

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

OF

NFC-9800 interrogator

**MODEL No.: NFC-9814, NFC-9801, NFC-9811, NFC-9812
NFC-9501, NFC-9221, NFC-9231, NFC-9511
NFC-9800**

FCC ID: VM7NFC-9814

REPORT NO: E0709612E

ISSUE DATE: November 08, 2007

Prepared for

**Shenzhen New Force communication Technology Co.,Ltd.
8061 west HongLi Rd,zhongHe Bldg,ste.110-218 Fu Tian District,Shenzhen,
China**

Prepared by

DONGGUAN EMTEK Co., Ltd.

**No.281,Guantai Road,Nancheng District,Dongguan,
Guangdong,China.
TEL: 86-769-22807078
FAX: 86-769-22807079**

VERIFICATION OF COMPLIANCE

Applicant:	Shenzhen New Force communication Technology Co.,Ltd. 8061 west HongLi Rd,zhongHe Bldg,ste.110-218 Fu Tian District,Shenzhen,China
Product Description:	NFC-9800 interrogator
Model Number:	NFC-9814, NFC-9801, NFC-9811, NFC-9812, NFC-9800, NFC-9501, NFC-9221, NFC-9231, NFC-9511 (Note:Test model number is NFC-9814)
Serial Number:	N/A
File Number:	E0709612E
Date of Test:	November 01, 2007 to November 08, 2007

We hereby certify that:

The above equipment was tested by SHENZHEN EMTEK Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC 15 Paragraph 15.205, Paragraph 15.209, Paragraph 15.249,Paragraph 15.31, Paragraph 15.33.

The test results of this report relate only to the tested sample identified in this report.

Approved By

Jacky

Jacky/ Q.A. Manager
DONGGUAN EMTEK Co., Ltd.

Table of Contents

1.	GENERAL INFORMATION	5
1.1	Product Description.....	5
1.2	Related Submittal(s) / Grant (s).....	5
1.3	Test Methodology	5
1.4	Special Accessories	5
1.5	Equipment Modifications.....	5
1.6	Test Facility.....	6
2.	SYSTEM TEST CONFIGURATION	7
2.1	EUT Configuration.....	7
2.2	EUT Exercise	7
2.3	Test Procedure.....	7
2.4	Limitation	8
2.5	Configuration of Tested System.....	10
3.	SUMMARY OF TEST RESULTS	11
4.	DESCRIPTION OF TEST MODES	11
5.	CONDUCTED EMISSIONS TEST	12
5.1	Measurement Procedure:.....	12
5.2	Test SET-UP (Block Diagram of Configuration).....	12
5.3	Measurement Equipment Used:	12
5.4	Measurement Result:.....	13
5.5	Conducted Measurement Photos:.....	17
6.	RADIATED EMISSION TEST	19
6.1	Measurement Procedure.....	19
6.2	Test SET-UP (Block Diagram of Configuration).....	20
6.3	Measurement Equipment Used:	20
6.4	Measurement Result.....	21
7.	MAXIMUM PEAK OUTPUT POWER TEST	30
7.1	Measurement Procedure.....	30
7.2	Test SET-UP (Block Diagram of Configuration)	30
7.3	Measurement Equipment Used:	30
7.4	Peak Power output limit.....	30
7.5	Measurement Results:	30
8.	OCCUPIED BANDWIDTH.....	31
8.1	Measurement Procedure.....	31
8.2	Test SET-UP (Block Diagram of Configuration).....	31
8.3	Measurement Equipment Used:	31
8.4	Measurement Results:	31

9. ANTENNA APPLICATION	33
PHOTOGRAPHS OF EUT	34

1. GENERAL INFORMATION

1.1 Product Description

Shenzhen New Force communication Technology Co.,Ltd. Model: NFC-9814 (referred to as the EUT in this report) The EUT is an short range, lower power, NFC-9814 interrogator designed as an Input Device.

A major technical descriptions of EUT is described as following:

A). Operation Frequency: 915 MHz, one channel.

B). Power Supply: DC 5V/5A with Adapter

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: VM7NFC-9814 filing to comply with Section 15.249 of the FCC Part 15, Subpart B and Subpart C Rules. The composite system (receiver) is compliance with Subpart B is authorized under a DoC procedure.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description

EMC Lab.

: Accredited by CNAS, 2005.11.02
The certificate is valid until 2010.11
The Laboratory has been assessed and proved to be in compliance with CNAS/CL01:2006(identical to ISO/IEC17025:2005)
The Certificate Registration Number is L2291

Accredited by TUV Rheinland Guangzhou, 2005.1
The certificate is valid until 2008.2
The Laboratory has been assessed according to the requirements ISO/IEC 17025:1999

Accredited by FCC, July 07, 2005
The Certificate Registration Number is 709623.

Accredited by Industry Canada, August 30, 2005
The Certificate Registration Number is 46405-4480

Name of Firm

: SHENZHEN EMTEK Co., Ltd.

Site Location

: Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

2. SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the **frequency range between 0.15 MHz and 30MHz** using **CISPR Quasi-Peak and average detector mode**.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

2.4 Limitation

(1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note		
1.The lower limit shall apply at the transition frequencies		
2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

(2) Radiated Emission FCC Rule:15.249(a)

FCC Part 15,Subpart C Section 15.249.The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Frequency (MHz)	Field strength of Fundamental(at 3m) dBμV/m		Field strength of Harmonics(at 3m) dBμV/m	
	PEAK	AVERAGE	PEAK	AVERAGE
902-928	114	94	74.0	54.0
2400-2483.5	114	94	74.0	54.0
5725-5875	114	94	74.0	54.0
24000-24250	128	108	88.0	68.0

Radiated Emission FCC Rule:15.249(d)(e)

FCC Part 15,Subpart C Section 15.209.limit of radiated emission for frequency below 1000GHz.The emissions from an intentional radiator shall not exceed the field strength level specified in the following table:

Frequency (MHz)	Field strength μV/m	Distance(m)	Field Strength at 3m dBμV/m
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

- Remark:
1. Emission level in dBuV/m= $20 \log (\mu\text{V/m})$
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of $\xi 15.205$
 4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of $\xi 15.205$, then the general radiated emission limits in $\xi 15.209$ apply.

