
9	9215.000	28.41	37.37	13.82	32.07	47.53	74.00	-26.47	Peak

5.3.3 Diagram 5-3

CF: 915.5MHz

Ant. : Horizontal

Harmonics Emission



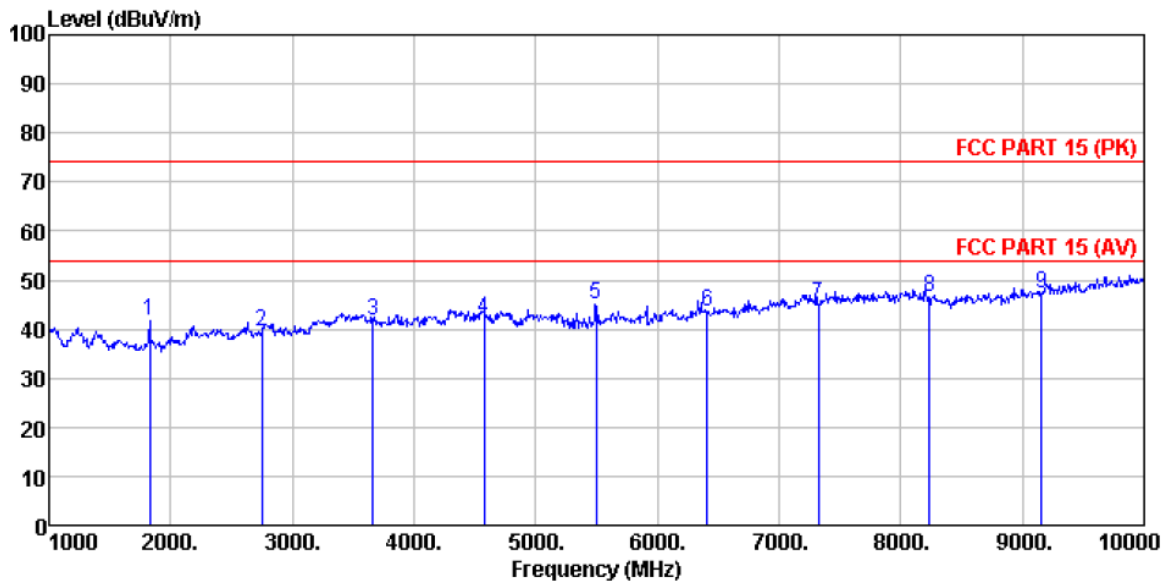
	ReadAntenna	Cable	Preamp	Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1831.000	48.59	25.42	4.87	34.17	44.71	74.00	-29.29 Peak
2	2746.500	40.43	28.24	5.71	33.61	40.77	74.00	-33.23 Peak
3	3662.000	38.56	29.20	7.27	32.56	42.47	74.00	-31.53 Peak
4	4577.500	35.06	31.47	8.40	31.97	42.96	74.00	-31.04 Peak
5	5493.000	33.33	31.98	9.49	32.42	42.38	74.00	-31.62 Peak
6	6408.500	31.79	33.49	10.78	32.11	43.95	74.00	-30.05 Peak
7	7324.000	29.80	36.37	11.72	31.89	46.00	74.00	-28.00 Peak
8	8239.500	28.97	36.76	12.51	31.73	46.51	74.00	-27.49 Peak
9	9155.000	28.85	37.31	13.78	32.13	47.81	74.00	-26.19 Peak

5.3.4 Diagram 5-4

CF: 915.5MHz

Ant. : Vertical

Harmonics Emission



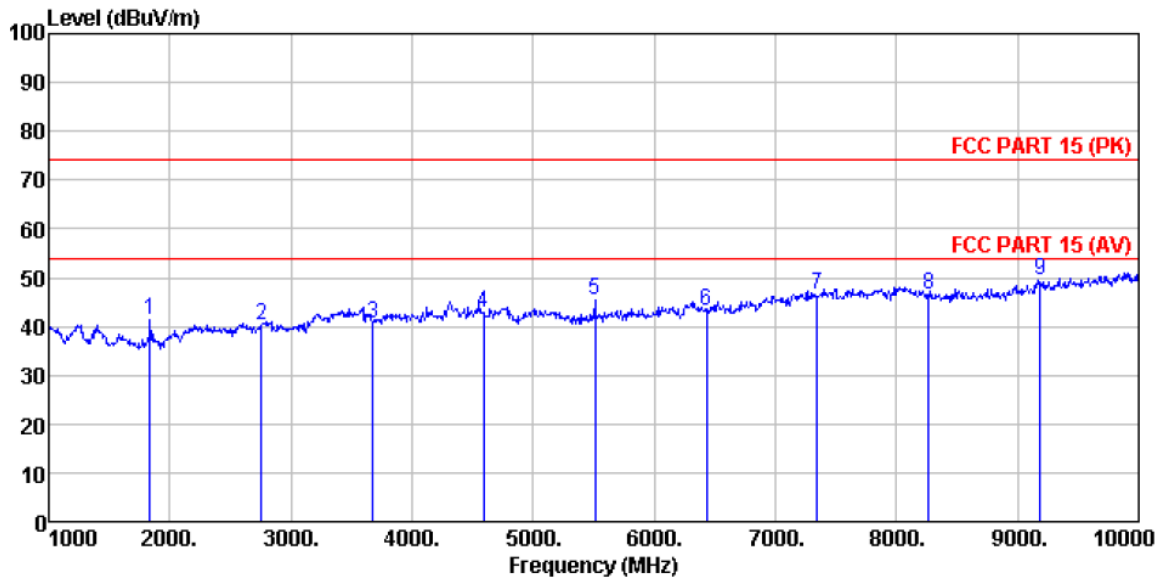
	ReadAntenna	Cable Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level
MHz	dBuV	dB/m	dB	dB	dBuV/m
1	45.60	25.42	4.87	34.17	41.72
2	39.23	28.24	5.71	33.61	39.57
3	37.96	29.20	7.27	32.56	41.87
4	34.29	31.47	8.40	31.97	42.19
5	35.94	31.98	9.49	32.42	44.99
6	31.50	33.49	10.78	32.11	43.66
7	28.85	36.37	11.72	31.89	45.05
8	28.91	36.76	12.51	31.73	46.45
9	28.23	37.31	13.78	32.13	47.19

5.3.5 Diagram 5-5

CF: 918.38MHz

Ant. : Vertical

Harmonics Emission



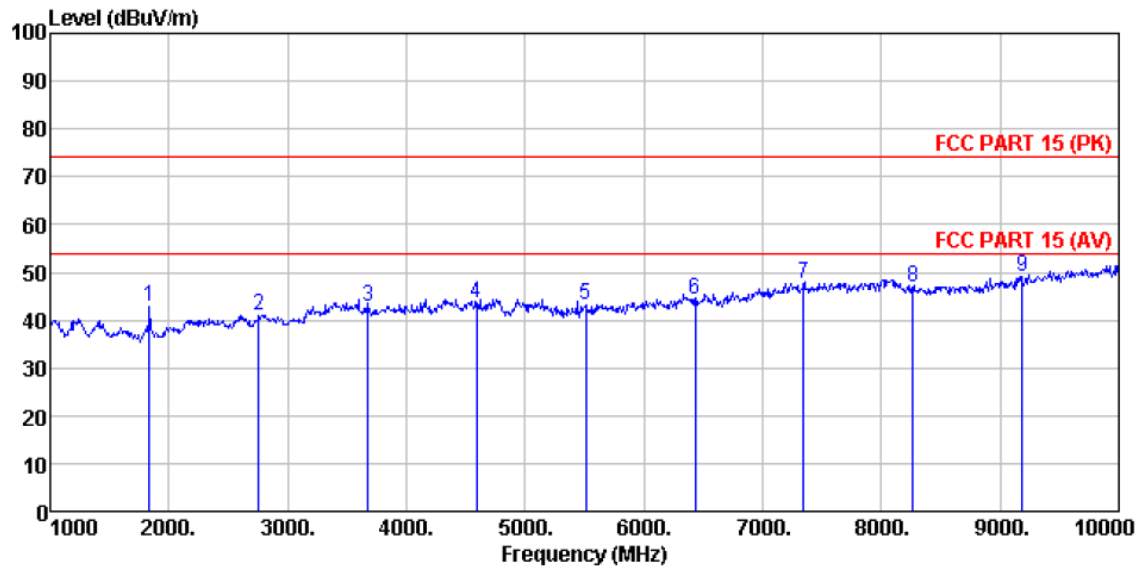
	Read Freq	Antenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1837.000	45.10	25.45	4.88	34.17	41.26	74.00	-32.74	Peak
2	2755.500	40.01	28.26	5.72	33.61	40.38	74.00	-33.62	Peak
3	3674.000	36.81	29.21	7.28	32.56	40.74	74.00	-33.26	Peak
4	4592.500	34.95	31.49	8.41	31.98	42.87	74.00	-31.13	Peak
5	5511.000	36.14	32.01	9.51	32.43	45.23	74.00	-28.77	Peak
6	6429.500	30.83	33.53	10.80	32.12	43.04	74.00	-30.96	Peak
7	7348.000	30.32	36.45	11.74	31.88	46.63	74.00	-27.37	Peak
8	8266.500	28.92	36.69	12.55	31.77	46.39	74.00	-27.61	Peak
9	9185.000	30.24	37.34	13.80	32.11	49.27	74.00	-24.73	Peak

