APPLICATION FOR CERTIFICATION On Behalf of

Shenzhen DDCT Technology Co., Ltd

DRF8804A RFID Reader

Model Number: DRF 8804A

Prepared for: Shenzhen DDCT Technology Co., Ltd

2#, Kefeng Road, Science Park, Nanshan, Shenzhen,

Guangdong, P.R.C

Prepared By: Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block,

Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number : ACS-F07022

Date of Test : Jan.14 ~ Feb.07, 2007

Date of Report : Jan. 26, 2007

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TEST REPORT DECLARATION

DRF8804A RFID Reader

(A) MODEL NO.

(B) SERIAL NO.

FCC Rules and Regulations Part 15 Subpart C 2006

technically compliant with the FCC requirements.

Shenzhen DDCT Technology Co., Ltd

Shenzhen DDCT Technology Co., Ltd

: DRF 8804A

(C) POWER SUPPLY: DC 5V Adaptor Input AC 120V/60Hz

: N/A

Applicant

Manufacturer

EUT Description

Test Procedure Used:

conducted emissions.

Date of Test:

Prepared by :	YoYo Wang / Assistant
Reviewer :	Sean Xing / Assistant Manager
	Audix Technology (Shenzhen) Co., Ltd. EMC 部門報告專用章 Stamp only for EMC Dept. Report
Approved & Authorized Signo	er: Signature: Ken Lu / Deputy Manager
Name of the Representative of	f the Responsible Party :
Signature:	STORE STORES

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Jan. 14 ~ Feb. 07, 2007

This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both radiated and

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN)

these tests. Also, this report shows that the Equipment Under Test (EUT) is to be

CO., LTD. is assumed full responsibility for the accuracy and completeness of

1. SUMMARY OF STANDARDS AND RESULTS

1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION					
Description of Test Item	Standard	Results			
Conducted Emission Test	FCC Part 15: 15.207	PASS			
Radiated Emission Test	FCC Part 15: 15.209 ANSI C63.4: 2003	PASS			
Carrier Frequency Separation Test	FCC Part 15: 15.247 ANSI C63.4: 2003	PASS			
20 dB Bandwidth Test	FCC Part 15: 15.247 ANSI C63.4: 2003	PASS			
Number Of Hopping Frequency Test	FCC Part 15: 15.247 ANSI C63.4: 2003	PASS			
Dwell Time Test	FCC Part 15: 15.247 ANSI C63.4: 2003	PASS			
Maximum Peak Output Power Test	FCC Part 15: 15.247 ANSI C63.4: 2003	PASS			
Band Edge Compliance Test	FCC Part 15: 15.247 ANSI C63.4: 2003	PASS			

Note 1: This EUT have four antenna connector, but the four antenna connector don't working simultaneously. So, we choose the one antenna connector which output power is maximum for test.

Note 2: This EUT's antenna need professionally installed.

2. GENERAL INFORMATION

2.1.Description of Device (EUT)

Description : DRF8804A RFID Reader

Model Number : DRF 8804A

Applicant : Shenzhen DDCT Technology Co., Ltd

2#, Kefeng Road, Science Park, Nanshan, Shenzhen

Guangdong, P.R.C

Manufacturer : Shenzhen DDCT Technology Co., Ltd

2#, Kefeng Road, Science Park, Nanshan, Shenzhen

Guangdong, P.R.C

Power Adaptor : Manufacturer: JQA, M/N: GFP241DA-0540

Cable: Unshielded, Detachable, 1.8m

Date of Test : Jan.14 ~ Feb.07, 2007

2.2. Technical Description

Working frequency: 902.5MHz-----927MHz ISM Band

Modulation Technical: FHSS

Hopping Frequency:

СН	Frequency (MHz)	СН	Frequency (MHz)	СН	Frequency (MHz)
1	902.5	2	903	3	903.5
4	904	5	904.5	6	905
7	905.5	8	906	9	906.5
10	907	11	907.5	12	908
13	908.5	14	909	15	909.5
16	910	17	910.5	18	911
19	911.5	20	912	21	912.5
22	913	23	913.5	24	914
25	914.5	26	915	27	915.5
28	916	29	916.5	30	917
31	917.5	32	918	33	918.5
34	919	35	919.5	36	920
37	920.5	38	921	39	921.5
40	922	41	922.5	42	923
43	923.5	44	924	45	924.5
46	925	47	925.5	48	926
49	926.5	50	927		

Modulation: ASK

Output power: 21.632dBm (measured)

Antenna gain: 12dBi

This EUT have four antenna connector, but the four antenna connector don't working simultaneously. So, we choose the one antenna connector which output power is maximum for test.