FCC Part 15,Section 15.35(b)limit of radiated emission for frequency above 1000MHz

Frequency (MHz)	Class A(dB $\mu\text{V/m}$) at 3m		Class B(dB $\mu\text{V/m}$) at 3m	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

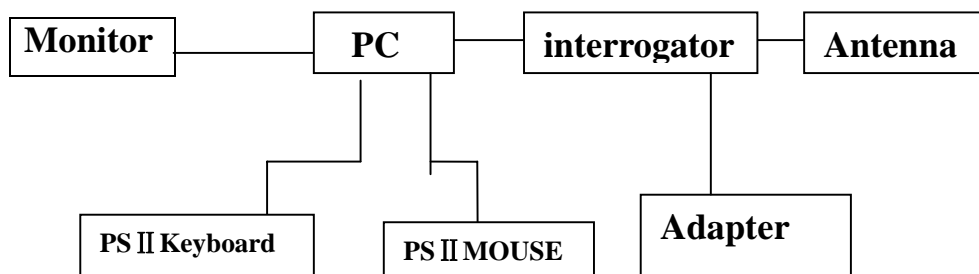


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
1.	NFC-9800 interrogator	New Force	NFC-9814	VM7NFC-9814	N/A	EUT
2.	Monitor	SAMSUNG	V98725M	N/A	N/A	
3.	PC	Lenovo	E58237BN	N/A	N/A	
4.	Keyboard	IBM	VP253424R	N/A	N/A	
5.	Mouse	IBM	DF432532C	N/A	N/A	
6.	Adapter	DVE	DSA-0421S-051	N/A	N/A	

Note:

Unless otherwise denoted as EUT in [Remark] column, device(s) used in tested system is a support equipment

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§ 15.207	Conducted Emission	Complicant
§ 15.249(a),(b),(d),(e), § 15.209	Radiated Emission	Compliant
§ 15.203	Antenna Requirement	Compliant

4. DESCRIPTION OF TEST MODES

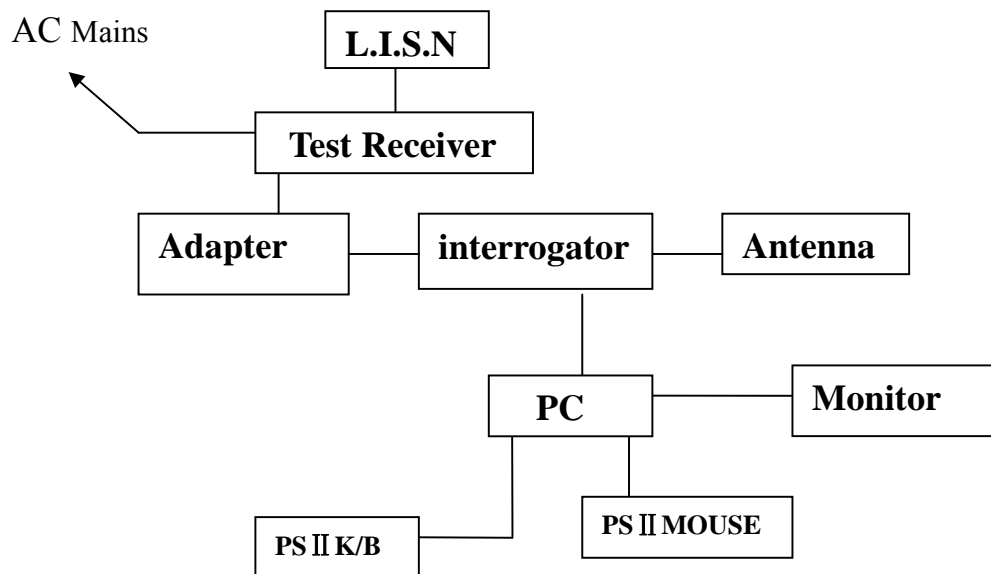
The EUT (NFC-9800 interrogator) has been tested under normal operating condition.
The EUT stay in continuous transmitting mode. The Frequency 915 MHz are chosen for testing.

5. CONDUCTED EMISSIONS TEST

5.1 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)



5.3 Measurement Equipment Used:

Conducted Emission Test Site # 4					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2007	05/29/2008
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/29/2007	05/29/2008
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/29/2007	05/29/2008
50ΩCoaxial Switch	Anritsu	MP59B	M20531	05/29/2007	05/29/2008

5.4 Measurement Result:

Date of Test	: Nov 07, 2007	Temperature	: 22°C
EUT	: NFC-9800 interrogator	Humidity	: 50%
M/N	: NFC-9814	Test Mode	: Connect to ANT1
Power Supply	: AC 120V/60Hz	Test Engineer	: LZH