5.3.6 Diagram 5-6

CF: 918.38MHz

Ant. : Horizontal

Harmonics Emission



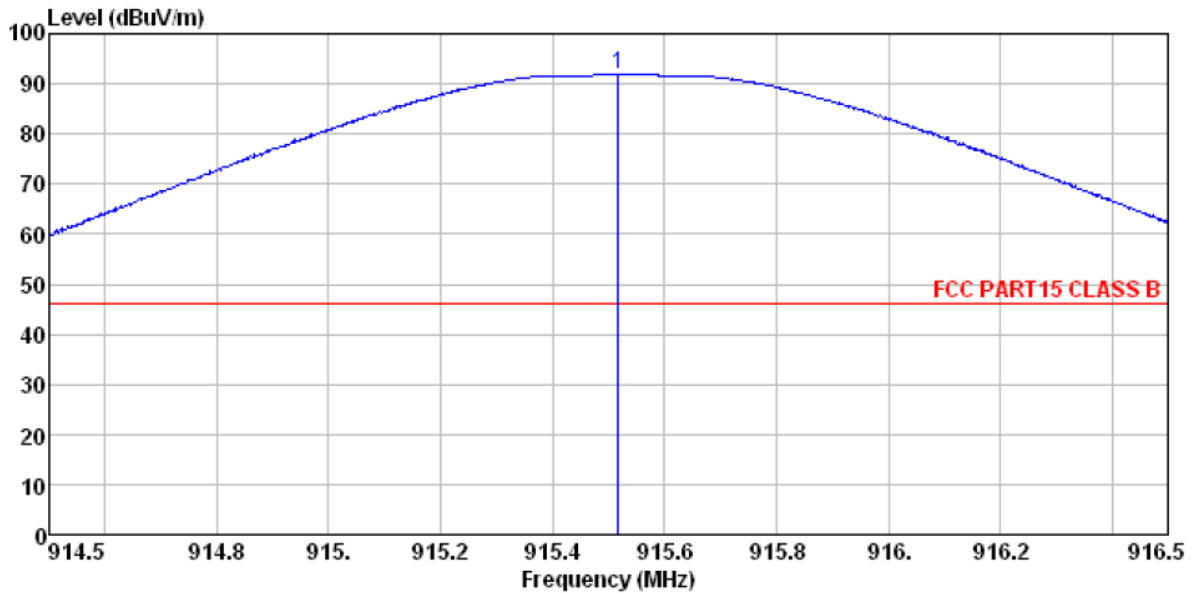
	Freq	ReadAntenna	Cable Preamp	Limit	Over	Remark			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	dB
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1837.000	46.55	25.45	4.88	34.17	42.71	74.00	-31.29	Peak
2	2755.500	40.41	28.26	5.72	33.61	40.78	74.00	-33.22	Peak
3	3674.000	38.73	29.21	7.28	32.56	42.66	74.00	-31.34	Peak
4	4592.500	35.66	31.49	8.41	31.98	43.58	74.00	-30.42	Peak
5	5511.000	34.25	32.01	9.51	32.43	43.34	74.00	-30.66	Peak
6	6429.500	32.17	33.53	10.80	32.12	44.38	74.00	-29.62	Peak
7	7348.000	31.26	36.45	11.74	31.88	47.57	74.00	-26.43	Peak
8	8266.500	29.27	36.69	12.55	31.77	46.74	74.00	-27.26	Peak
9	9185.000	30.08	37.34	13.80	32.11	49.11	74.00	-24.89	Peak

5.3.7 Diagram 5-7

CF: 915.5MHz

Ant. : Horizontal

Fundamental Emission



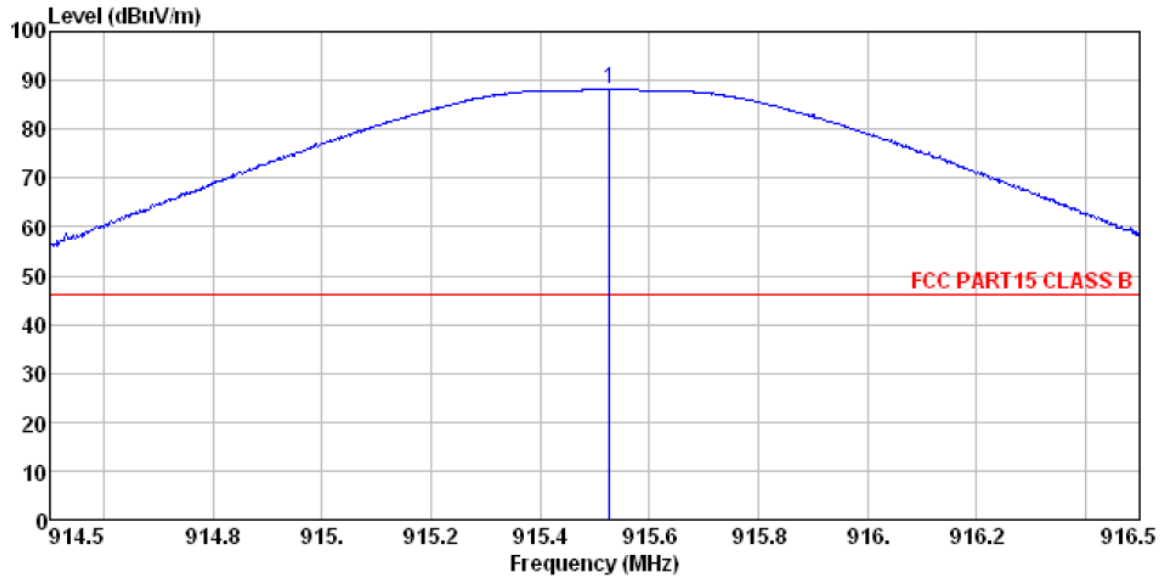
	ReadAntenna	Cable	Preamp	Limit	Over		
Freq	Level	Loss	Factor	Line	Limit	Remark	
-----	-----	-----	-----	-----	-----	-----	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	
-----	-----	-----	-----	-----	-----	-----	
1 *	915.518	95.10	23.18	4.91	31.19	92.00	Peak

5.3.8 Diagram 5-8

CF: 915.5MHz

Ant. : Vertical

Fundamental Emission



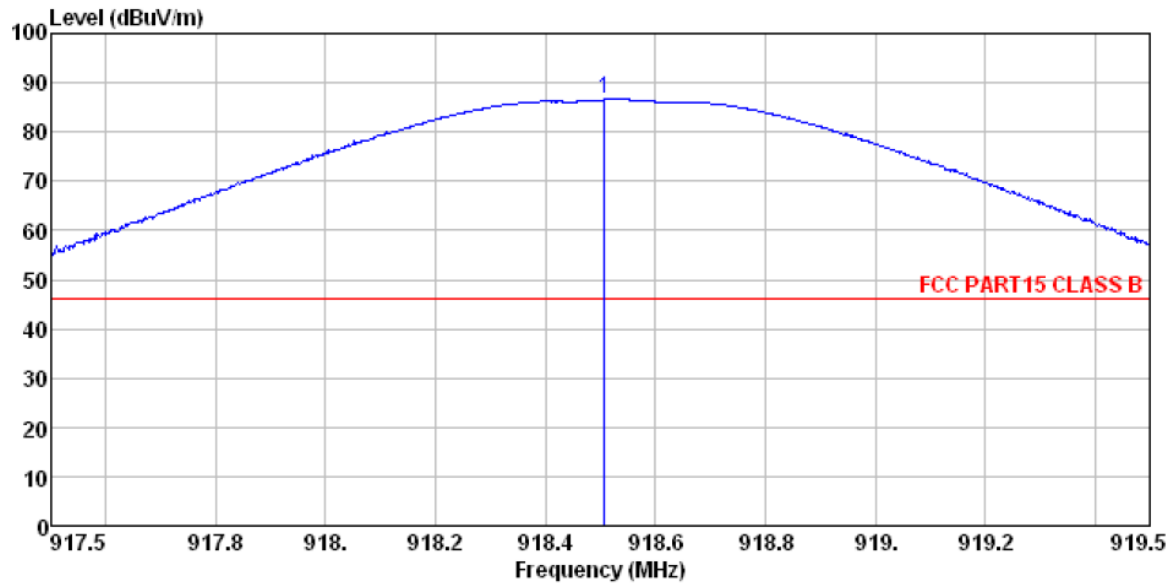
	Read Freq	Antenna Level	Antenna Factor	Cable Loss	Preamp Factor	Limit Level	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 *	915.528	91.36	23.18	4.91	31.19	88.26		Peak

5.3.9 Diagram 5-9

CF: 918.38MHz

Ant. : Vertical

Fundamental Emission



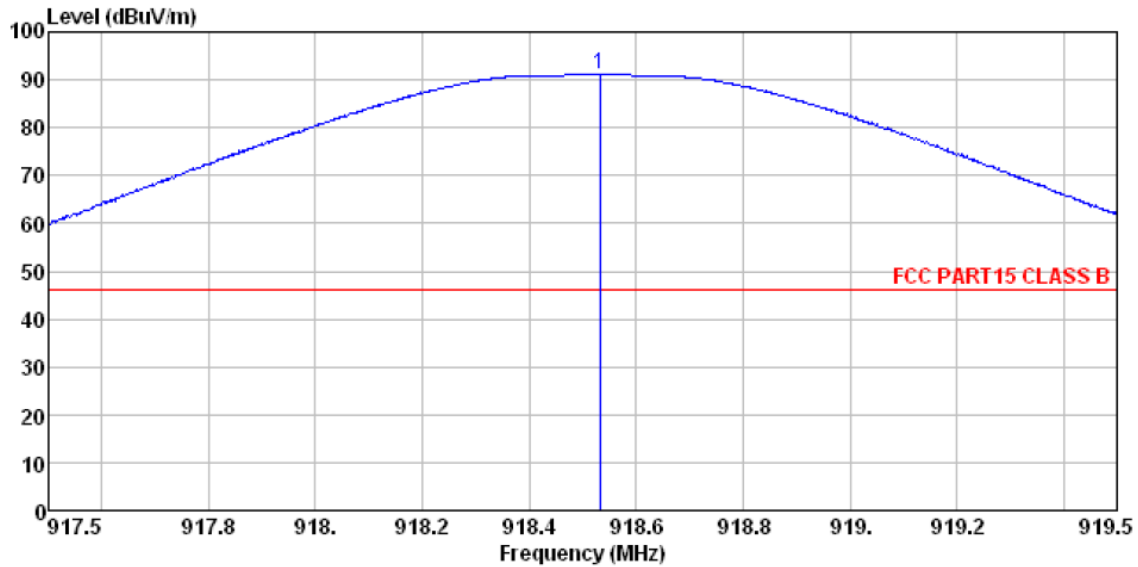
	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 *	918.508	89.65	23.21	4.93	31.19	86.60	Peak