For more information about this device please see the User Manual.

2.3. Tested Supporting System Details

2.3.1.PERSONAL COMPUTER 1# (for Radiation test)

EMC CODE : Test PC G

M/N : AG017PA#AB2 S/N : CN5470G18

Manufacturer : HP

Power cord : Unshielded, detachabled, 1.8m

FCC ID : By DoC BSMI ID : R33001

2.3.2.PERSONAL COMPUTER 2# (for other test)

EMC CODE : Test PC E

M/N : HP Pavilion W1000

S/N : THT504101L

Manufacturer : HP

Power Cord : Unshielded, Detachabled, 1.8m

FCC ID : By DoC BSMI ID : R31001

2.3.3.KEYBOARD

EMC CODE : ACS-EMC-K09R

M/N : 5209

S/N : BN44300510

Manufacturer : HP

Data Cable : Shielded, Undetachabled, 1.8m

FCC ID : E5XKB5209

BSMI ID : R31213

2.3.4.MOUSE

EMC CODE : ACS-EMC-M05R

M/N : 5187-2155 S/N : K043240960

Manufacturer : HP

Data Cable : Shielded, Undetachabled, 1.8m

FCC ID : By DoC BSMI ID : R31258

2.3.5.MONITOR

EMC CODE : Test Monitor C

M/N : E772F

S/N : CN-02W486-64180-3CE-00LB

Manufacturer : Dell

Data Cable : Shielded, Undetachabled, 1.8m
Power cord : Unshielded, detachabled, 1.8m

FCC ID : By DoC BSMI ID : N/A

2.4. Test Facility

Site Description

3m Anechoic Chamber : Certificated by FCC, USA

Registration Number: 90454

Aug. 15, 2003

3m & 10m Anechoic Chamber : Certificated by FCC, USA

Registration Number: 794232

Mar. 15, 2004

EMC Lab. : Certificated by DATech, German

Registration Number: DAT-P-091/99-01

Feb. 02, 2004

Certificated by NVLAP, USA NVLAP Code: 200372-0

Apr.01, 2006

Certificated by Nemko, Norway

Aut. No.: ELA135 April. 22, 2004

Certificated by Industry Canada Registration Number: IC 5183

Jul. 28, 2004

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.

Site Location : No. 6, Ke Feng Rd., 52 Block,

Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

2.5. Measurement Uncertainty

No.	Item	Uncertainty	Remark
1.	Uncertainty for Conducted Emission Test	1.22dB	
2.	Uncertainty for Radiated Emission Test	3.14dB	3m Chamber
3.	Uncertainty for Radiated Emission Test	3.18dB	10m Chamber
4.	Uncertainty for Power Clamp Test	1.38dB	

3. POWER LINE CONDUCTED EMISSION TEST

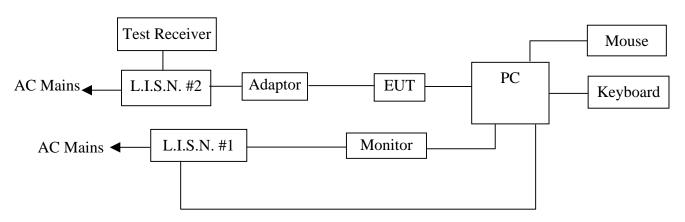
3.1.Test Equipments

The following test equipments are used during the power line conducted emission test:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	May 15, 06	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	May 15, 06	1 Year
3.	L.I.S.N.#2	Kyoritsu	KNW-407	8-1636-1	May 15, 06	1 Year
4.	Terminator	Hubersuhner	50Ω	No. 1	May 15, 06	1 Year
5.	RF Cable	MIYAZAKI	5D-2W	LISN Cable 1#	Aug.16, 06	1/2 Year
6.	Coaxial Switch	Anritsu	MP59B	M55367	Aug.16, 06	1/2 Year
7.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100340	Aug.16, 06	1/2 Year

3.2.Block Diagram of Test Setup

3.2.1.Block diagram of connection between the EUT and simulators



(EUT: DRF8804A RFID Reader)