Test Line	Frequency MHz	Emission Level QP dB(μV)	Emission Level AV dB(μV)	Limit QP dB(μV)	Limit AV dB(μV)	Margin QP dB(μV)	Margin AV dB(μV)
Nature	0.475	34.9	33.4	56.4	46.4	-21.5	-13.0
	0.526	27.5	21.5	56.0	46.0	-28.5	-24.5
	0.604	28.7	20.5	56.0	46.0	-27.3	-25.5
	0.968	24.5	17.8	56.0	46.0	-31.5	-28.2
	13.502	31.5	30.9	60.0	50.0	-28.5	-19.1
	14.102	35.3	31.2	60.0	50.0	-24.7	-18.8
Line	0.183	37.5	27.4	64.4	54.4	-26.9	-27.0
	0.475	35.8	33.5	56.4	46.4	-20.6	-12.9
	0.598	27.4	21.8	56.0	46.0	-28.6	-24.2
	0.954	24.8	18.3	56.0	46.0	-31.2	-27.7
	13.410	33.0	31.3	60.0	50.0	-27.0	-18.7
	14.120	33.4	31.8	60.0	50.0	-26.6	-18.2
Remark: The worst emission is detected at 0.475MHz with corrected AV signal Level of 33.5dBμV (Limit is 46.4 dBμV). When the Line of the EUT is connected to L.I.S.N							

Date of Test	: Nov 07, 2007	Temperature	: 22°C
EUT	: NFC-9800 interrogator	Humidity	: 50%
M/N	: NFC-9814	Test Mode	: Connect to ANT1 and ANT2
Power Supply	: AC 120V/60Hz	Test Engineer	: LZH

Test Line	Frequency MHz	Emission Level QP dB(μV)	Emission Level AV dB(μV)	Limit QP dB(μV)	Limit AV dB(μV)	Margin QP dB(μV)	Margin AV dB(μV)
Nature	0.478	34.8	32.8	56.4	46.4	-21.6	-13.6
	0.634	29.5	24.6	56.0	46.0	-26.5	-21.4
	0.782	29.6	24.5	56.0	46.0	-26.4	-21.5
	0.968	24.5	17.8	56.0	46.0	-31.5	-28.2
	16.345	34.4	33.6	60.0	50.0	-25.6	-16.4
	18.456	35.9	31.8	60.0	50.0	-24.1	-18.2
Line	0.186	36.9	27.0	64.3	54.3	-27.4	-27.3
	0.506	38.5	35.7	56.0	46.0	-17.5	-10.3
	0.578	28.5	24.2	56.0	46.0	-27.5	-21.8
	1.032	26.4	20.5	56.0	46.0	-29.6	-25.5
	12.452	33.8	31.8	60.0	50.0	-26.2	-18.2
	17.348	35.9	33.8	60.0	50.0	-24.1	-16.2

Remark: The worst emission is detected at **0.506MHz** with corrected AV signal Level of **35.7** dBμV (Limit is 46.0 dBμV). When the Line of the EUT is connected to L.I.S.N

Date of Test	: Nov 07, 2007	Temperature	: 22°C
EUT	: NFC-9800 interrogator	Humidity	: 50%
M/N	: NFC-9814	Test Mode	: Connect to ANT1,ANT2 and ANT3
Power Supply	: AC 120V/60Hz	Test Engineer	: LZH

Test Line	Frequency MHz	Emission Level QP dB(μV)	Emission Level AV dB(μV)	Limit QP dB(μV)	Limit AV dB(μV)	Margin QP dB(μV)	Margin AV dB(μV)
Nature	0.483	35.3	32.6	56.3	46.3	-21.0	-13.7
	0.526	32.4	26.8	56.0	46.0	-23.6	-19.2
	0.763	33.5	26.7	56.0	46.0	-22.5	-19.3
	1.852	30.1	26.4	56.0	46.0	-25.9	-19.6
	13.245	35.2	34.2	60.0	50.0	-24.8	-15.8
	15.257	40.2	35.4	60.0	50.0	-19.8	-14.6
Line	0.184	38.8	28.6	64.4	54.4	-25.6	-25.8
	0.467	40.2	36.4	56.6	46.6	-16.4	-10.2
	0.658	32.4	25.4	56.0	46.0	-23.6	-20.6
	1.256	28.6	24.4	56.0	46.0	-27.4	-21.6
	13.246	35.2	30.1	60.0	50.0	-24.8	-19.8
	14.524	34.8	32.7	60.0	50.0	-25.2	-17.3

Remark: The worst emission is detected at **0.467MHz** with corrected AV signal Level of **36.4dBμV**(Limit is 46.6 dBμV).When the Line of the EUT is connected to L.I.S.N

Date of Test	: Nov 07, 2007	Temperature	: 22°C
EUT	: NFC-9800 interrogator	Humidity	: 50%
M/N	: NFC-9814	Test Mode	: Connect to ANT1,ANT2,ANT3 and ANT4
Power Supply	: AC 120V/60Hz	Test Engineer	: LZH

Test Line	Frequency MHz	Emission Level QP dB(μV)	Emission Level AV dB(μV)	Limit QP dB(μV)	Limit AV dB(μV)	Margin QP dB(μV)	Margin AV dB(μV)
Nature	0.483	35.3	32.6	56.3	46.3	-21.0	-13.7
	0.587	29.2	23.4	56.0	46.0	-26.8	-22.6
	0.658	30.4	23.4	56.0	46.0	-25.6	-22.6
	1.236	26.8	20.3	56.0	46.0	-29.2	-25.7
	13.749	34.4	33.2	60.0	50.0	-25.6	-16.8
	15.651	38.4	34.5	60.0	50.0	-21.6	-15.5
Line	0.183	38.8	28.6	64.4	54.4	-25.6	-25.8
	0.457	36.6	34.9	56.8	46.8	-20.2	-11.9
	0.624	29.7	23.5	56.0	46.0	-26.3	-22.5
	0.874	25.7	20.2	56.0	46.0	-30.3	-25.8
	14.562	35.6	32.8	60.0	50.0	-24.4	-17.2
	15.786	35.7	33.2	60.0	50.0	-24.3	-16.8
Remark: The worst emission is detected at 0.457MHz with corrected AV signal Level of 34.9dBμV (Limit is 46.4 dBμV).When the Line of the EUT is connected to L.I.S.N							