5.3.10 Diagram 5-10

CF: 918.38MHz

Ant. : Horizontal

Fundamental Emission



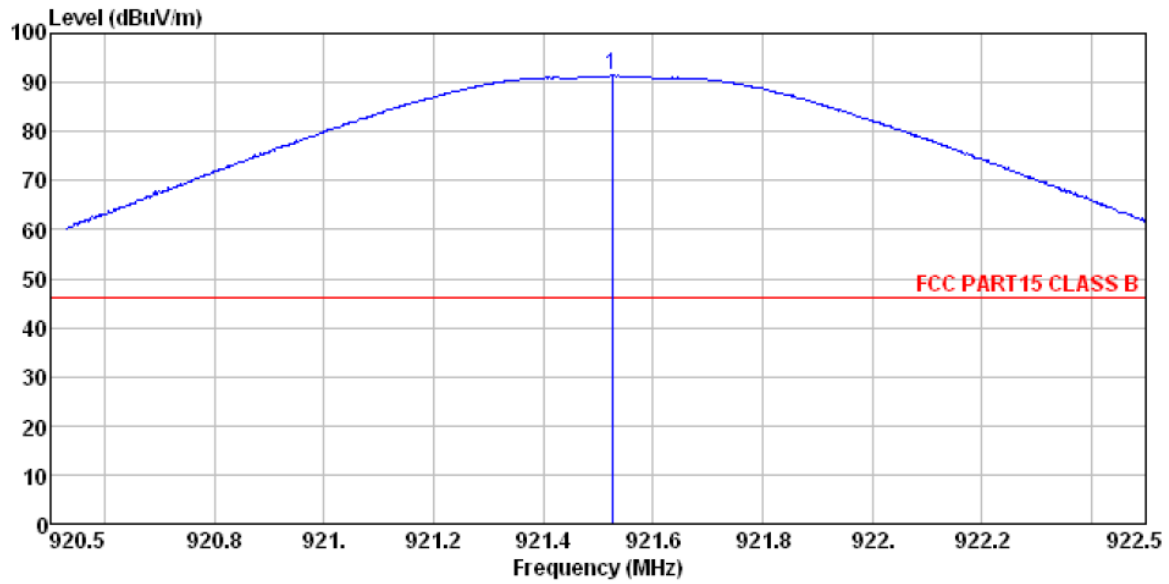
	ReadAntenna	Cable Preamp	Limit	Over							
Freq	Level	Factor	Loss	Factor	Level						
MHz	dBuV	dB/m	dB	dB	dBuV/m						
1 *	918.532	94.34	23.21	4.93	31.19	91.29					Peak

5.3.11 Diagram 5-11

CF: 921.26MHz

Ant. : Horizontal

Fundamental Emission



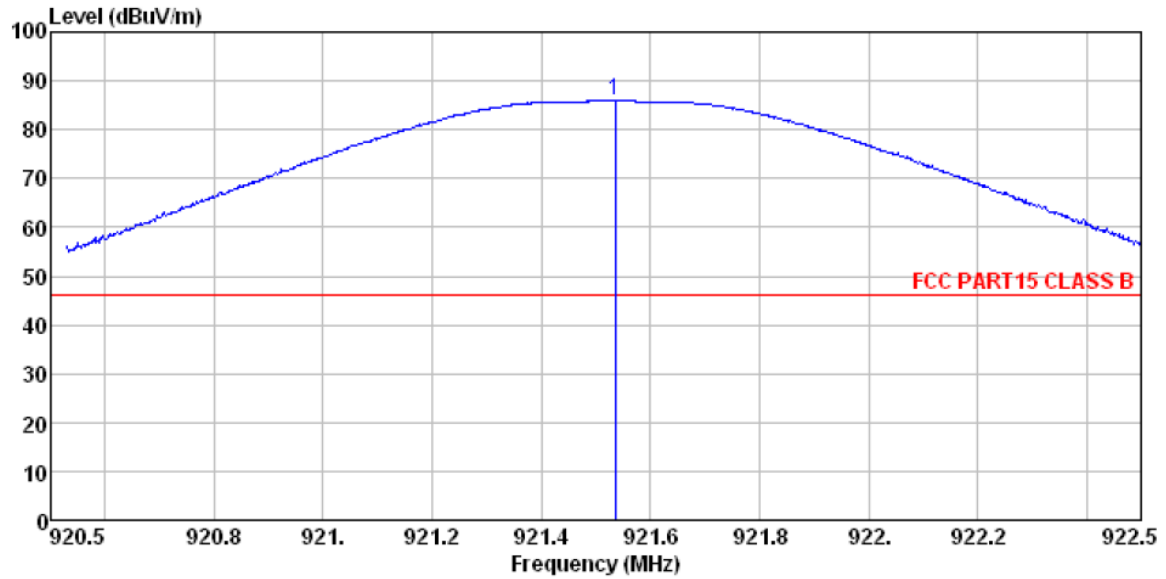
	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 *	921.526	94.37	23.24	4.93	31.19	91.35	Peak

5.3.12 Diagram 5-12

CF: 921.26MHz

Ant. : Vertical

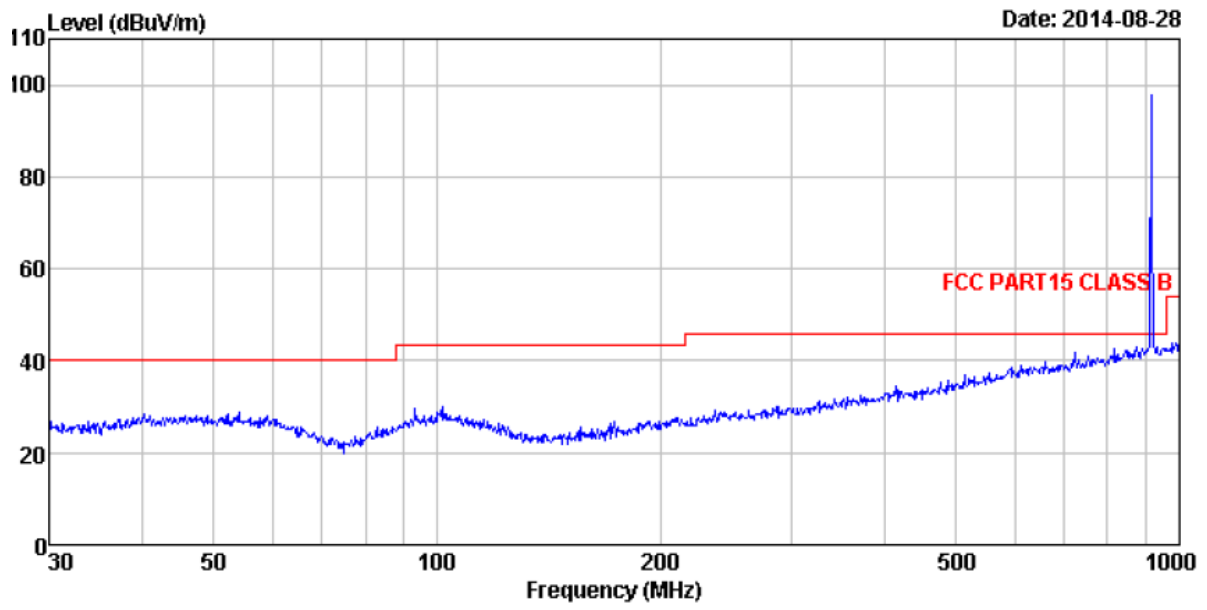
Fundamental Emission



	ReadAntenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	
1 *	921.536	88.97	23.24	4.93	31.19	85.95	Peak