3.3. Power Line Conducted Emission Test Limits

	Maximum RF Line Voltage			
Frequency	Quasi-Peak Level	Average Level		
	$dB(\mu V)$	$dB(\mu V)$		
150KHz ~ 500KHz	66 ~ 56*	56 ~ 46*		
500KHz ~ 5MHz	56	46		
5MHz ~ 30MHz	60	50		

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1.DRF8804A RFID Reader (EUT)

Model Number : DRF 8804A

Serial Number : N/A

Manufacturer : Shenzhen DDCT Technology Co., Ltd

3.4.2. Support Equipment: As Tested Supporting System Detail, in Section 2.3..

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.5.2. Turn on the power of all equipment.
- 3.5.3.Let the EUT work in test mode (TX) and measure it.

3.6.Test Procedure

The EUT is connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2003 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS10) is set at 10KHz.

The frequency range from 150kHz to 30MHz is checked.

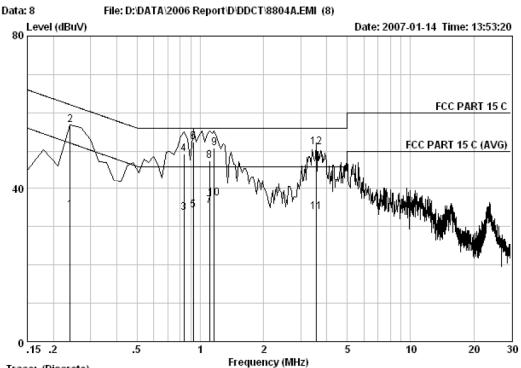
The test result are reported on Section 3.7.,

3.7. Power Line Conducted Emission Test Results

PASS.



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Trace: (Discrete)

: Audix 1# Conduction : -- VA KNW-407 : FCC PART 15 C : Temp:23' Humi:54% : DRF8804A RFID Reader Site no. Data no. : LISN Phase : Dis. / Ant. Limit

Engineer M/N:DRF 8804A Env. / Ins. : Jamy

DC 5V Adaptor Input AC 120V/60Hz

Power Rating : Test Mode :

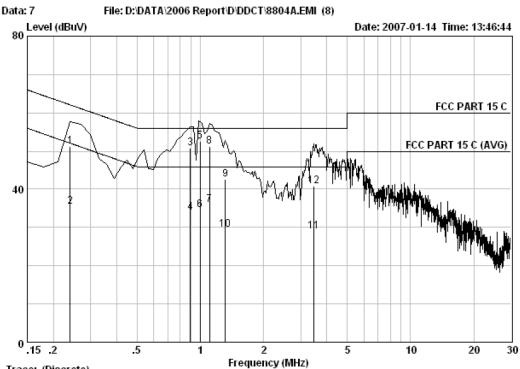
Test Mode Tx Mode

	Freq. (MHz)	LISN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10 11	0.24 0.24 0.84 0.93 0.93 1.11 1.11 1.16 1.16 3.555	0.48 0.48 0.22 0.22 0.21 0.21 0.21 0.21 0.21	10.07 10.07 10.13 10.13 10.12 10.12 10.16 10.16 10.16 10.16 10.18	23.71 46.16 23.40 38.90 24.01 42.01 25.00 37.00 40.40 27.01 23.49 40.69	34.26 56.71 33.75 49.25 34.34 52.34 35.37 47.37 50.77 37.38 33.88 51.08	52.11 62.11 46.00 56.00 46.00 56.00 46.00 56.00 46.00 46.00 56.00	17.85 5.40 12.25 6.75 11.66 3.66 10.63 8.63 5.23 8.62 12.12 4.92	Average QP Average QP Average QP Average QP QP Average Average QP
								*

Emission Level= LISN Factor + Cable Loss + Reading. Remarks: 1. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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Trace: (Discrete)

Env. / Ins.