5.5 Conducted Measurement Photos:

Connect to ANT1



Connect to ANT1 and ANT2





Connect to ANT1, ANT2 ,ANT3 and ANT4



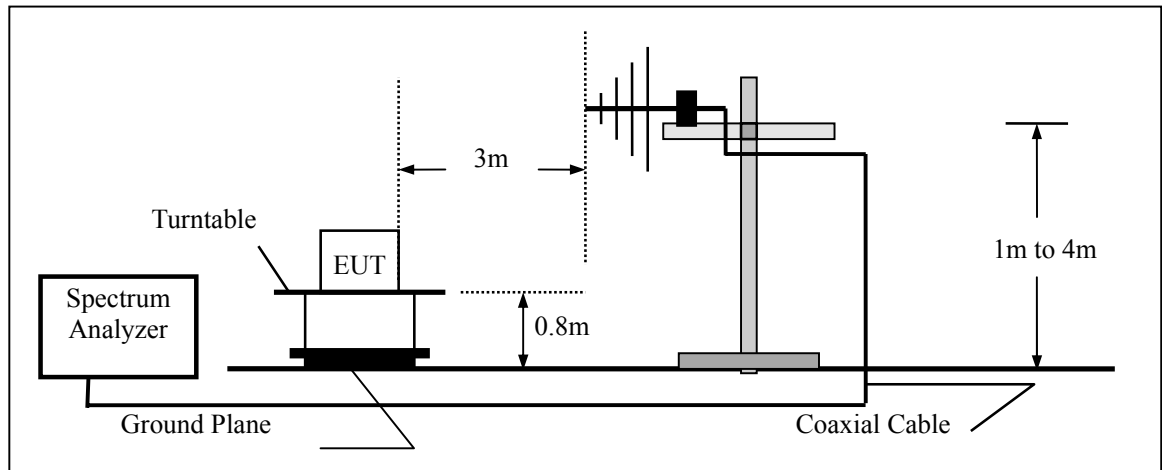
6. RADIATED EMISSION TEST

6.1 Measurement Procedure

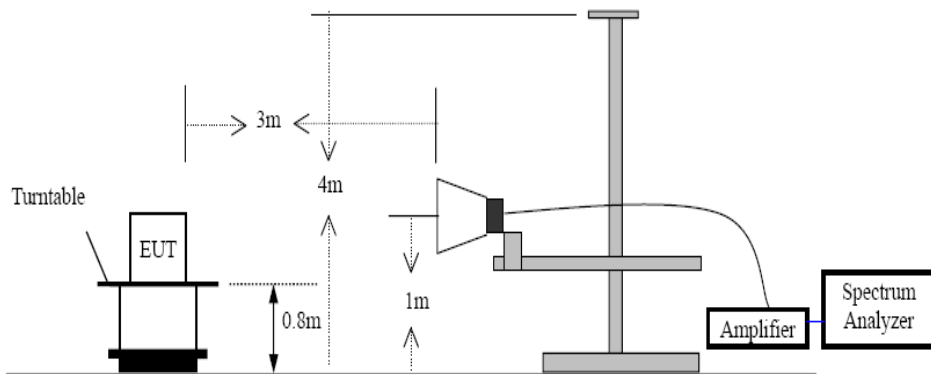
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up, Frequency above 1000MHz



6.3 Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	FSEM30	849720/019	05/29/2007	05/29/2008
Amplifier	HP	8449B	3008A00277	05/29/2007	05/29/2008
Horn Antenna	Sunol Sciences	DRH-118	A052604	05/29/2007	05/29/2008
EMI Test Receiver	Rohde & Schwarz	ESCI	100028	05/29/2007	05/29/2008
Amplifier	HP	HP8447E	1937A01046	05/29/2007	05/29/2008
Broadband Antenna	Sunol Sciences	JB1	A040904-2	05/29/2007	05/29/2008

6.4 Measurement Result

A. Fundamental Radiated Emission Data

Operation Mode: Connect to ANT1 Test Date : Nov 07, 2007
 Test Item: Fundamental Radiated Emission Data Temperature : 24 °C
 Fundamental Frequency: 915MHz Humidity : 52 %
 Test Result: PASS Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV	PK	AV	PK	AV
915.080	V	110.2	90.3	114.0	94.0	-3.8	-3.7
1830.008	V	69.8	50.1	74.0	54.0	-4.2	-3.9
2745.130	V	71.1	51.2	74.0	54.0	-2.9	-2.8
915.080	H	109.7	90.1	114	94	-4.3	-3.9
1830.008	H	70.4	50.7	74.0	54.0	-3.6	-3.3
2745.130	H	71.5	51.3	74.0	54.0	-2.5	-2.7

Note: (1) All Readings are Peak Value and AV.
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss
 (3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249

Operation Mode: Connect to ANT1 and ANT2 Test Date : Nov 07, 2007
 Test Item: Fundamental Radiated Emission Data Temperature : 24 °C
 Fundamental Frequency: 915MHz Humidity : 52 %
 Test Result: PASS Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV	PK	AV	PK	AV
915.080	V	110.6	90.7	114.0	94.0	-3.4	-3.3
1830.008	V	70.2	50.8	74.0	54.0	-3.8	-3.2
2745.130	V	71.4	51.8	74.0	54.0	-2.6	-2.2
915.080	H	110.5	90.8	114	94	-3.5	-3.2
1830.008	H	70.8	51.2	74.0	54.0	-3.2	-2.8
2745.130	H	71.7	51.7	74.0	54.0	-2.3	-2.3