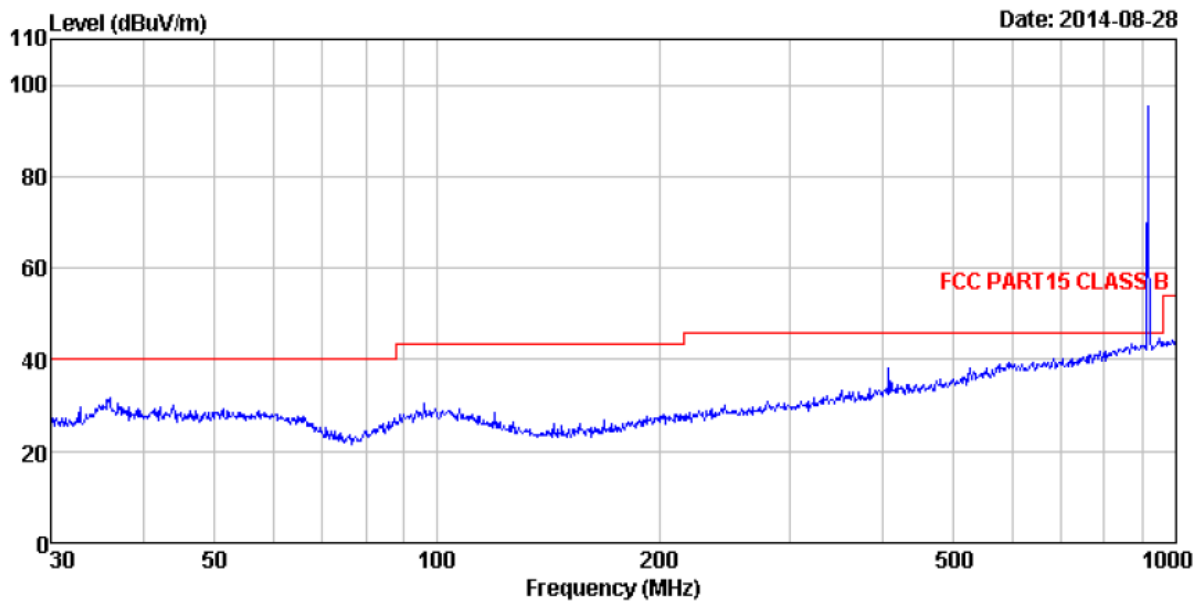
5.3.13 Diagram 5-13

CF: 915.5MHz
Ant. : Horizontal
Spurious Emission



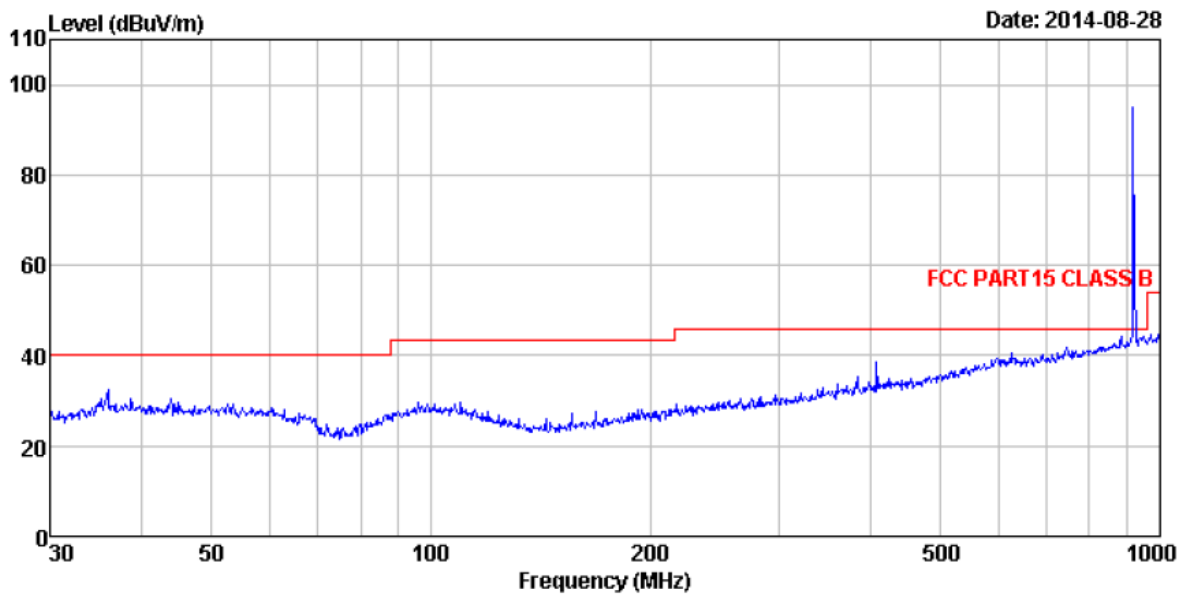
5.3.14 Diagram 5-14

CF: 915.5MHz
Ant. : Vertical
Spurious Emission



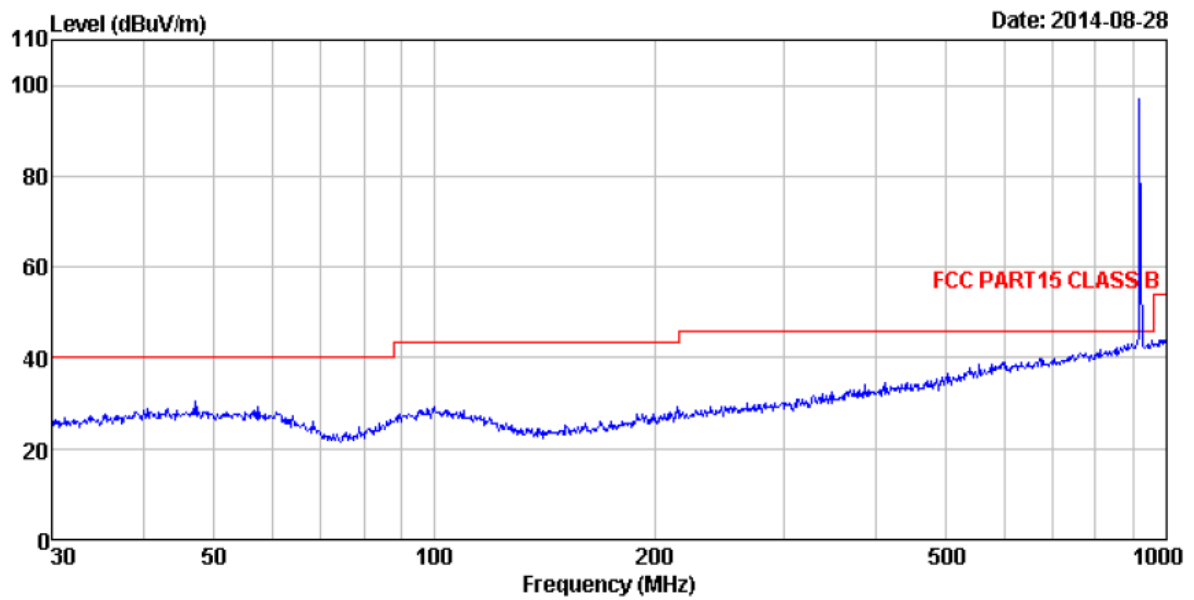
5.3.15 Diagram 5-15

CF: 918.38MHz
Ant. : Vertical
Spurious Emission



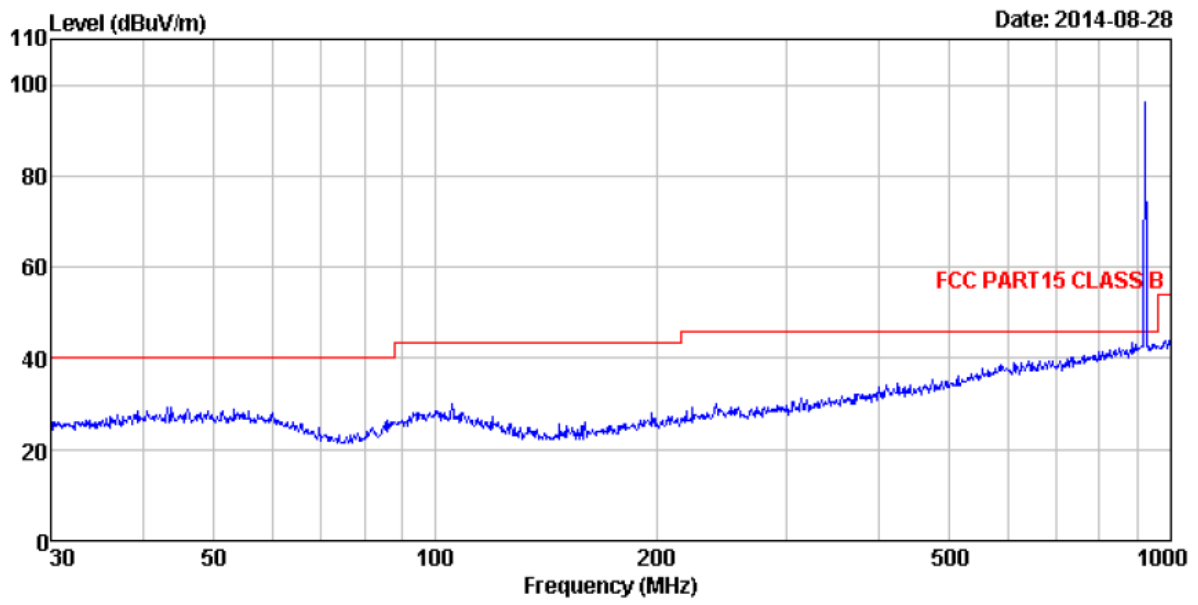
5.3.16 Diagram 5-16

CF: 918.38MHz
Ant. : Horizontal
Spurious Emission



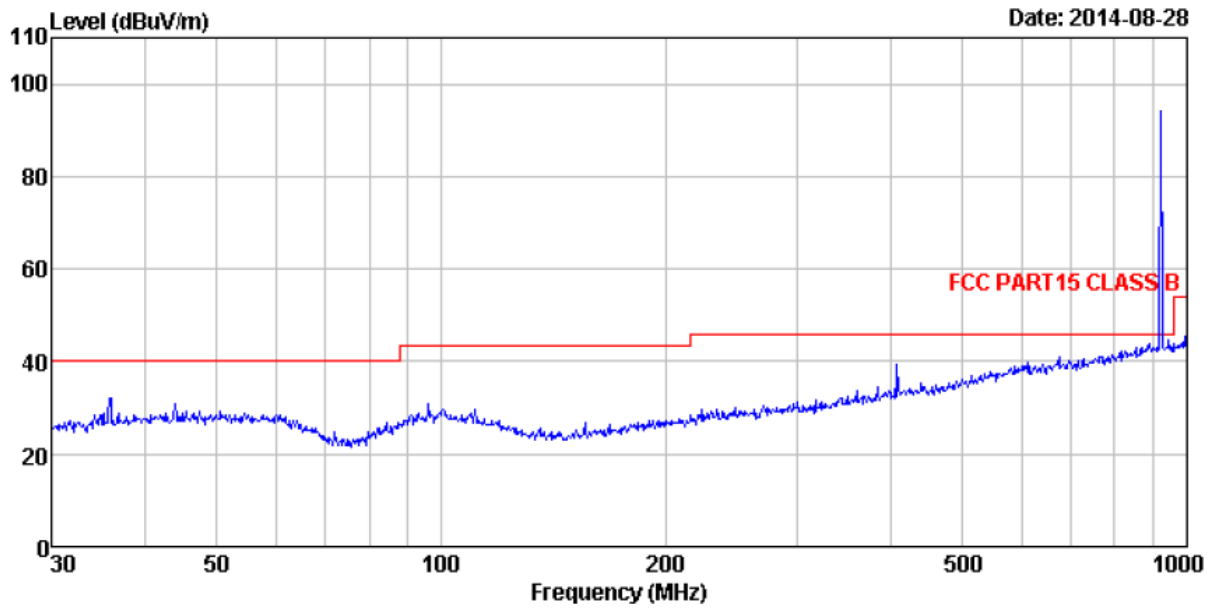
5.3.17 Diagram 5-17

CF: 921.26MHz
Ant. : Horizontal
Spurious Emission



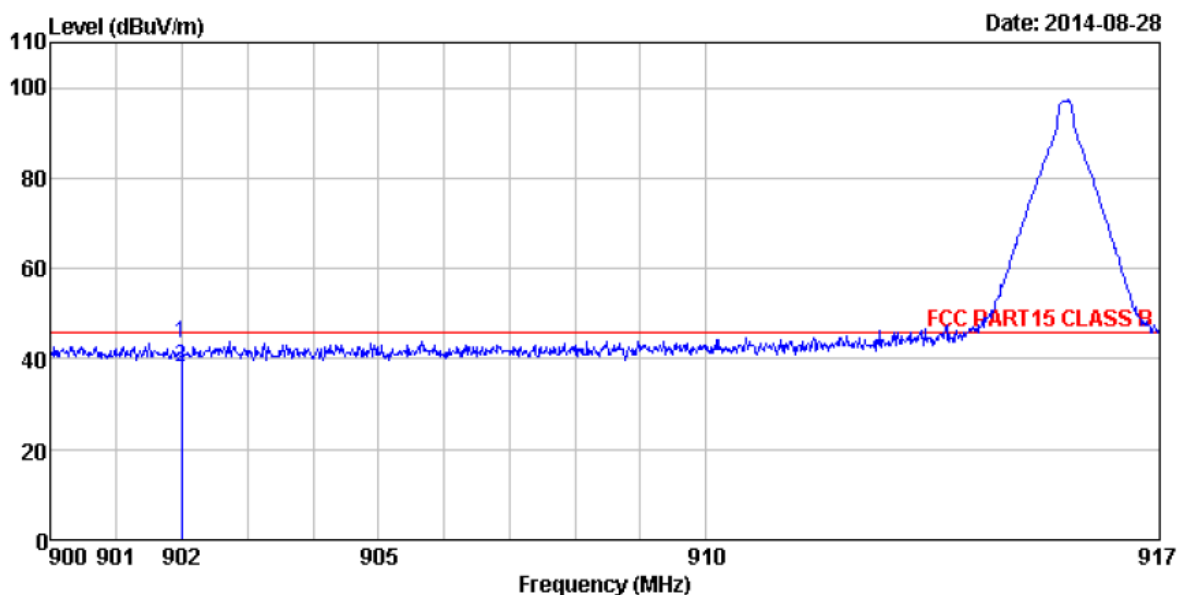
5.3.18 Diagram 5-18

CF: 921.26MHz
Ant. : Vertical
Spurious Emission



5.3.19 Diagram 5-19

915.5MHz
Ant. : Horizontal
Band Edge



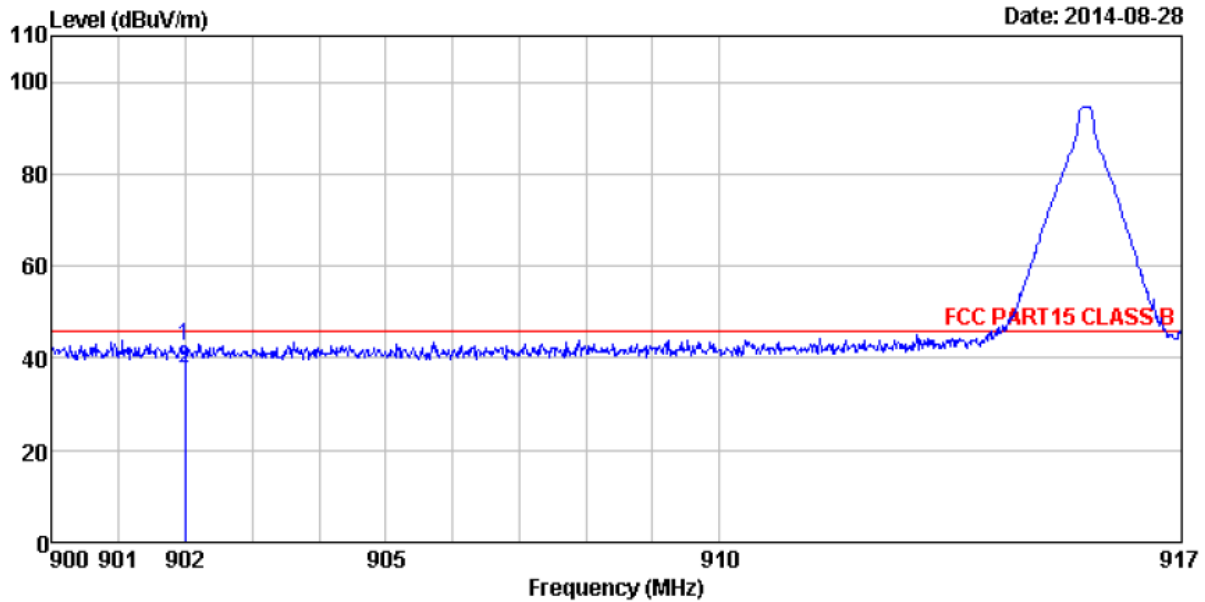
	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
----- MHz	----- dBuV	----- dB/m	----- dB	----- dB	----- dBuV/m	----- dBuV/m	----- dB	-----
1 902.000	46.50	23.12	4.87	31.18	43.31	46.00	-2.69	Peak

5.3.20 Diagram 5-20

915.5MHz

Ant. : Vertical

Band Edge



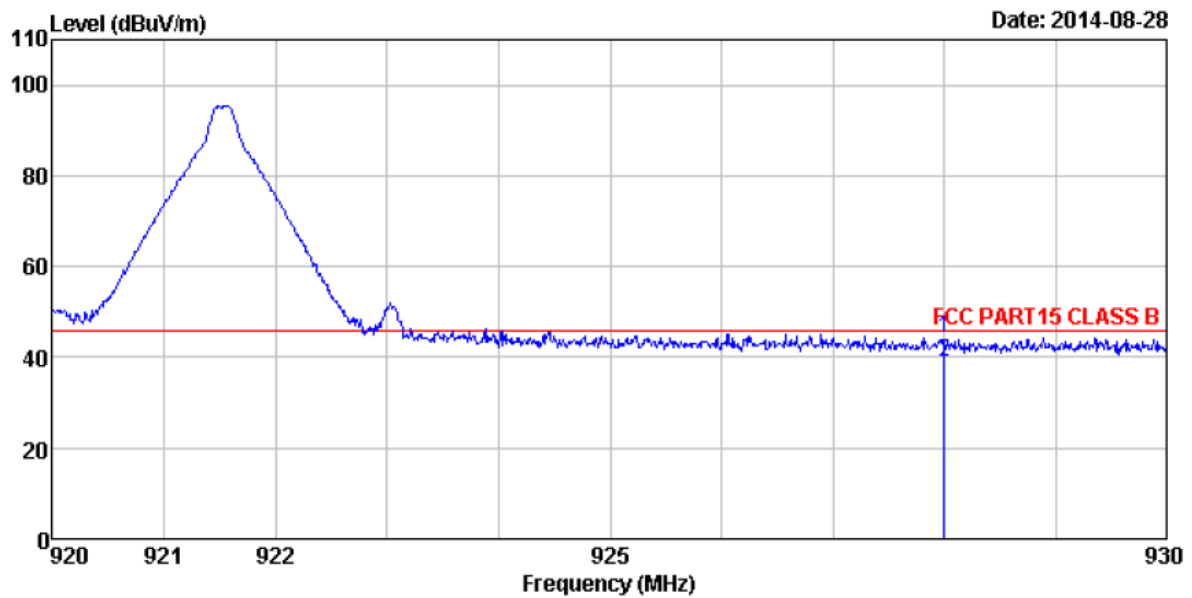