EUT

Site no. Dis. / Ant. Limit

Data no. : LISN Phase : : Jamy

Engineer M/N:DRF 8804A

Audix 1# Conduction Data
-- VB KNW-407 LISN
FCC PART 15 C
Temp:23' Humi:54% Engir
DRF8804A RFID Reader M/N:DRF 88
DC 5V Adaptor Input AC 120V/60Hz
Tx Mode

Power Rating : Test Mode :

	Freq. (MHz)	LISN. Factor (dB)	(dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1 2 3 4 5 6 7 8 9 10	0.24 0.24 0.90 0.90 1.00 1.11 1.11 1.31 1.31	0.87 0.87 0.37 0.35 0.35 0.34 0.34 0.33	10.07 10.07 10.13 10.13 10.15 10.15 10.16 10.16 10.17 10.17	40.31 24.51 40.30 23.40 41.99 23.99 25.42 40.71 32.00 18.90	51.25 35.45 50.80 33.90 52.49 34.49 35.92 51.21 42.50 29.40 28.98	62.11 52.11 56.00 46.00 56.00 46.00 56.00 56.00 46.00	10.86 16.66 5.20 12.10 3.51 11.51 10.08 4.79 13.50 16.60 17.02	QP Average QP Average QP Average QP QP QP Average Average
12	3.46	0.31	10.17	30.30	40.78	56.00	15.22	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION TEST

4.1.Test Equipment

The following test equipments are used during the radiated emission test:

4.1.1.For Anechoic Chamber

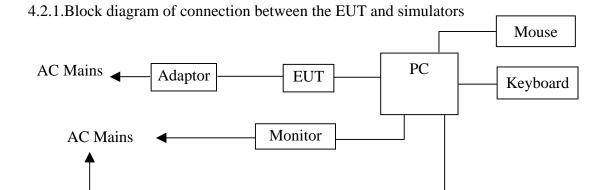
Frequency rang: 30~1000MHz

	1	· · · · · · · · · · · · · · · · · · ·		l		1
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Spectrum	HP	85422E	3625A00181	May 15, 06	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 15, 06	1 Year
3.	Amplifier	HP	8447D	2944A07794	Sep. 12,06	1/2 Year
4.	Bilog Antenna	Schaffner	CBL6111C	2598	Jan. 11, 06	1 Year
5.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Jul. 30, 06	1/2 Year
6.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Jul. 30, 06	1/2 Year
7.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.3	Jul. 30, 06	1/2 Year
8.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Jul. 30, 06	1/2 Year
9.	Coaxial Switch	Anritsu	MP59B	M73989	Jul. 30, 06	1/2 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer		Serial No.	Last Cal.	Cal.
						Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May.15, 06	1 Year
3.	Amplifier	HP	8447D	2944A07794	Mar.13, 06	1/2 Year
4.	Bilog Antenna	Schaffner	CBL6111C	2598	Jan. 11, 06	1 Year
5.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Jul. 28, 06	1/2 Year
6.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Jul. 28, 06	1/2 Year
7.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.3	Jul. 28, 06	1/2 Year
8.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Jul. 28, 06	1/2 Year
9.	Coaxial Switch	Anritsu	MP59B	M73989	Jul. 28, 06	1/2 Year
10.	Spectrum	Agilent	E4407B	MY41440292	May.15, 06	1 Year
11.	Amp	HP	8449B	3008A00863	May.15, 06	1 Year
12.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year

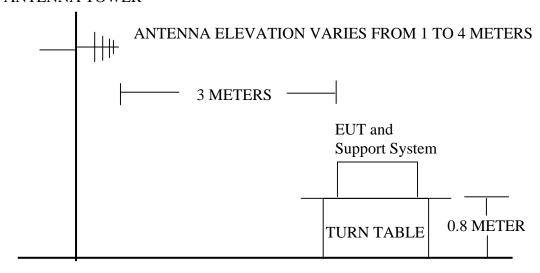
4.2.Block Diagram of Test Setup



(EUT: DRF8804A RFID Reader)

4.2.2.In Anechoic Chamber

ANTENNA TOWER



GROUND PLANE

4.3. Radiated Emission Limit

FREQUENCY	DISTANCE	FIELD STREM	NGTHS LIMIT
MHz	Meters	μV/m	$dB(\mu V)/m$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(µV	/)/m (Peak)
		54.0 dB(µV	V)/m (Average)

Remark : (1) Emission level $dB\mu V = 20 \log$ Emission level $\mu V/m$

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1.DRF8804A RFID Reader (EUT)

Model Number : DRF 8804A

Serial Number : N/A

Manufacturer : Shenzhen DDCT Technology Co., Ltd

4.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.3.

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2..

4.5.2.Let the EUT work in test mode (TX) and test it.

4.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the EMI test receiver (R&S ESVS20) is set at 120KHz.

frequency range from 30MHz to 1000 MHz.

