

**Advanced
Compliance Laboratory**

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ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

of

JB TAG

MODEL: JB-751

FCC ID: ST2-JB751

September 16, 2009

This report concerns (check one): Original grant <input checked="" type="checkbox"/> Class II change <input type="checkbox"/>	
Equipment type: <u>Low Power Intentional Radiator</u>	
Deferred grant requested per 47 CF 0.457(d)(1)(ii)?	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
If yes, defer until: _____ (date)	
Company agrees to notify the Commission by	_____ (date)
of the intended date of announcement of the product so that the grant can be issued on that date.	
Transition Rules Request per 15.37?	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
If no, assumed Part 15, Subpart B for unintentional radiators - the new 47 CFR [10-1-90 Edition] provision.	
Report prepared for:	REMOTE PLAY (CENTRAK), INC
Report prepared by:	Advanced Compliance Lab
Report number:	0048-090901-01-FCC



Lab Code: 200101

The test result in this report IS supported and covered by the NVLAP accreditation

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1. GENERAL INFORMATION

1.1 Verification of Compliance

EUT: JB TAG

Model: JB-751

Applicant: REMOTE PLAY (CENTRAK), INC

Test Type: FCC Part 15C CERTIFICATION

Result: PASS

Tested by: ADVANCED COMPLIANCE LABORATORY

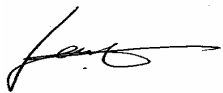
Test Date: September 7-16, 2009

Report Number: 0048-090901-01-FCC

The above equipment was tested by Compliance Laboratory, Advanced Technologies, Inc. for compliance with the requirement set forth in the FCC rules and regulations Part 15 subpart C. This said equipment in the configuration described in the report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

The estimated uncertainty of the test result is given as following. The method of uncertainty calculation is provided in Advanced Compliance Lab. Doc. No. 0048-01-01.

	Prob. Dist.	Uncertainty(dB)	Uncertainty(dB)	Uncertainty(dB)
		30-1000MHz	1-6.5GHz	Conducted
Combined Std. Uncertainty u_c	norm.	± 2.36	± 2.99	± 1.83



Wei Li
Lab Manager
Advanced Compliance Lab

Date: September 16, 2009

1.2 Equipment Modifications

N/A

1.3 Product Information

System Configuration

ITEM	DESCRIPTION	FCC ID	CABLE
Product	JB TAG JB-751 ⁽¹⁾	ST2-JB751	
Housing	PLASTICS		
Power Supply	3V DC Battery		
Operation Freq.	909.3MHz/ 912.6MHz/ 918.7MHz/ 921.4MHz		
Receiver	JB-751(RX)	Verification	

(1) EUT submitted for grant.

1.4 Test Methodology

Radiated tests were performed according to the procedures in ANSI C63.4-2003 at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated and conducted data are located at Hillsborough, New Jersey. This site has been accepted by FCC to perform measurements under Part 15 or 18 in a letter dated May 19, 1997 (Refer to: 31040/PRV 1300F2). The NVLAP Lab code for accreditation of FCC EMC Test Method is: 200101-0.

1.6 Test Equipment

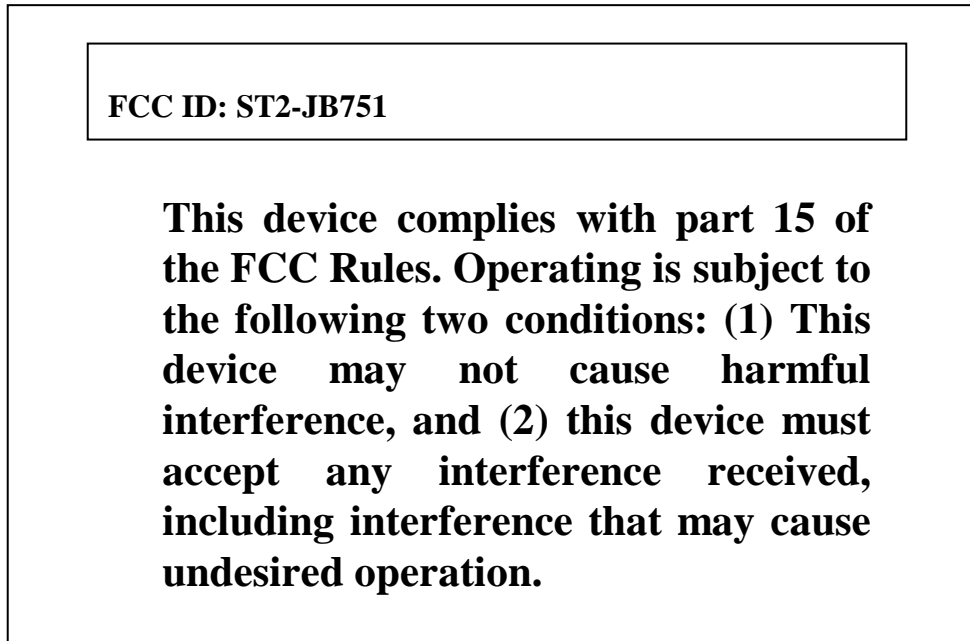
Manufacture	Model	Serial No.	Description	Last Cal dd/mm/yy	Cal Due dd/mm/yy
Hewlett-Packard	HP8546A	3625A00341	EMI Receiver	25/09/08	25/09/09
EMCO	3115	4945	Double Ridge Guide Horn Antenna	17/10/08	17/10/09
EMCO	3104C	9307-4396	20-300MHz Biconical Antenna	19/10/08	19/10/09
EMCO	3146	9008-2860	200-1000MHz Log-Periodic Antenna	19/10/08	19/10/09
Fischer Custom	LISN-2	900-4-0008	Line Impedance Stabilization Networks	18/10/08	18/10/09
Fischer Custom	LISN-2	900-4-0009	Line Impedance Stabilization Networks	05/10/08	05/10/09