	Read	Antenna	Cable	Preamp	Limit	Over			
1	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	902.000	46.00	23.12	4.87	31.18	42.81	46.00	-3.19	Peak

5.3.21 Diagram 5-21

921.26MHz

Ant. : Horizontal

Band Edge



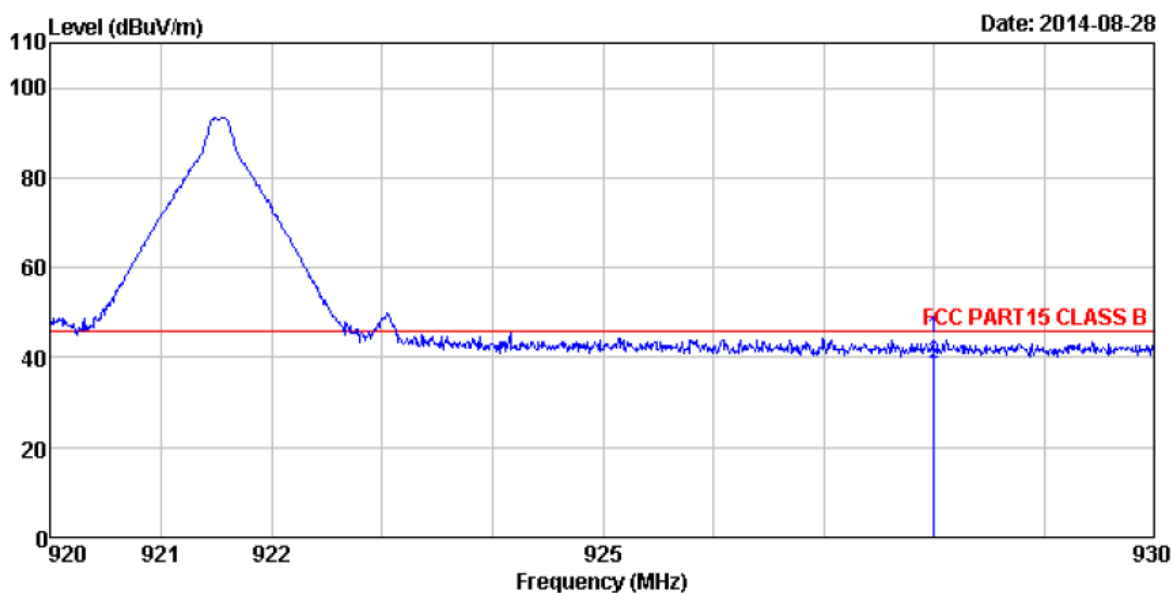
	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 928.000	47.40	23.28	4.96	31.20	44.44	46.00	-1.56 Peak

5.3.22 Diagram 5-22

921.26MHz

Ant. : Vertical

Band Edge



	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 928.000	47.30	23.28	4.96	31.20	44.34	46.00	-1.66 Peak

6. 20 dB bandwidth Test

6.1 Test Procedure

Clause 15.215(c) 20dB Bandwidth:

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in 15.217 through 15.257 and in Subpart E of this part, 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. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

6.2 Measurement Equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Spectrum	Jul. 04 2015	FSP30	GTS208	RS

6.3 Test Result:

Modulation	Channel	20dB bandwidth
MSK	CHL	870.000KHz
	CHM	840.000KHz
	CHH	870.000KHz

MSK diagrams are as below:



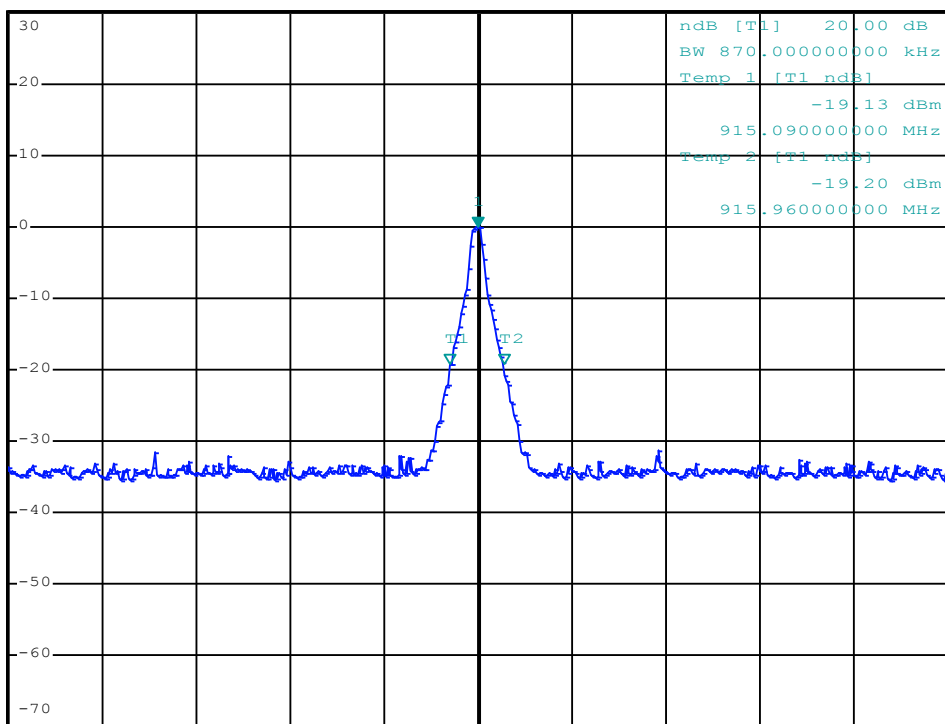
*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz 0.07 dBm
SWT 2.5 ms 915.54000000 MHz

Ref 30 dBm

Att 60 dB

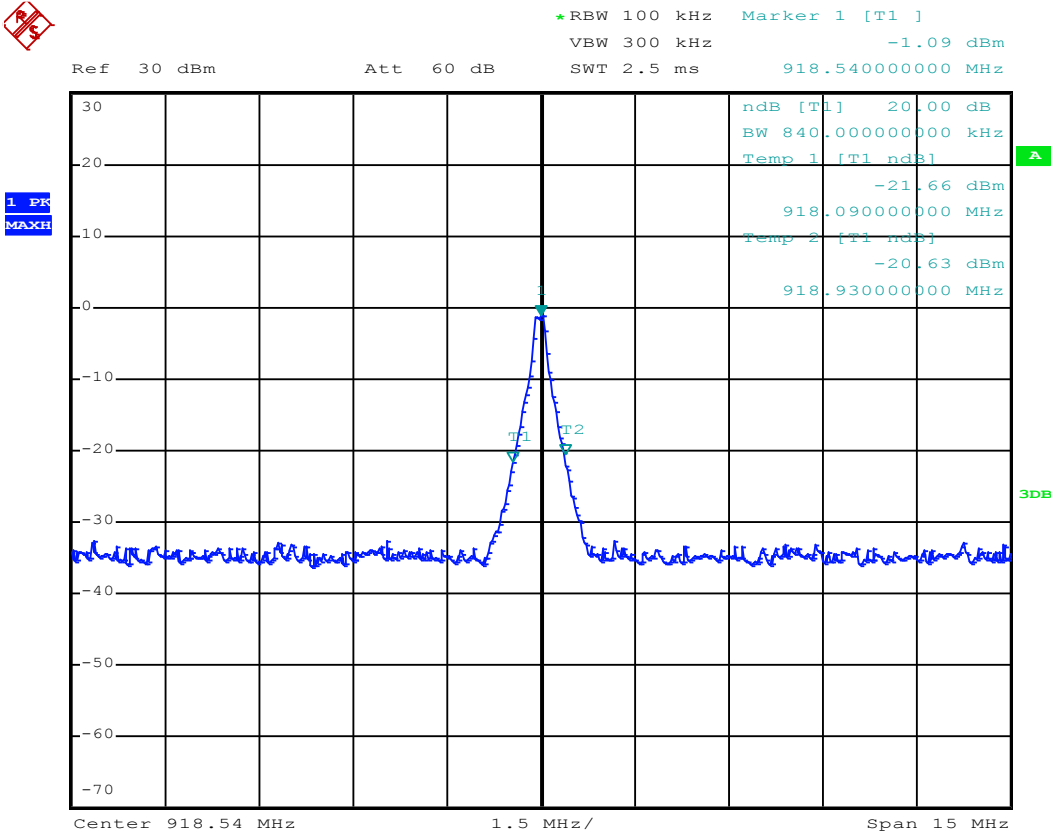
915.54000000 MHz

1 PK
MAXH



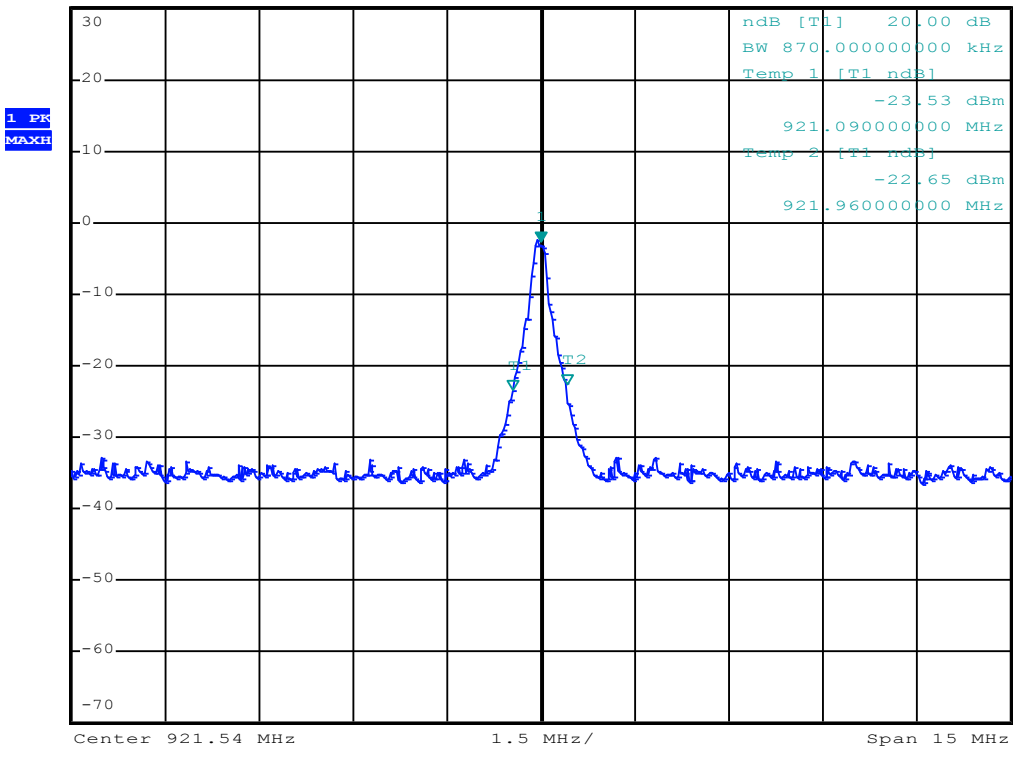
A

3dB





*RBW 100 kHz Marker 1 [T1]
 VBW 300 kHz -2.71 dBm
 Ref 30 dBm Att 60 dB SWT 2.5 ms 921.540000000 MHz



7 POWER LINE CONDUCTED EMISSION TEST

7.1 Test Procedure

An intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

*-Decreases with the logarithm of the frequency.

7.2 Measurement Equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	EMI Test Receiver	Jul. 04 2015	ESCS30	1102.4500K30	Rohde & Schwarz
<input checked="" type="checkbox"/>	10dB Pulse Limita	Jul. 04 2015	N/A	GTS224	Rohde & Schwarz
<input checked="" type="checkbox"/>	LISN	Jul. 04 2015	NSLK 8127	8127549	SCHWARZBECK MESS-ELEKTRONIK

7.3 Test Result

The EUT was placed on a non-metallic table, 80cm above the ground plane. The other peripheral devices power cord connected to the power mains through another line impedance stabilization network. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2009 on conducted Emission test.

Preview measurements:

0.15 MHz to 30 MHz

Receiver settings: PK&AV detector

RBW:9 kHz

TM4

Final measurement:

0.15 MHz to 30 MHz

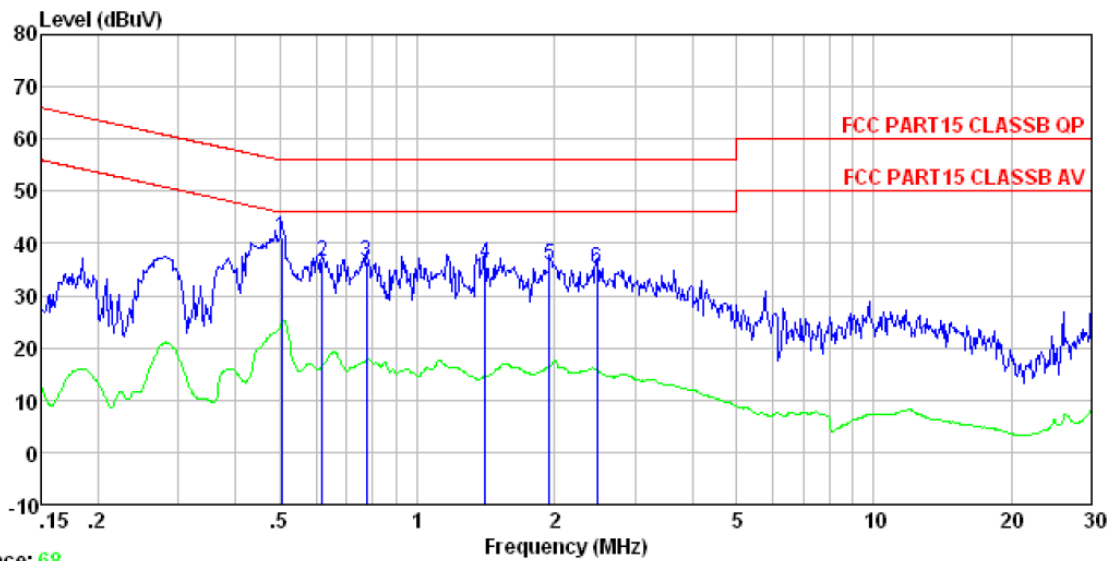
Receiver settings:QP&AV detector

Models	Power Line	Test Data	Test Result
SCOUTTRAINER100 With adapter BLJ5W060050P-U	Line	Diagram 7-1	Pass
	Neutral	Diagram 7-2	Pass

NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.
2. All modes of operation were investigated and the worst -case emission are reported.
3. If PK value is lower than AV limit then no reading value listed in report .If QP value is Lower than AV limit ,then AV value don't listed in report.