The bandwidth of the VBW is set at 3MHz and RBW is set at 1MHz for measurement below 1GHz.

The frequency range from 30MHz to 1000MHz and above 1GHz are checked.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on Section 4.7.

4.7. Radiated Emission Test Results

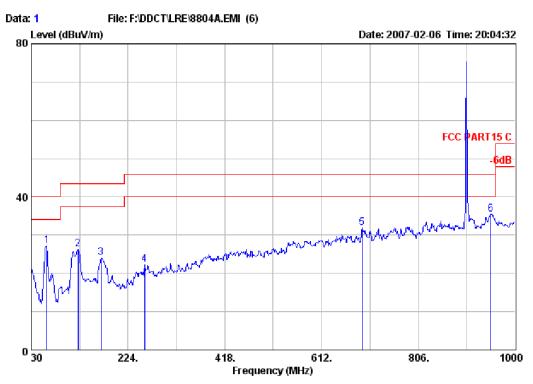
PASS.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.



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Site no. : Audix 3# Chamber Data no. : 1

Dis. / Ant. : 3m 2769FACTOR3M Ant. pol. : HORIZONTAL

Limit : FCC PART15 C

Env. / Ins. : 23*C/54% ESVS20 Engineer : Jamy

EUT : DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V Adaptor Input AC 120V/60Hz

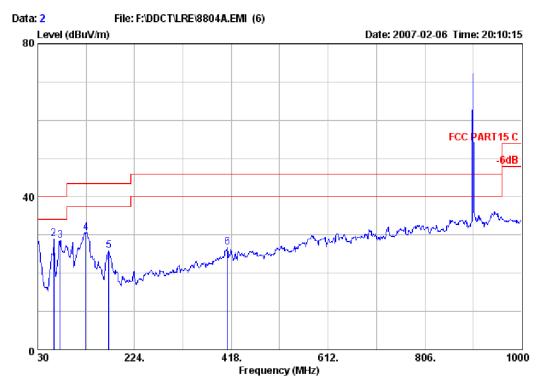
Test Mode : Tx Mode CH1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB V)	Emission Level (dB V/m)	Limits) (dB \	Margin F //m) (dB)	Remark
1	61.04	5.8	1.8	19.7	27.3	40.0	12.7	QP
2	124.09	11.7	2.5	12.2	26.4	43.5	17.1	QP
3	169.68	10.1	3.0	10.9	24.0	43.5	19.5	QP
4	256.98	13.6	3.8	4.8	22.2	46.0	23.8	QP
5	693.48	20.6	6.6	4.7	31.9	46.0	14.1	QP
6	950.53	24.2	8.0	3.3	35.5	46.0	10.5	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no. : Audix 3# Chamber Data no. : 2
Dis. / Ant. : 3m 2769FACTOR3M Ant. pol. : VERTICAL

Limit : FCC PART15 C

Env. / Ins. : 23 *C/54% ESVS20 Engineer : Jamy

EUT : DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V Adaptor Input AC 120V/60Hz

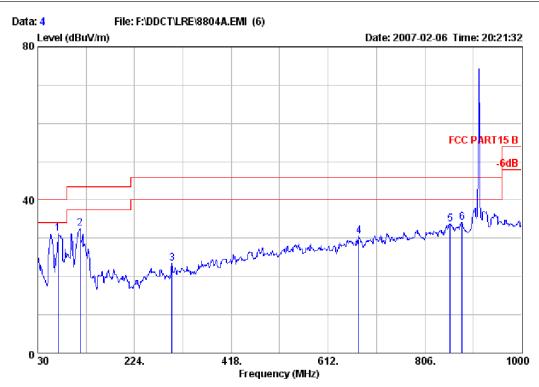
Test Mode : Tx Mode CH1

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB V)	Emission Level (dB V/m	Limits	Margin '/m) (dB)	Remark
1	30.00	19.9	1.2	7.4	28.5	40.0	11.5	QP
2	62.01	5.7	1.8	21.6	29.1	40.0	10.9	QP
3	74.62	7.2	2.0	19.3	28.5	40.0	11.5	QP
4	126.03	11.8	2.5	16.3	30.6	43.5	12.9	QP
5	172.59	9.9	3.0	13.0	25.9	43.5	17.6	QP
6	410.24	16.7	4.9	5.1	26.7	46.0	19.3	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no. : Audix 3# Chamber Data no. : 4