All Test Equipment Used are Calibrated Traceable to NIST Standards.

1.7 Statement for the Document Use

This report shall not be reproduced except in full, without the written approval of the laboratory. And this report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

2. PRODUCT LABELING



**Figure 2.1 FCC ID Label
(Only FCC ID shown on EUT)**



Figure 2.2 FCC Label Location

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). And its antenna was permanently attached to the EUT with max length, 3”.

Testing was performed as EUT was continuously operated at the following frequency channels:

909.3MHz/ 912.6MHz/ 918.7MHz/ 921.4MHz

Fresh external battery was used for extended operating time.

3.2 Special Accessories

N/A

3.3 Configuration of Tested System

Figure 3.1 to Figure 3.3 illustrate this system, which is tested standing along.



Figure 3.1 Radiated Test Setup, position 1



Figure 3.2 Radiated Test Setup, position 2



Figure 3.3 Radiated Test Setup, position 3

4. SYSTEM SCHEMATICS

See Attachment.

Figure 4.1 System Schematics

5. RADIATED EMISSION DATA

5.1 Field Strength Calculation

The corrected field strength is automatically calculated by EMI Receiver using following:

$$FS = RA + AF + CF + AG$$

where FS: Corrected Field Strength in dB μ V/m

RA: Amplitude of EMI Receiver before correction in dB μ V

AF: Antenna Factor in dB/m

CF: Cable Attenuation Factor in dB

AG: Built-in Preamplifier Gain in dB (Stored in receiver as part of the calibration data)

THE "DUTY CYCLE CORRECTION FACTOR" FOR SPURIOUS RADIATED EMISSIONS IS;
 $10 \log * (2.5 \times 2 \text{ ms} / 100 \text{ ms}) = -13 \text{ dB}$, WHICH WAS USED TO CORRECT THE AVERAGE
 RADIATED EMISSION READINGS.

5.2 Test Methods and Conditions

The initial step in collecting radiated data is a EMI Receiver scan of the measurement range below 30MHz using peak detector and 9KHz IF bandwidth / 30KHz video bandwidth. For the range 30MHz - 1GHz, 120KHz IF bandwidth / 120KHz video bandwidth are used. Both bandwidths are 1MHz for above 1GHz measurement. Up to 10th harmonics were investigated.

5.3 Test Data

The following data lists the significant emission frequencies, polarity and position, peak reading of the EMI Receiver, the FCC limit, and the difference between the peak reading and the limit. Explanation of the correction and calculation are given in section 5.1.

Test Personnel: _____



Typed/Printed Name: Edward Lee

Date: September 16, 2009

Radiated Test Data (CH-909.3MHz /912.6MHz /918.7MHz /921.4MHz)