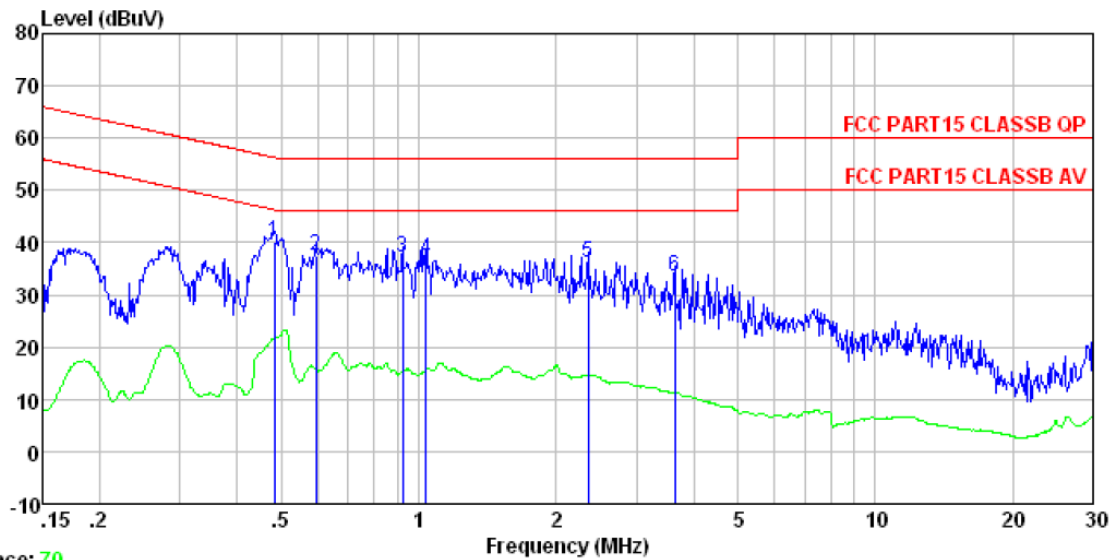
7.3.1 Diagram 7-1



Trace: 68
Condition : FCC PART15 CLASSB QP LISN-2013 LINE
Test mode : Transmitting mode
Test Engineer: Mike

	Read Freq	LISN Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.505	41.03	0.12	0.11	41.26	56.00	-14.74	QP
2	0.621	36.25	0.13	0.12	36.50	56.00	-19.50	QP
3	0.775	36.27	0.14	0.13	36.54	56.00	-19.46	QP
4	1.411	35.89	0.12	0.13	36.14	56.00	-19.86	QP
5	1.949	35.66	0.12	0.14	35.92	56.00	-20.08	QP
6	2.474	34.93	0.13	0.15	35.21	56.00	-20.79	QP

7.3.2 Diagram 7-2



Trace: 70
Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
Test mode : Transmitting mode
Test Engineer: Mike

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.484	39.86	0.06	0.11	40.03	56.27	-16.24	QP
2	0.595	37.28	0.07	0.12	37.47	56.00	-18.53	QP
3	0.923	36.84	0.07	0.13	37.04	56.00	-18.96	QP
4	1.037	36.71	0.07	0.13	36.91	56.00	-19.09	QP
5	2.346	35.80	0.10	0.15	36.05	56.00	-19.95	QP
6	3.642	33.35	0.14	0.15	33.64	56.00	-22.36	QP

8 Antenna requirement

8.1 Requirement

For intentional device, according to FCC 47 CFR Section 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 Result

The antenna used for this product is Internal Patch antenna that no antenna other than that furnished by the responsible party shall be used with the device, The maximum peak gain of this antenna is 0dBi.

Appendix A Sample Label

Labelling Requirements

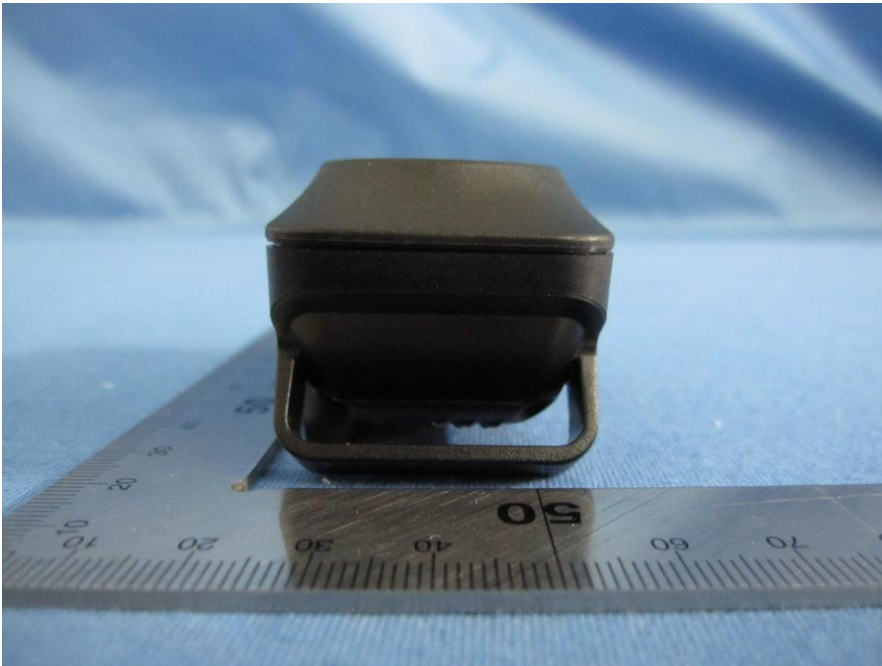
The sample label shown shall be permanently affixed at a conspicuous location on the device and be readily visible to the user at the time of purchase.

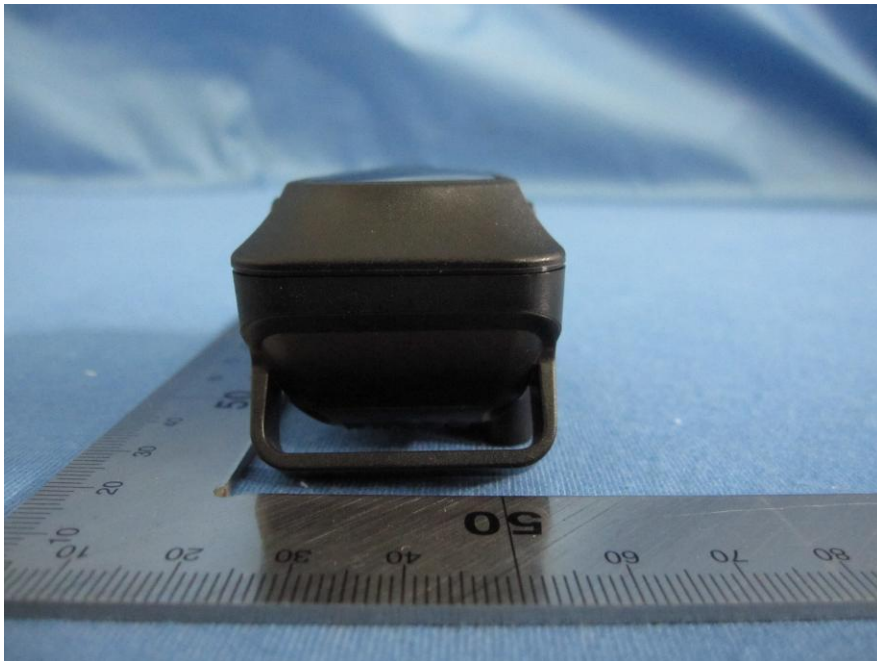
*** The following paragraph specified in the label.
FCC ID: VLJ-T100C