Dis. / Ant. : 3m 2769FACTOR3M Ant. pol. : HORIZONTAL

Limit : FCC PART15 B

Env. / Ins. : 23 *C/54% ESVS20 Engineer : Jamy

EUT : DRF8804% RFID Reader M/N:DRF 8804% Power Rating : DC 5V Adaptor Input &C 120V/60Hz

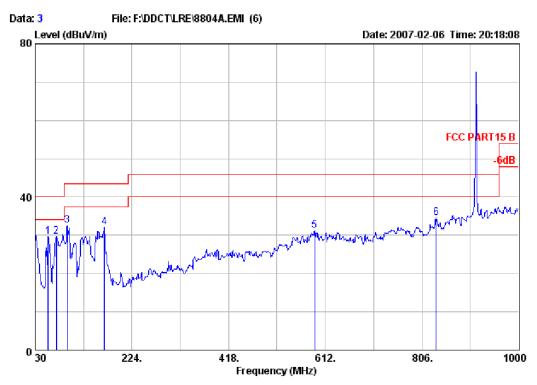
Test Mode : Tx Mode CH25

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB V)	Emission Level (dB V/m)	Limits) (dB V	Margin /m) (dB)	
1	70.74	6.5	1.9	22.8	31.2	40.0	8.8	QP
2	115.36	11.6	2.4	18.5	32.5	43.5	11.0	QP
3	298.69	13.8	4.1	5.6	23.5	46.0	22.5	QP
4	674.08	20.5	6.4	3.6	30.5	46.0	15.5	QP
5	856.44	22.9	7.2	3.6	33.7	46.0	12.3	QP
6	880.69	23.0	7.5	3.6	34.1	46.0	11.9	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no. : Audix 3# Chamber Data no. : 3

Dis. / Ant. : 3m 2769FACTOR3M Ant. pol. : VERTICAL

Limit : FCC PART15 B

Env. / Ins. : 23*C/54% ESVS20 Engineer : Jamy

EUT : DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V Adaptor Input AC 120V/60Hz

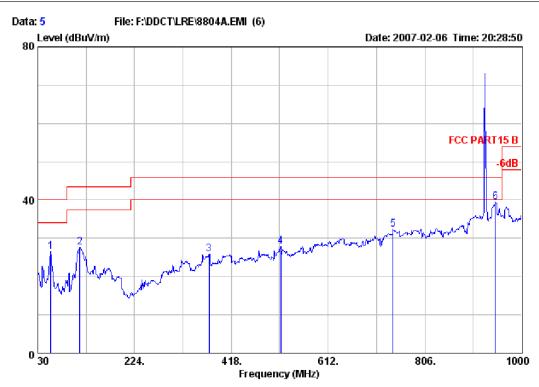
Test Mode : Tx Mode CH25

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB V)	Emission Level (dB V/m	Limits	Margin '/m) (dB)	Remark
1	56.19	6.8	1.7	21.1	29.6	40.0	10.4	QP
2	72.68	6.8	1.9	21.0	29.7	40.0	10.3	QP
3	94.99	9.4	2.2	21.0	32.6	43.5	10.9	QP
4	168.71	10.2	3.0	19.0	32.2	43.5	11.3	QP
5	590.66	19.6	5.9	5.8	31.3	46.0	14.7	QP
6	834.13	22.3	7.2	5.1	34.6	46.0	11.4	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no. : Audix 3# Chamber Data no. : 5

Dis. / Ant. : 3m 2769FACTOR3M Ant. pol. : HORIZONTAL

Limit : FCC PART15 B

Env. / Ins. : 23 *C/54% ESVS20 Engineer : Jamy

EUT : DRF8804% RFID Reader M/N:DRF 8804% Power Rating : DC 5V Adaptor Input AC 120V/60Hz