Frequency (MHz)	Polarity (V,H) Position (X,Y,Z)	Antenna Height (m)	Azimuth (Degree)	Peak Reading at 3m (2) (dBuV/m)	Peak Reading After Correction (dBuV/m)	FCC 3m Limit (1) (dBuV/m)	Difference (dBuV/m)
909.3	V/X	1.5	250	84.3	71.3	94	-22.7
1818.6	V/X	1.0	190	50.2	37.2	54	-16.8
2727.9	V/X	1.0	180	57.3	44.3	54	-9.7
909.3	H/X	1.0	225	87.9	74.9	94	-19.1
1818.6	H/X	1.4	280	55.5	42.5	54	-11.5
2727.9	H/X	1.2	110	64.0	51	54	-3
912.6	V/X	1.1	270	83.1	70.1	94	-23.9
1825.2	V/X	1.1	190	48.9	35.9	54	-18.1
2737.8	V/X	1.0	160	56.8	43.8	54	-10.2
912.6	H/X	1.0	270	88.6	75.6	94	-18.4
1825.2	H/X	1.3	290	56.8	43.8	54	-10.2
2737.8	H/X	1.2	150	61.0	48	54	-6
918.7	V/X	1.0	270	83.3	70.3	94	-23.7
1837.4	V/X	1.0	200	47.5	34.5	54	-19.5
2756.1	V/X	1.2	160	59.0	46	54	-8
918.7	H/X	1.0	270	88.6	75.6	94	-18.4
1837.4	H/X	1.4	270	54.6	41.6	54	-12.4
2756.1	H/X	1.2	140	62.8	49.8	54	-4.2
921.4	V/X	1.0	270	84.6	71.6	94	-22.4
1842.8	V/X	1.1	045	48.7	35.7	54	-18.3
2764.2	V/X	1.1	135	56.3	43.3	54	-10.7
921.4	H/X	1.0	270	89.9	76.9	94	-17.1
1842.8	H/X	1.4	300	59.7	46.7	54	-7.3
2764.2	H/X	1.2	145	62.9	49.9	54	-4.1
909.3	V/Y	1.2	170	89.6	76.6	94	-17.4
1818.6	V/Y	1.1	010	51.2	38.2	54	-15.8
2727.9	V/Y	1.3	000	61.4	48.4	54	-5.6
909.3	H/Y	1.0	000	80.6	67.6	94	-26.4
1818.6	H/Y	1.1	335	46.5	33.5	54	-20.5
2727.9	H/Y	1.2	225	57.3	44.3	54	-9.7

912.6	V/Y	1.2	160	89.0	76	94	-18
1825.2	V/Y	1.2	210	51.0	38	54	-16
2737.8	V/Y	1.1	190	60.2	47.2	54	-6.8
912.6	H/Y	1.0	350	83.0	70	94	-24
1825.2	H/Y	1.3	050	49.2	36.2	54	-17.8
2737.8	H/Y	1.2	350	57.7	44.7	54	-9.3
918.7	V/Y	1.3	150	90.7	77.7	94	-16.3
1837.4	V/Y	1.2	200	53.0	40	54	-14
2756.1	V/Y	1.2	180	61.7	48.7	54	-5.3
918.7	H/Y	1.1	010	83.9	70.9	94	-23.1
1837.4	H/Y	1.1	050	47.8	34.8	54	-19.2
2756.1	H/Y	1.1	340	56.1	43.1	54	-10.9
921.4	V/Y	1.2	170	91.1	78.1	94	-15.9
1842.8	V/Y	1.2	235	51.9	38.9	54	-15.1
2764.2	V/Y	1.2	175	61.1	48.1	54	-5.9
921.4	H/Y	1.0	000	84.1	71.1	94	-22.9
1842.8	H/Y	1.2	035	48.0	35	54	-19
2764.2	H/Y	1.1	000	56.9	43.9	54	-10.1
909.3	V/Z	1.0	010	82.6	69.6	94	-24.4
1818.6	V/Z	1.2	000	52.1	39.1	54	-14.9
2727.9	V/Z	1.1	000	64.0	51	54	-3
909.3	V/Z	1.0	045	87.1	74.1	94	-19.9
1818.6	H/Z	1.1	090	49.5	36.5	54	-17.5
2727.9	H/Z	1.2	125	55.5	42.5	54	-11.5
912.6	V/Z	1.0	020	83.7	70.7	94	-23.3
1825.2	V/Z	1.2	000	51.8	38.8	54	-15.2
2737.8	V/Z	1.2	010	64.9	51.9	54	-2.1
912.6	H/Z	1.0	060	85.3	72.3	94	-21.7
1825.2	H/Z	1.2	100	50.0	37	54	-17
2737.8	H/Z	1.2	080	54.8	41.8	54	-12.2
918.7	V/Z	1.1	010	82.8	69.8	94	-24.2
1837.4	V/Z	1.2	000	50.0	37	54	-17
2756.1	V/Z	1.0	070	62.4	49.4	54	-4.6
918.7	H/Z	1.2	060	86.1	73.1	94	-20.9
1837.4	H/Z	1.2	090	49.8	36.8	54	-17.2
2756.1	H/Z	1.1	060	53.9	40.9	54	-13.1