Note: (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249

Operation Mode: Connect to ANT1,ANT2 and ANT3 Test Date : Nov 07, 2007
 Test Item: Fundamental Radiated Emission Data Temperature : 24 °C
 Fundamental Frequency: 915MHz Humidity : 52 %
 Test Result: PASS Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV	PK	AV	PK	AV
915.080	V	110.7	90.6	114.0	94.0	-3.3	-3.4
1830.008	V	70.9	51.2	74.0	54.0	-3.1	-2.8
2745.130	V	71.8	51.5	74.0	54.0	-2.2	-2.5
915.080	H	111.2	91.2	114	94	-2.8	-2.8
1830.008	H	71.2	51.5	74.0	54.0	-2.8	-2.5
2745.130	H	71.9	51.7	74.0	54.0	-2.1	-2.3

Note: (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249

Operation Mode: Connect to ANT1,ANT2 ,ANT3 and Test Date : Nov 07, 2007
ANT4

Test Item: Fundamental Radiated Emission Data Temperature : 24 °C

Fundamental Frequency: 915MHz Humidity : 52 %

Test Result: PASS Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)		Limit 3m (dBuV/m)		Margin (dB)	
		PK	AV	PK	AV	PK	AV
915.080	V	110.9	90.8	114.0	94.0	-3.1	-3.2
1830.008	V	70.5	51.8	74.0	54.0	-3.5	-2.2
2745.130	V	72.2	51.9	74.0	54.0	-1.8	-2.1
915.080	H	111.5	91.8	114	94	-2.5	-2.2
1830.008	H	72.3	52.5	74.0	54.0	-1.7	-1.5
2745.130	H	72.6	52.5	74.0	54.0	-1.4	-1.5

Note: (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.249

B.Spurious Radiated Emission Data

Operation Mode:	Connect to ANT1	Test Date :	Nov 07,2007
Test Item:	General Radiated Emission Data	Temperature :	24 °C
Fundamental Frequency:	915 MHz	Humidity :	52%
Test Result:	PASS	Test By:	Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
43.2	V	32.60	40.0	-7.40	Peak
78.68	V	35.82	40.0	-4.18	Peak
102.5	V	34.40	43.5	-9.10	Peak
165.23	V	35.40	43.5	-8.10	Peak
232.80	V	43.03	46.0	-2.97	Peak
785.263	V	33.52	46.0	-12.48	Peak
30.123	H	36.03	40.0	-3.97	Peak
40.214	H	34.24	40.0	-5.76	Peak
135.65	H	34.50	43.5	-9.00	Peak
232.160	H	43.99	46.0	-2.01	Peak
368.65	H	38.68	46.0	-7.32	Peak
785.56	H	41.5	46.0	-4.50	Peak

Note: (1) All Readings are Peak Value .

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209

Operation Mode: Connect to ANT1 and ANT2

Test Date : Nov 07,2007

Test Item: General Radiated Emission Data

Temperature : 24 °C

Fundamental Frequency: 915 MHz

Humidity : 52%

Test Result: PASS

Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
45.24	V	35.40	40.0	-4.60	Peak
124.25	V	38.50	43.5	-5.00	Peak
138.65	V	35.40	43.5	-8.10	Peak
221.54	V	36.80	43.5	-6.7	Peak
324.65	V	41.25	46.0	-4.75	Peak
752.65	V	38.60	46.0	-7.40	Peak
53.24	H	34.50	40.0	-5.50	Peak
78.38	H	35.65	40.0	-4.35	Peak
125.52	H	38.5	43.5	-5.00	Peak
275.56	H	41.24	46.0	-4.76	Peak
586.52	H	41.52	46.0	-4.48	Peak
825.24	H	42.40	46.0	-3.60	Peak

Note: (1) All Readings are Peak Value .

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209

Operation Mode: Connect to ANT1 ,ANT2 and ANT3 Test Date : Nov 07,2007

Test Item: General Radiated Emission Data Temperature : 24 °C

Fundamental Frequency: 915 MHz Humidity : 52%

Test Result: PASS Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
42.25	V	36.20	40.0	-3.80	Peak
108.21	V	36.90	43.5	-6.60	Peak
135.68	V	35.80	43.5	-7.70	Peak
254.35	V	37.90	43.5	-5.60	Peak
383.56	V	40.54	46.0	-5.46	Peak
823.24	V	39.90	46.0	-6.10	Peak
46.75	H	36.80	40.0	-3.20	Peak
82.35	H	36.52	40.0	-3.48	Peak
138.68	H	37.40	43.5	-6.10	Peak
265.56	H	41.20	46.0	-4.80	Peak
546.25	H	40.80	46.0	-5.20	Peak
758.35	H	41.20	46.0	-4.80	Peak

Note: (1) All Readings are Peak Value .

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209

Operation Mode: Connect to ANT1,ANT2,ANT3 and Test Date : Nov 01,2007
ANT4

Test Item: General Radiated Emission Data Temperature : 24 °C

Fundamental Frequency: 915 MHz Humidity : 52%

Test Result: PASS Test By: Cheris

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
38.25	V	34.6	40.0	-5.40	Peak
123.56	V	37.56	43.5	-5.94	Peak
186.68	V	38.45	43.5	-5.05	Peak
258.682	V	39.50	43.5	-4.00	Peak
324.43	V	42.60	46.0	-3.40	Peak
865.45	V	40.50	46.0	-5.50	Peak
38.65	H	35.20	40.0	-4.80	Peak
82.523	H	36.58	40.0	-3.42	Peak
154.35	H	40.30	43.5	-3.20	Peak
275.75	H	43.2	46.0	-2.80	Peak
652.35	H	42.30	46.0	-3.70	Peak
852.35	H	42.83	46.0	-3.17	Peak

Note: (1) All Readings are Peak Value .