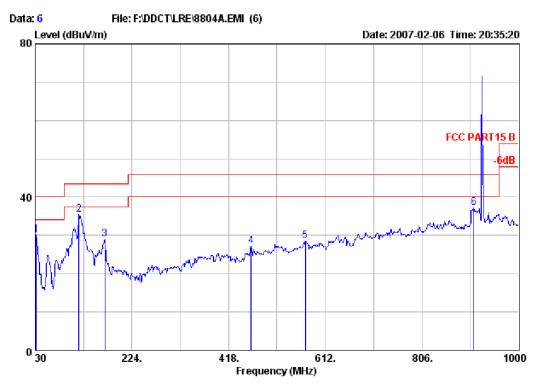
Test Mode : Tx Mode CH50

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB V)	Emission Level (dB V/m	Limits	Margin //m) (dB)	
1	56.19	6.8	1.7	18.0	26.5	40.0	13.5	QP
2	114.39	11.5	2.4	13.8	27.7	43.5	15.8	QP
3	373.38	15.7	4.6	5.5	25.8	46.0	20.2	QP
4	516.94	18.2	5.6	4.1	27.9	46.0	18.1	QP
5	741.98	21.6	6.9	3.8	32.3	46.0	13.7	QP
6	947.62	24.2	7.9	7.3	39.4	46.0	6.6	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no. : Audix 3# Chamber Data no. : 6
Dis. / Ant. : 3m 2769FACTOR3M Ant. pol. : VERTICAL

Limit : FCC PART15 B

Env. / Ins. : 23*C/54% ESVS20 Engineer : Jamy

EUT : DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V Adaptor Input AC 120V/60Hz

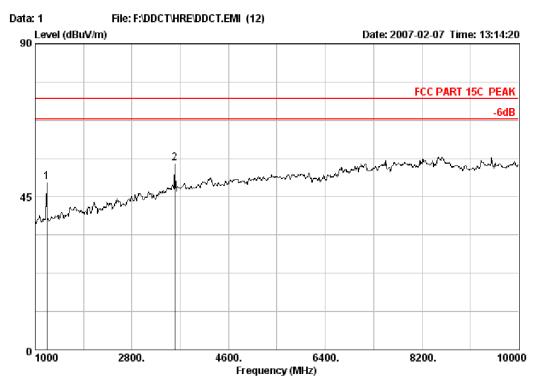
Test Mode : Tx Mode CH50

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dB V)	Emission Level (dB V/m	Limits	Margin //m) (dB)	Remark
1	31.94	18.7	1.1	10.2	30.0	40.0	10.0	QP
2	117.30	11.6	2.4	21.5	35.5	43.5	8.0	QP
3	169.68	10.1	3.0	16.0	29 .1	43.5	14.4	QP
4	463.59	17.4	5.1	4.6	27.1	46.0	18.9	QP
5	572.23	19.6	5.9	3.1	28.6	46.0	17.4	QP
6	909.79	23.0	7.7	6.5	37.2	46.0	8.8	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no. : Audix No.1 Chamber Data no. : 1

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C PEAK Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

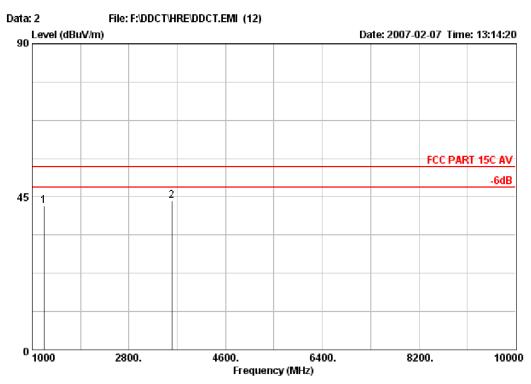
Test Mode : TX Mode CH1

	Freq.	Loss	Reading	Emission Level (dB V/m	Limits	-	
1	1215.30	 3.9	20.7	49.4	74.0	24.6	Peak
2	3600.24	8.2	13.9	54.8	74.0	19.2	Peak

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for measurement above 1GHz.



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Site no. : Audix No.1 Chamber Data no. : 2

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C AV Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

Test Mode : TX Mode CH1

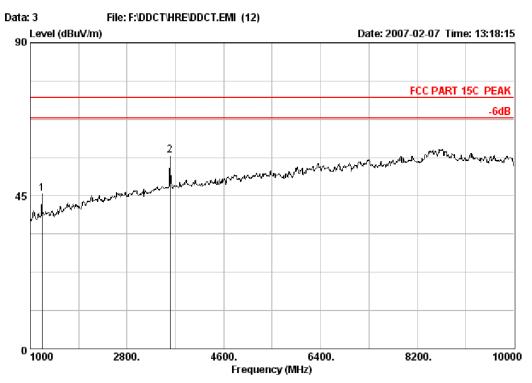
		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m) (dB V	(dB)	
1	1215.22	24.8	3.9	13.7	42.4	54.0	11.6	Average
2	3600.25	32.7	8.2	2.9	43.8	54.0	10.2	Average