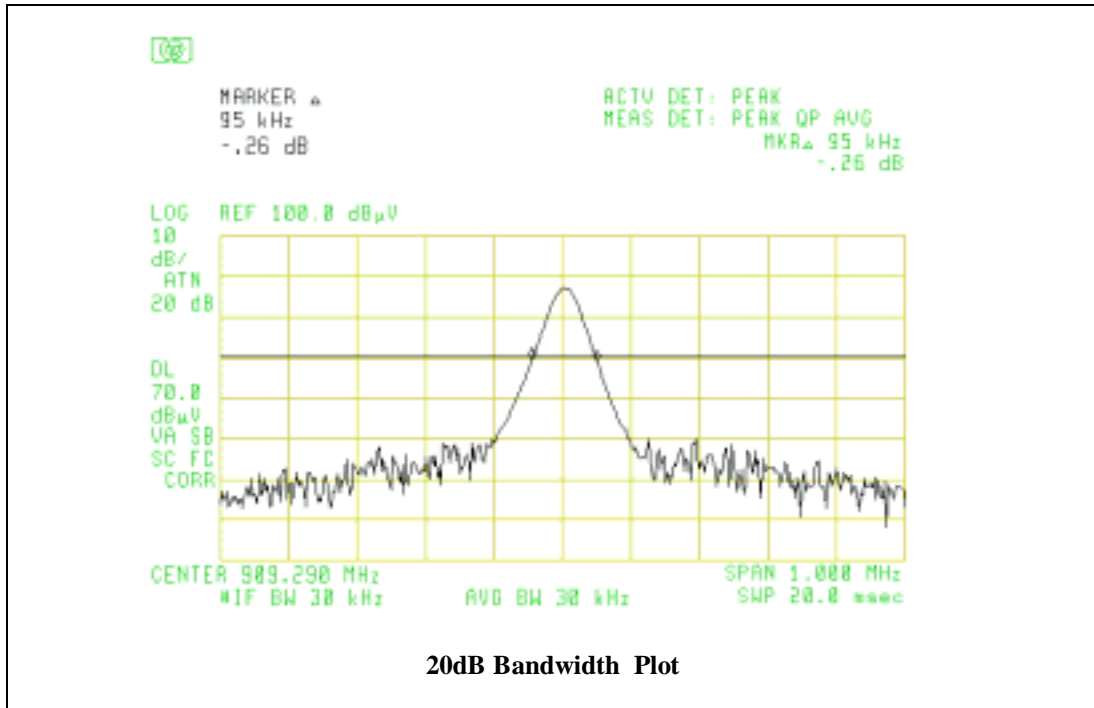
921.4	V/Z	1.0	025	84.1	71.1	94	-22.9
1842.8	V/Z	1.1	045	48.0	35	54	-19
2764.2	V/Z	1.1	090	64.5	51.5	54	-2.5
921.4	H/Z	1.2	040	87.1	74.1	94	-19.9
1842.8	H/Z	1.2	045	51.9	38.9	54	-15.1
2764.2	H/Z	1.1	000	55.9	42.9	54	-11.1

(1) The limit for emissions within the 902-928MHz band is 50mV(94dB) per Sec. 15.249. The limit for its harmonics is 500uV (54dB). Other spurious emissions shall be lower than either its fundamental by 50dB or the limit defined in Sec. 15.209, whichever is higher.

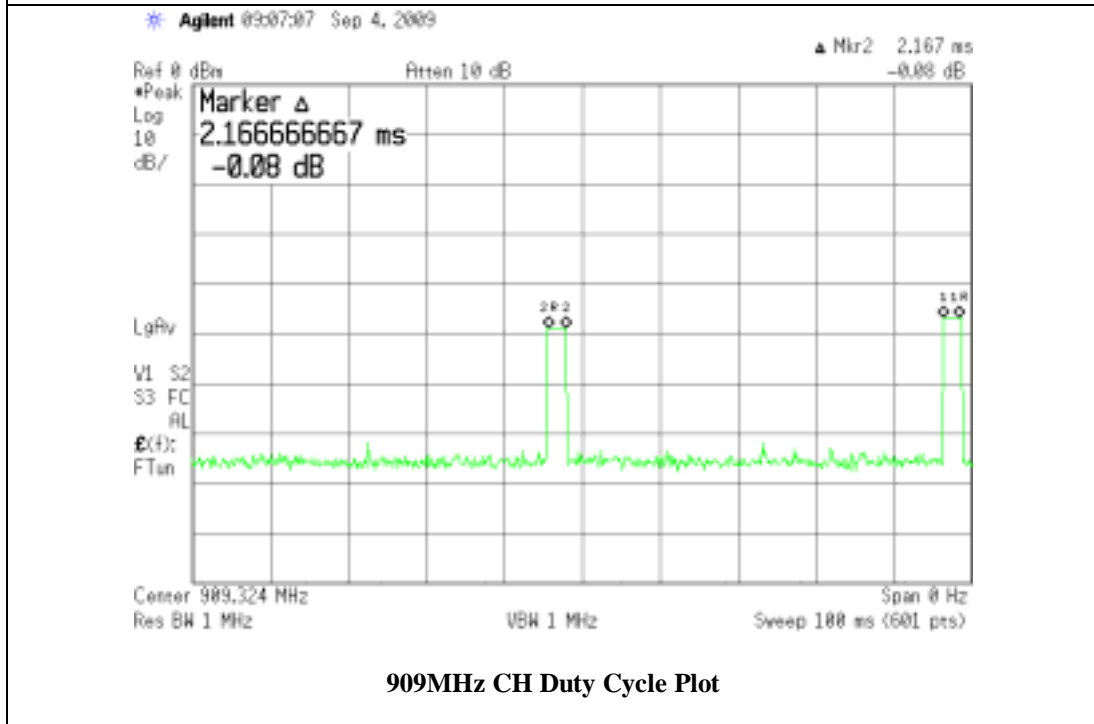
(2) If each peak reading is less than the FCC average limit, it'll be not necessary to show the measured/ calculated average reading.