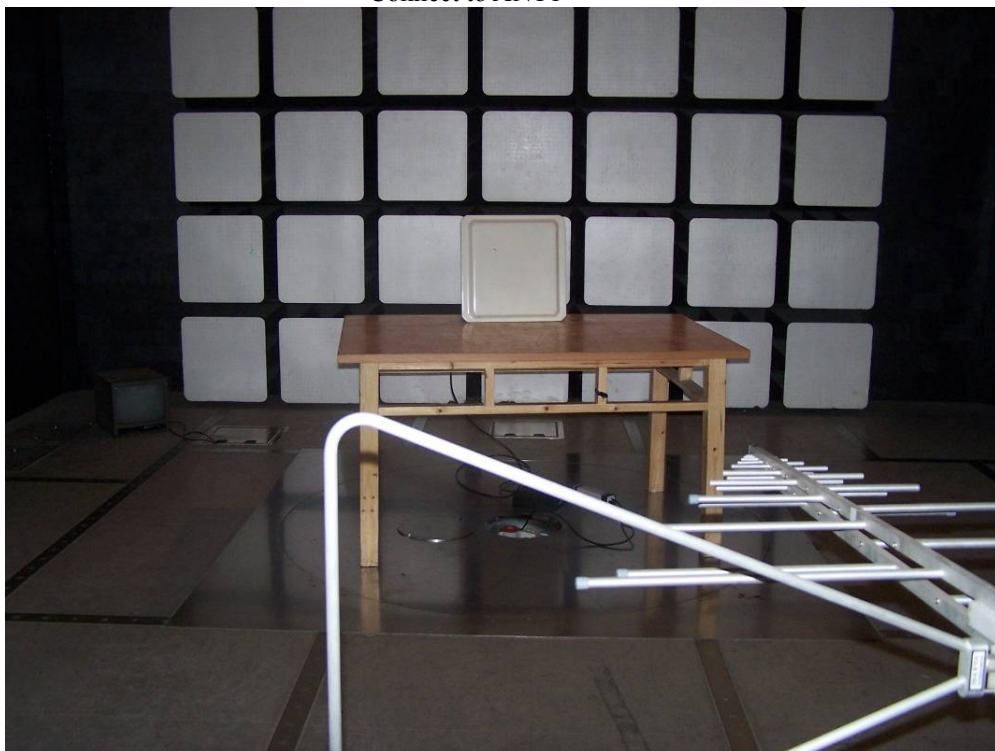
(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

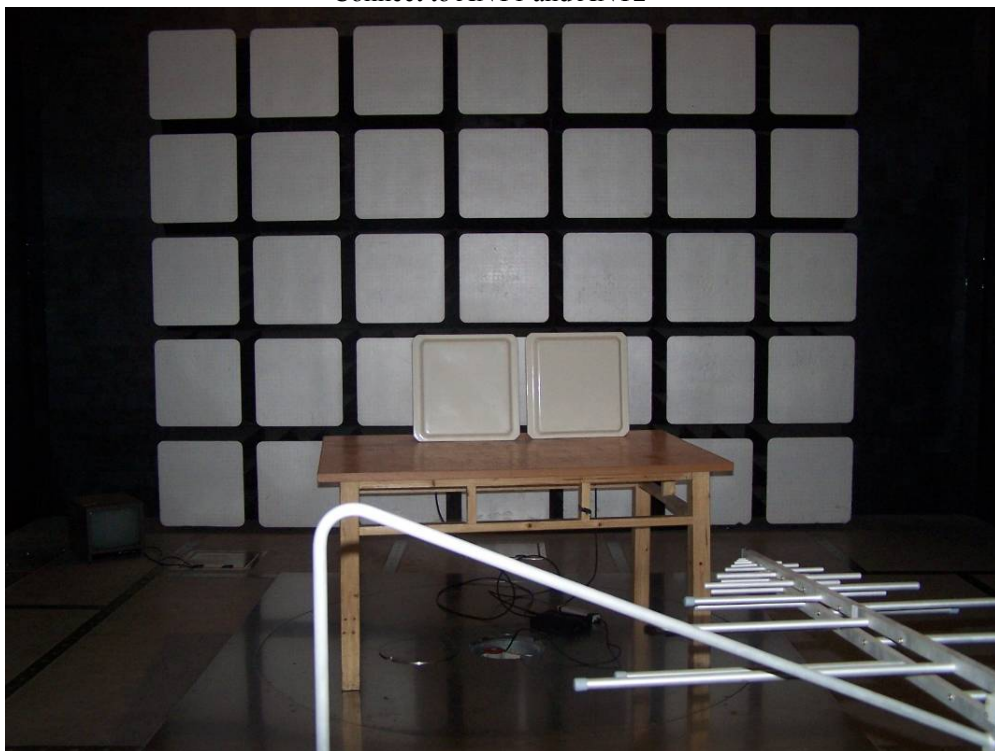
No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209