Appendix B EUT external photo

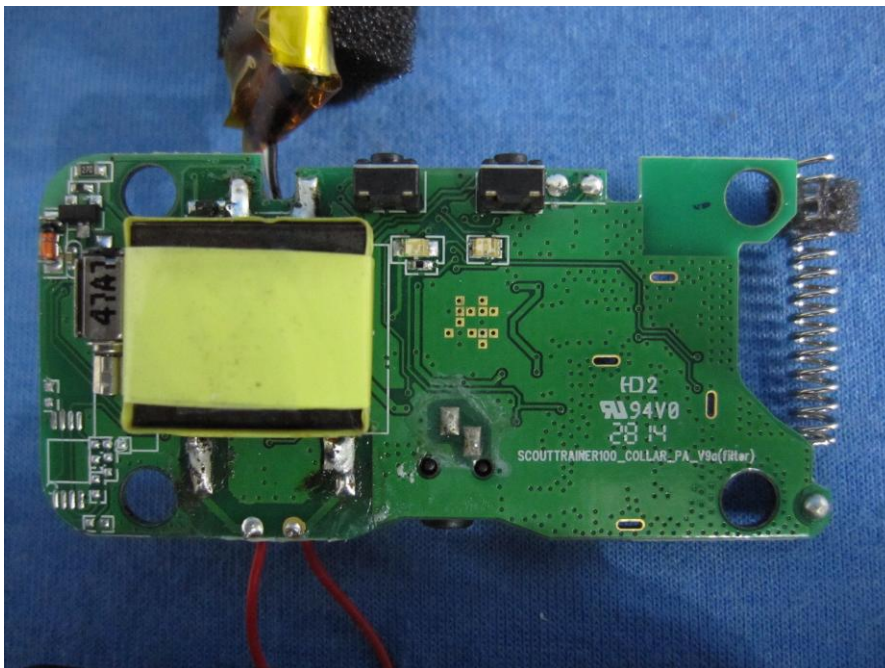
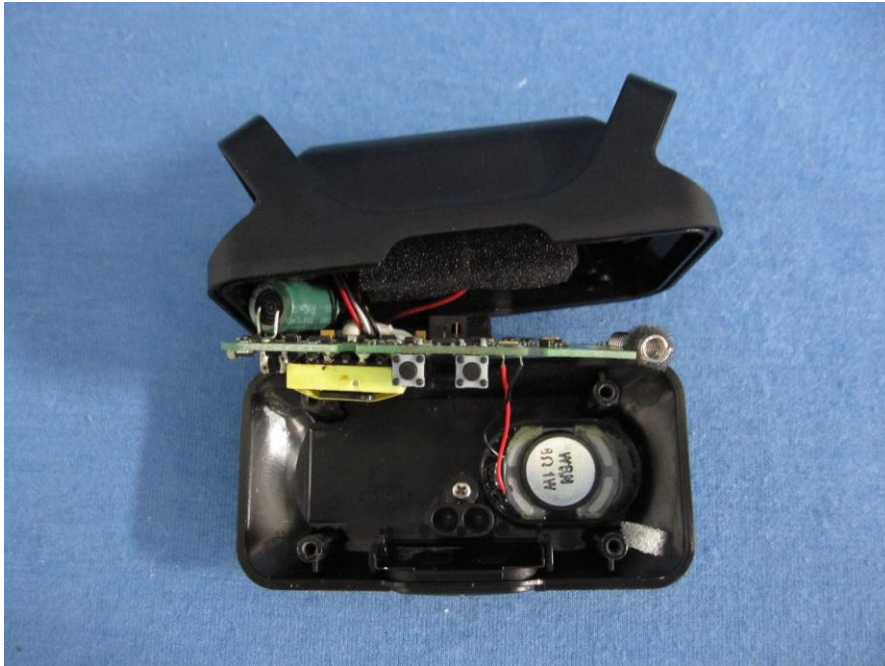


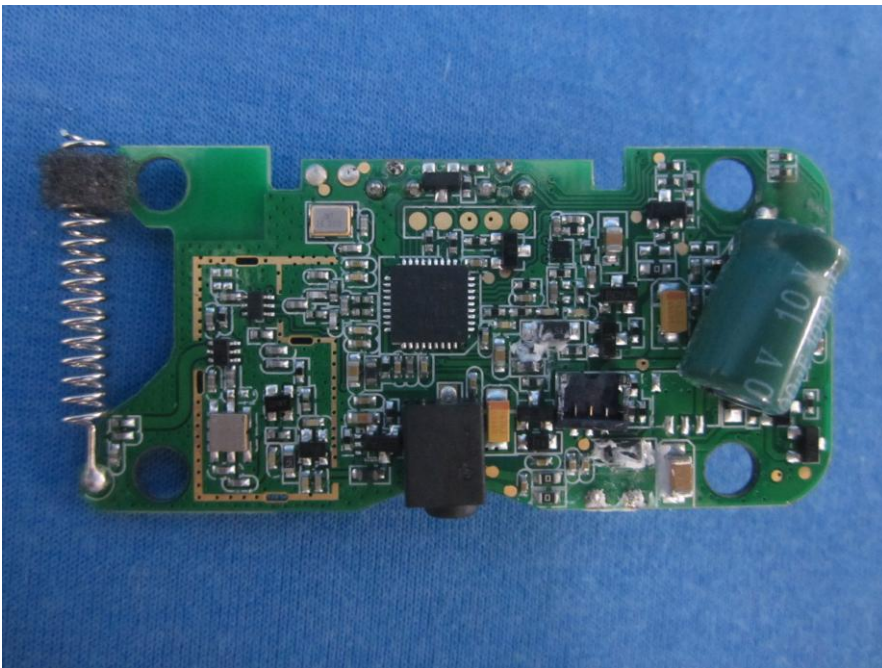
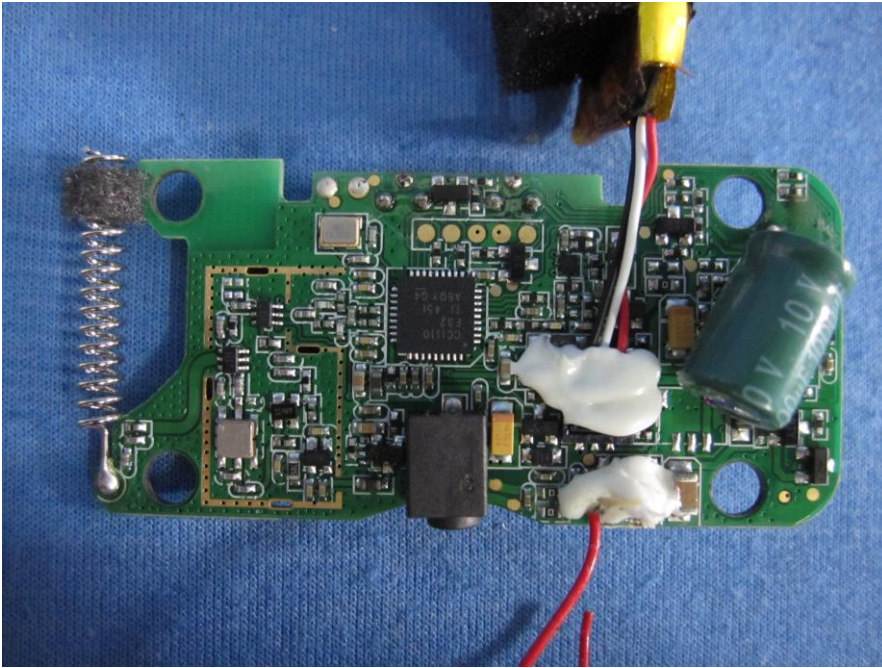






Appendix C EUT external photo



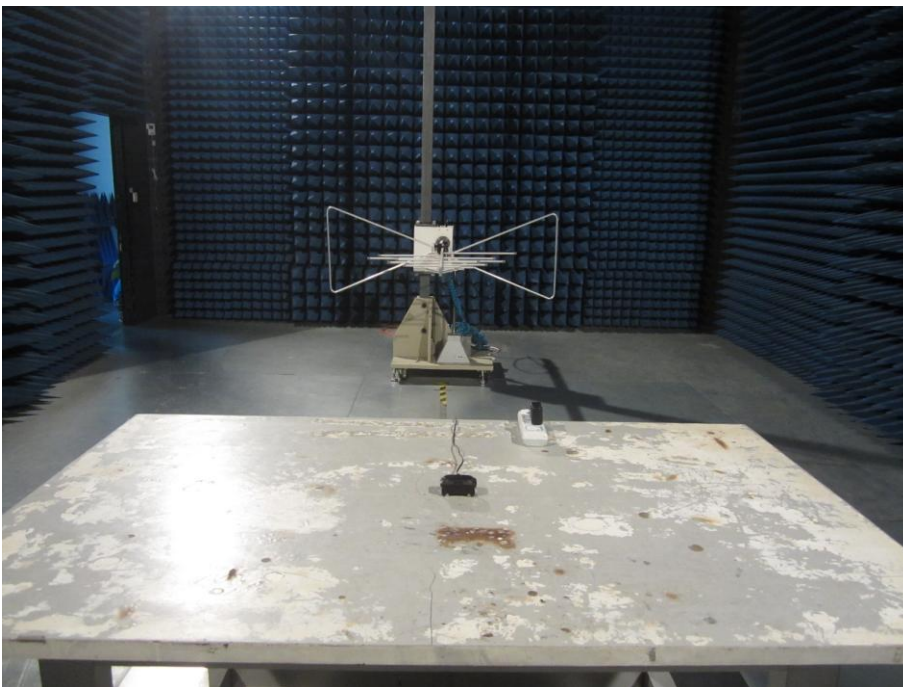




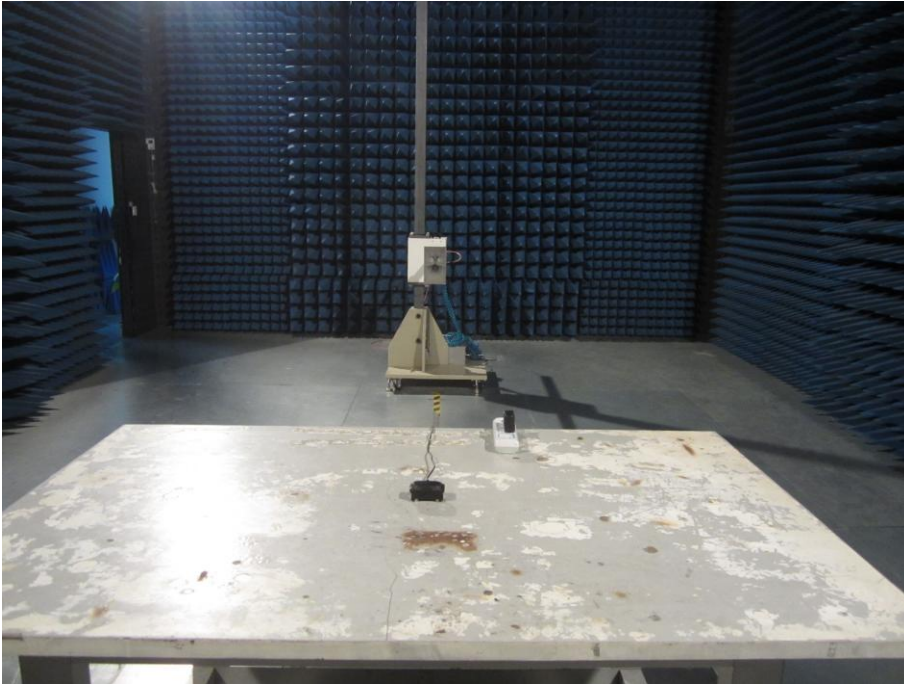
Appendix D setup photo



Conducted emission



Radiated emission



Radiated emission

*****END OF REPORT*****