Other Spurious outside of the band 902-928MHz

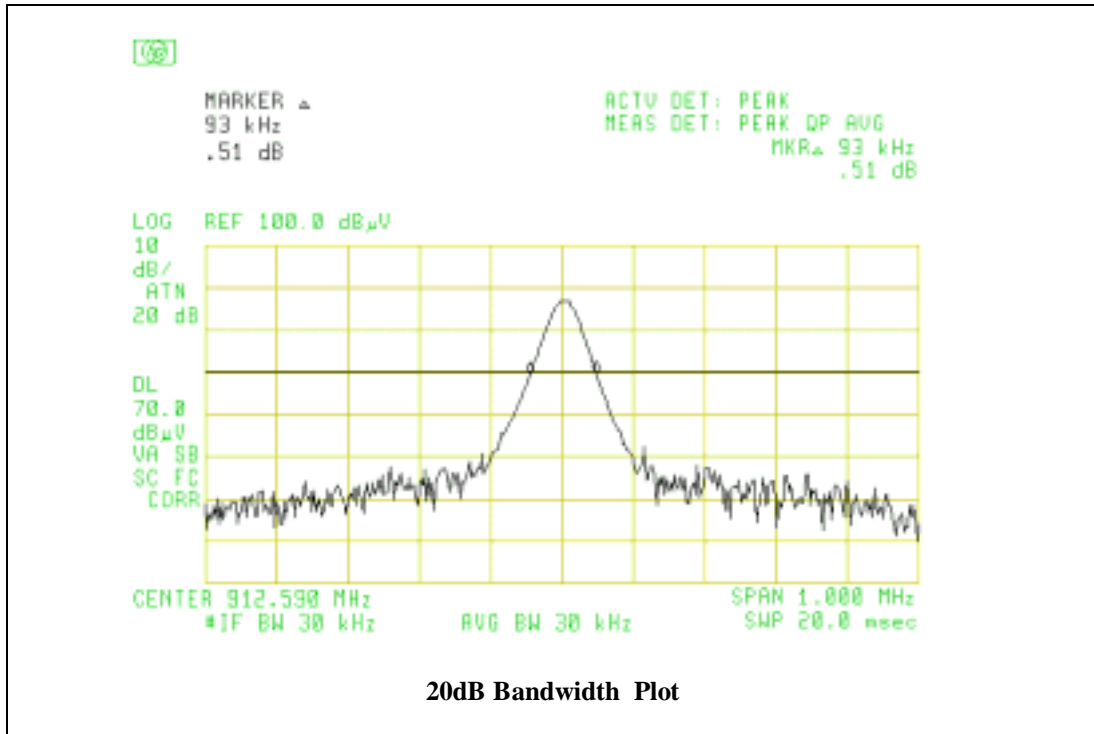
No other significant spurious emissions were founded for outside of the band 902-928MHz.
i.e. Comparing to the limit defined in Sec. 15.209, emissions below the limit by 20dB were not recorded.