6.5 Radiated Emission Setup Photos:

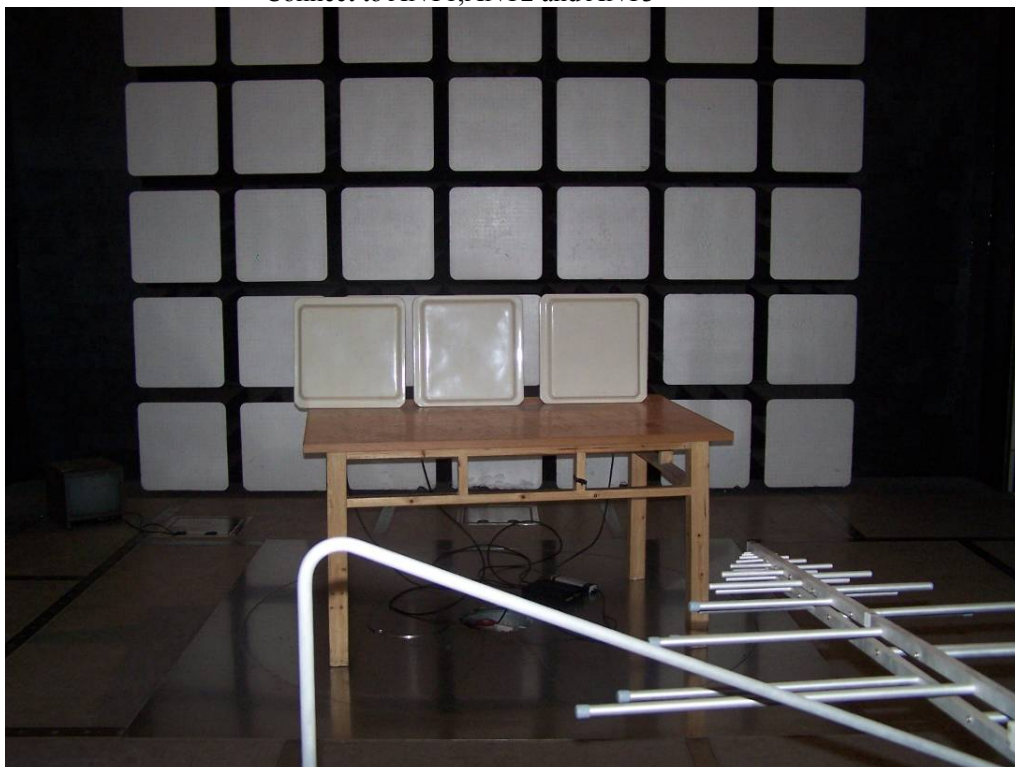
Connect to ANT1



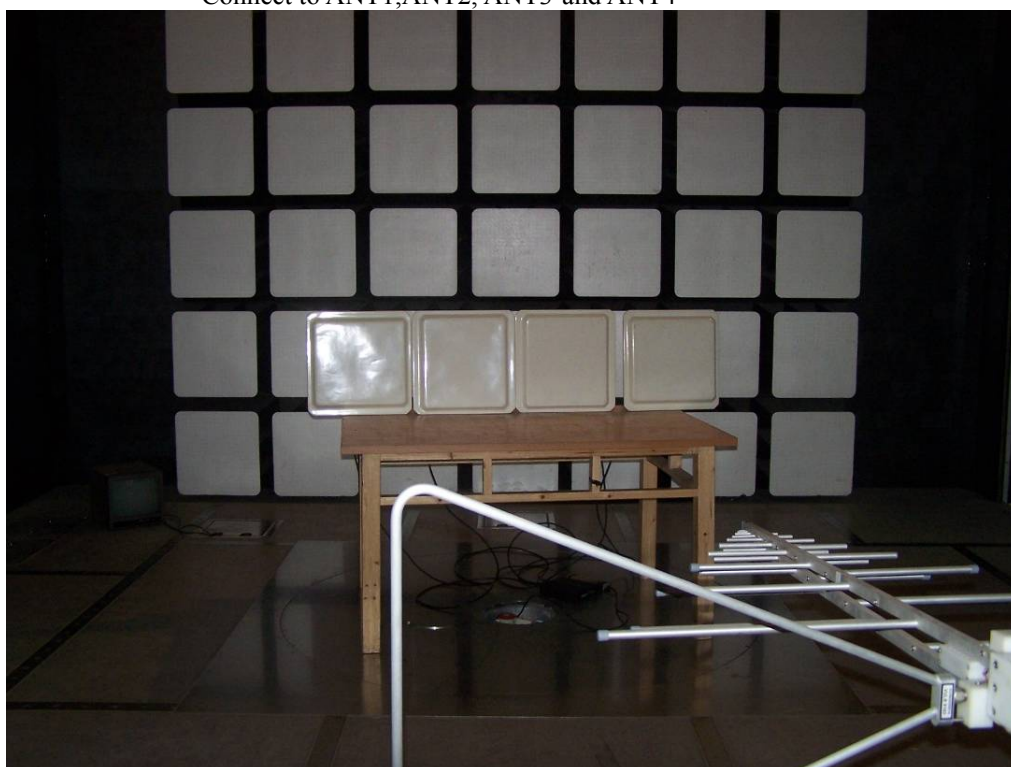
Connect to ANT1 and ANT2



Connect to ANT1,ANT2 and ANT3



Connect to ANT1,ANT2, ANT3 and ANT4

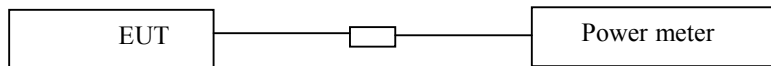


7. MAXIMUM PEAK OUTPUT POWER TEST

7.1 Measurement Procedure

- The Transmitter output (antenna port) was connected to the power meter.
- Turn on the EUT and power meter and then record the peak power value.
- Repeat above procedures on all antenna needed to be tested.

7.2 Test SET-UP (Block Diagram of Configuration)



7.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Power meter	Boonton	4232A	29001	05/29/2007	05/29/2008
Power sensor	Boonton	51011-EMC	31184	05/29/2007	05/29/2008

7.4 Peak Power output limit

The maximum peak power shall be less 1Watt.

7.5 Measurement Results:

Refer to attached data chart.

Spectrum Detector:	PK	Test Date :	Nov.07,2007
Test By:	Cheris	Temperature :	28℃
Test Result:	PASS	Humidity :	65 %

ANT number	ANT Frequency (MHZ)	Peak Power output(mW)	Peak Power Limit(mW)	Pass/Fail
ANT1	915.08	0.39	1	PASS
ANT1 and ANT2	915.08	0.34	1	PASS
ANT1,ANT2 and ANT3	915.08	0.35	1	PASS
ANT1,ANT2, ANT3 and ANT4	915.08	0.36	1	PASS

8. OCCUPIED BANDWIDTH

8.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set SPA Center Frequency = fundamental frequency, RBW=100KHz, VBW= 300KHz
4. Set SPA Max hold. Mark peak.

8.2 Test SET-UP (Block Diagram of Configuration)

Same as 6.2 Radiated Emission Measurement.

8.3 Measurement Equipment Used:

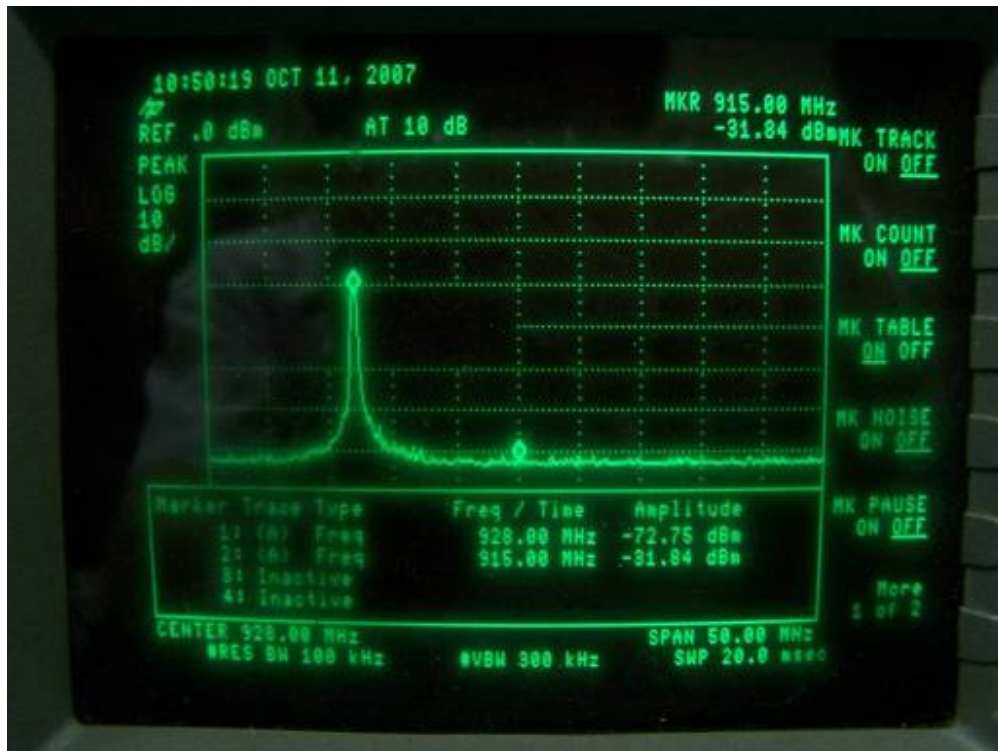
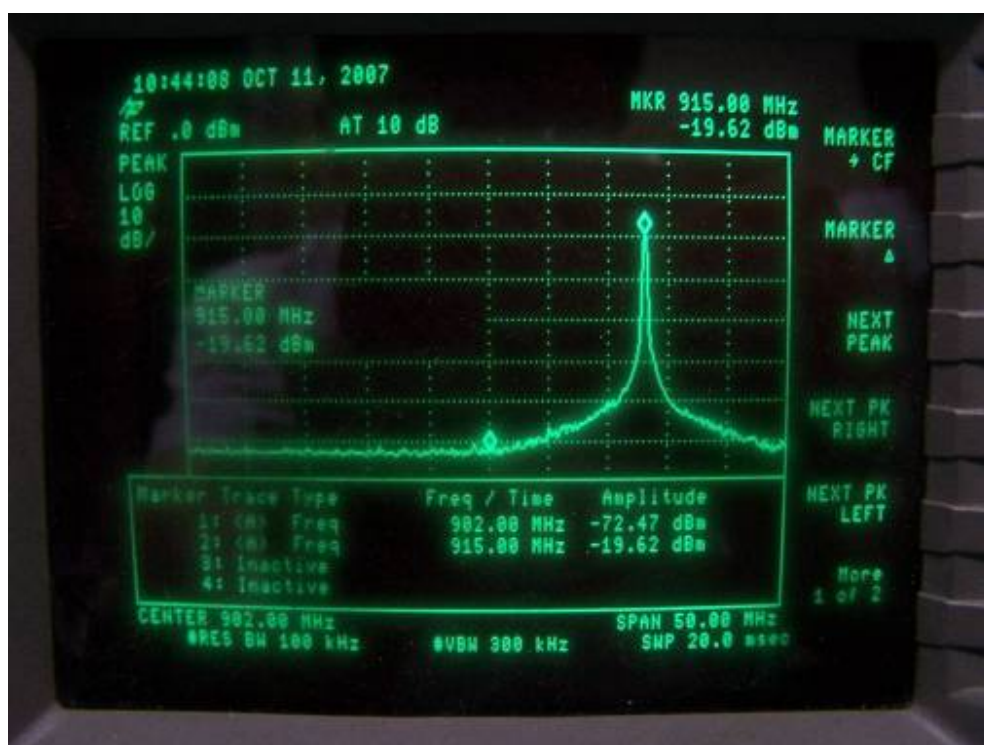
Same as 6.2 Radiated Emission Measurement.

8.4 Measurement Results:

The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209.

Refer to attached data chart.

Band Width Test Data



9. ANTENNA APPLICATION

The EUT'S antenna is met the requirement of FCC part 15C section 15.203

APPENDIX 1

PHOTOGRAPHS OF EUT