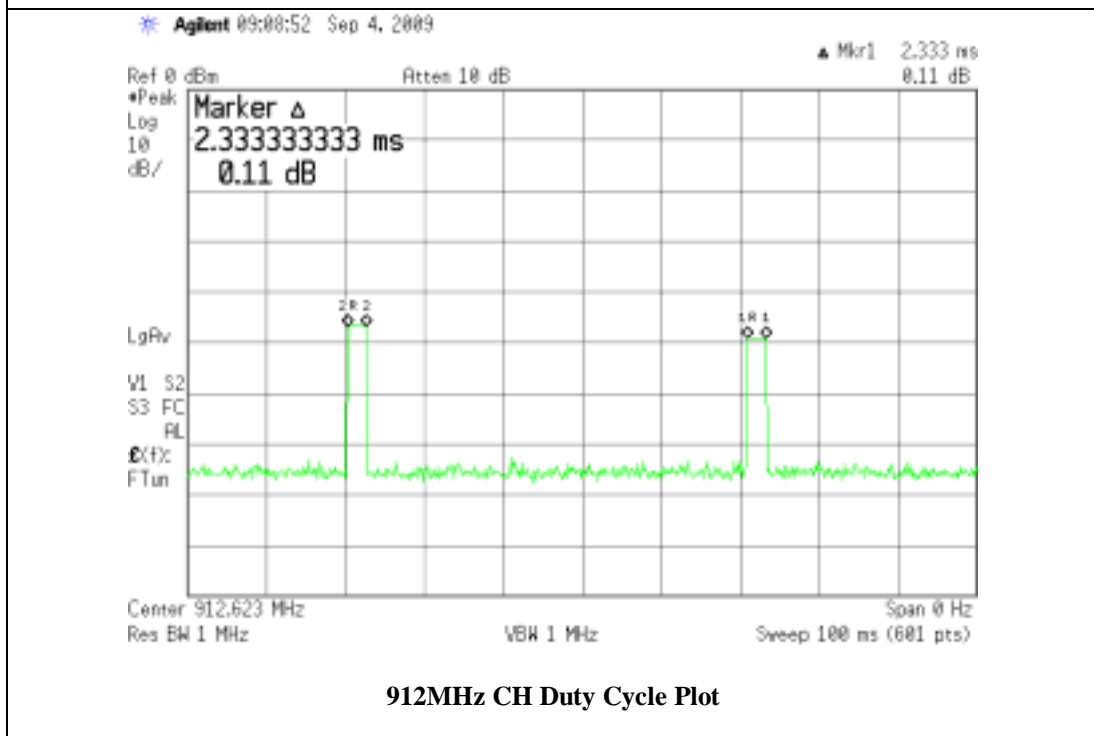
20dB Bandwidth Plot



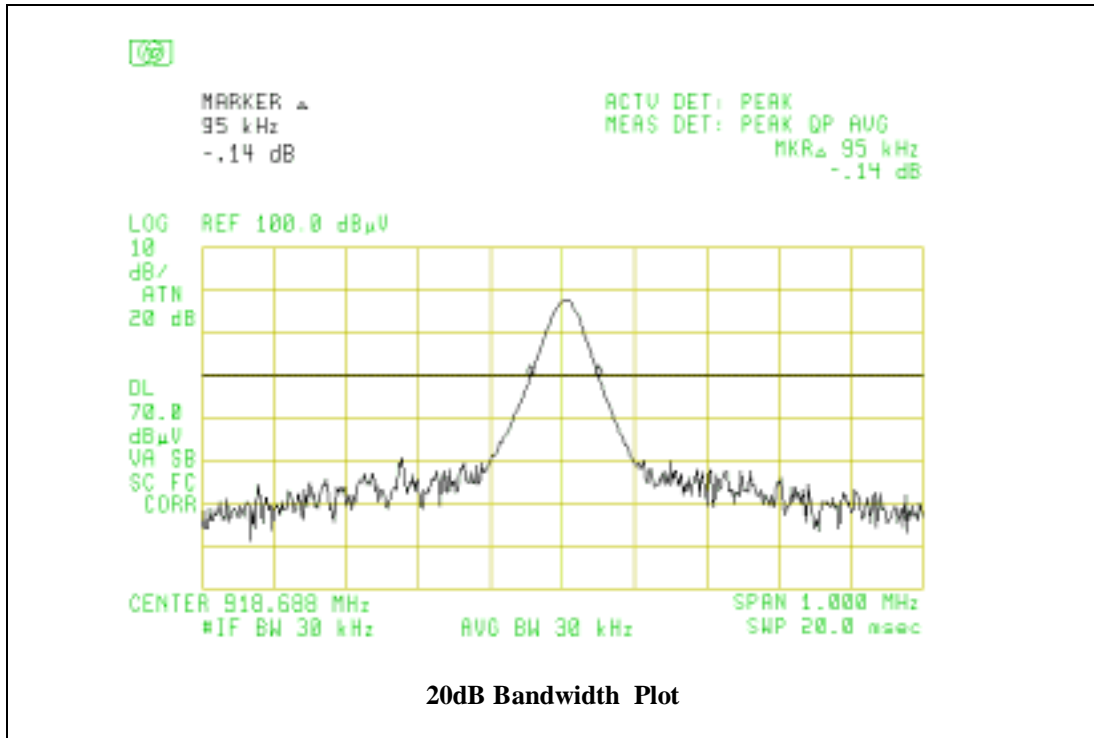
909MHz CH Duty Cycle Plot



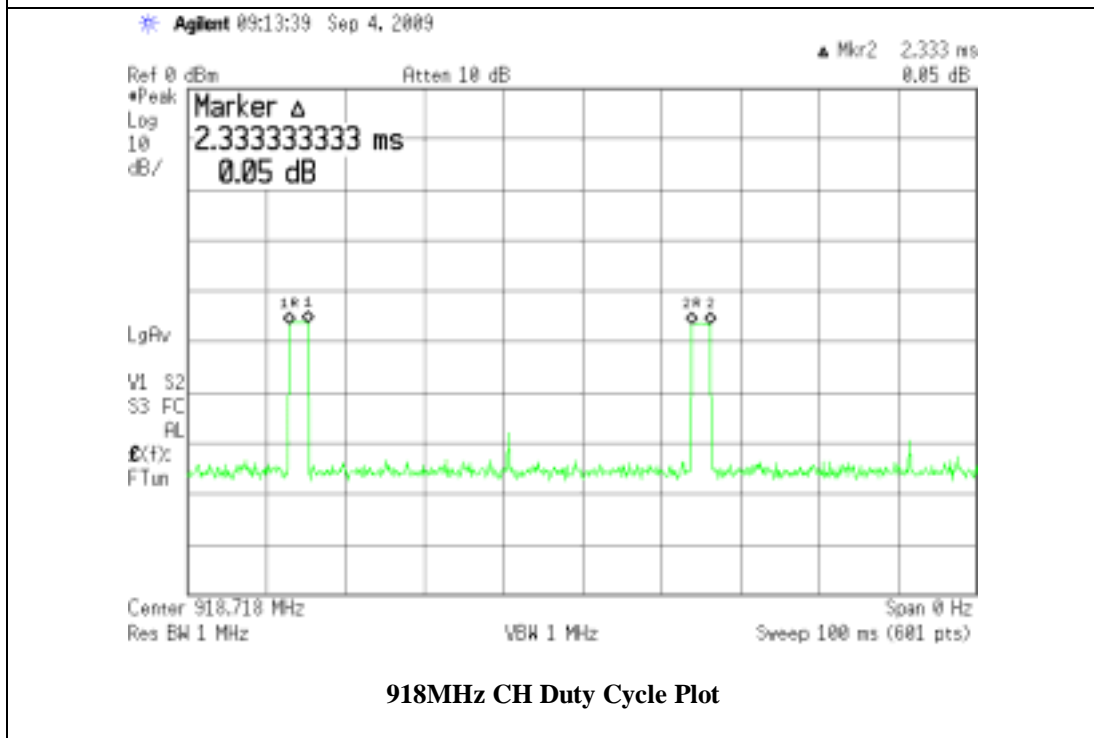
20dB Bandwidth Plot



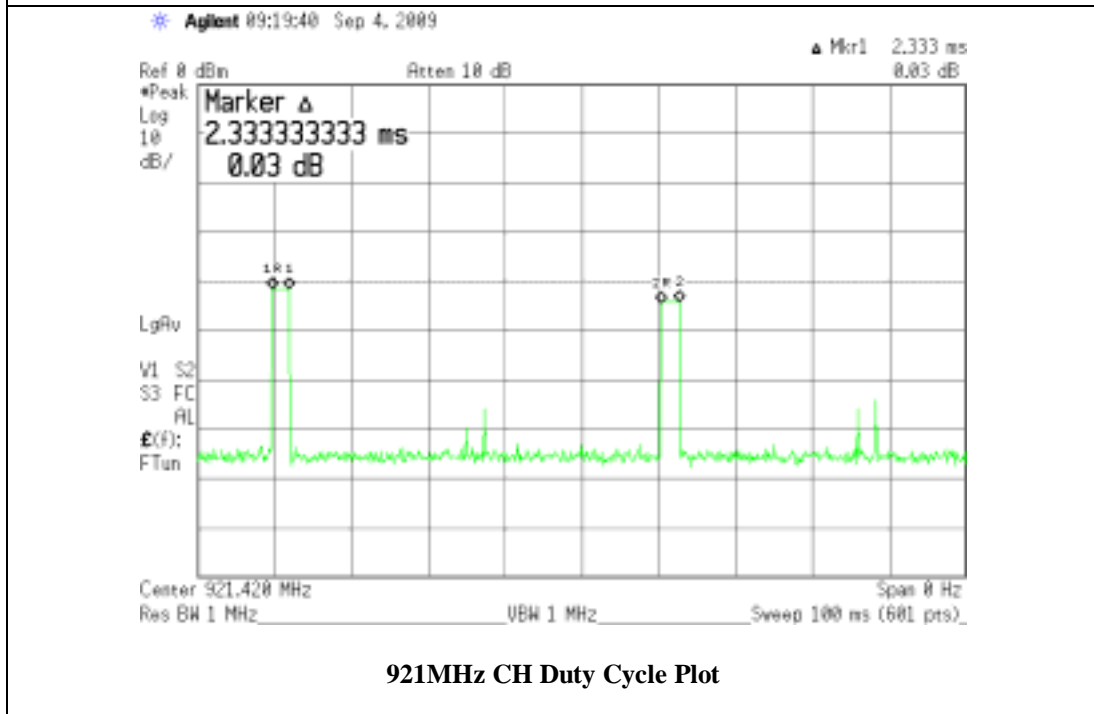
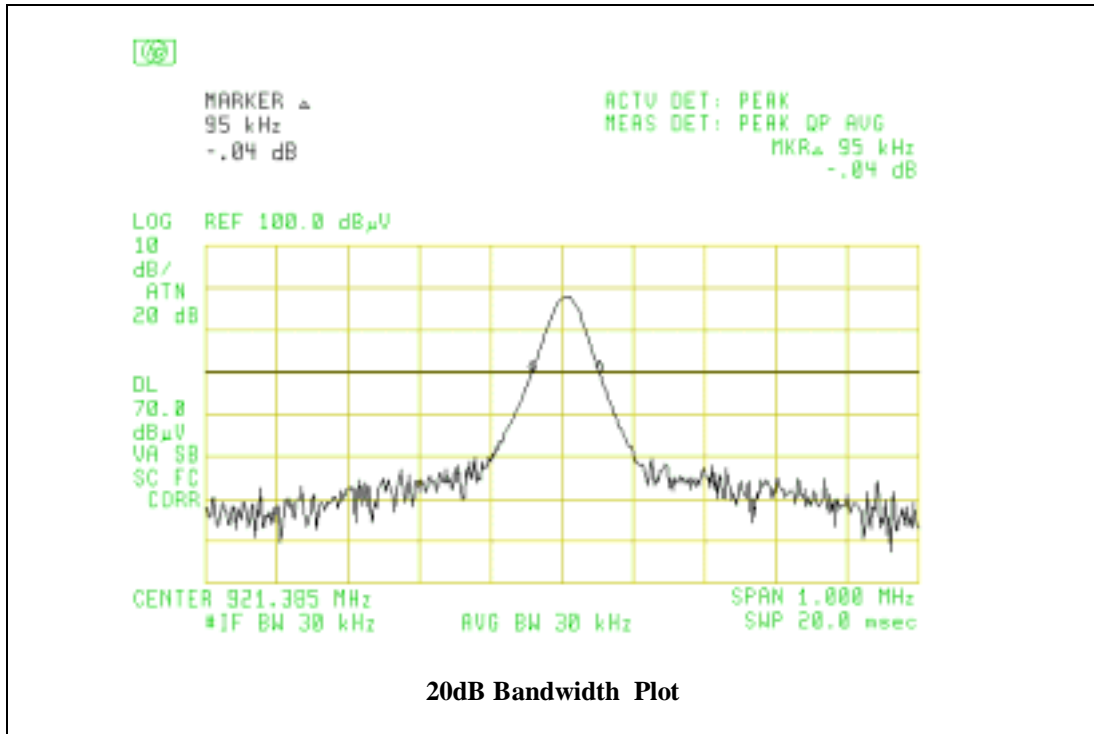
912MHz CH Duty Cycle Plot



20dB Bandwidth Plot



918MHz CH Duty Cycle Plot



6. EUT RECEIVING MODE VERIFICATION

Radiated Test Data for Receiving Mode (worst case: Z-position)

Frequency (MHz)	Polarity (H or V)	Antenna Height (m)	Azimuth (Degree)	Peak Reading at 3m(2) (dBuV/m)	FCC 3m Limit(1) (dBuV/m)	Difference (dBuV/m)
52	V	1	20	28.0	40	-12
312	H	1	300	27.2	46	-18.8

(1) Receiving mode spurious emissions shall be lower than the limit defined in Sec. 15.209.

(2) Only the emissions from EUT were recorded. If each peak reading is less than the FCC Qp or average limit, it'll be not necessary to show the measured or calculated QP /average reading.