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 10Hz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. : 3

Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
FUT Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

Test Mode : TX Mode CH1

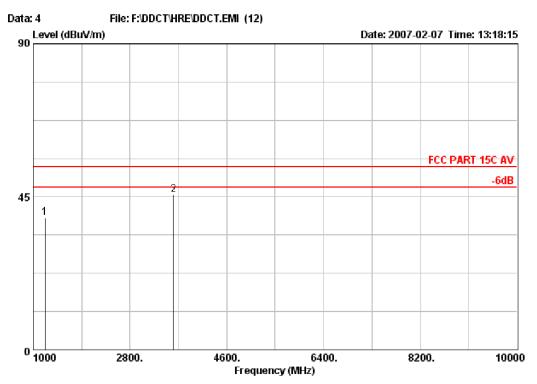
		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m) (dB \	I/m) (dB)	
1	1216.24	24.8	3.9	17.0	45.7	74.0	28.3	Peak
2	3601.50	32.7	8.2	16.1	57.0	74.0	17.0	Peak

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. : 4

Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C AV
Env. / Ins. : 23*C/54% Engineer
EUT : DRF8804A RFID Reader M/N:DRF 8804A Engineer : Jamy

Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

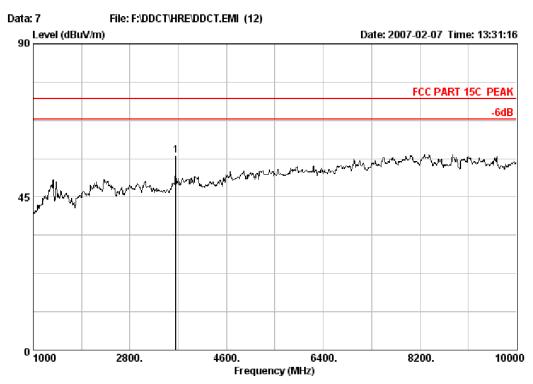
Test Mode : TX Mode CH1

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m) (dB	V/m) = (dB)	
1	1216.20	24.8	3.9	10.1	38.8	54.0	15.2	Average
2	3609.25	32.7	8.2	4.7	45.6	54.0	8.4	Average

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 10Hz and RBW is set at 1MHz for measurement above 1GHz.



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Site no. : Audix No.1 Chamber Data no. : 7

Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

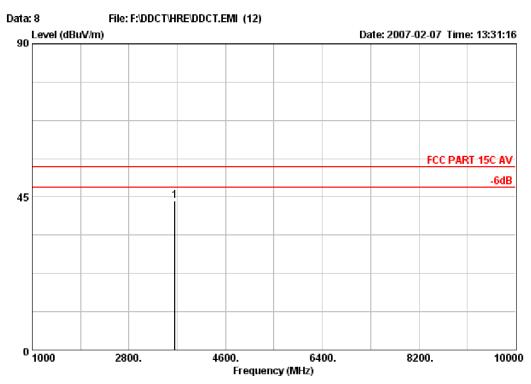
Test Mode : TX Mode CH25

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits Ma	argin Rer	nark
	(MHZ)	(dB/m)	(dB)	(dB V)	(dB V/m)	(dB V/m)	(dB)	
1	3657.98	32.8	8.3	16.1	57.2	74.0	16.8 Pe	 ≥ak

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. :8

Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV Env. / Ins. : 23*C/54%

Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

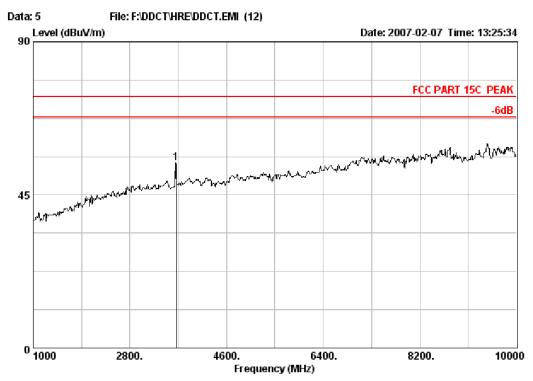
Test Mode : TX Mode CH25

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m)) (dB V	/m) (dB)	
1	3657.81	32.8	8.3	2.8	43.9	54.0	10.1	Average

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 10Hz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. : 5

Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C PEAK Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

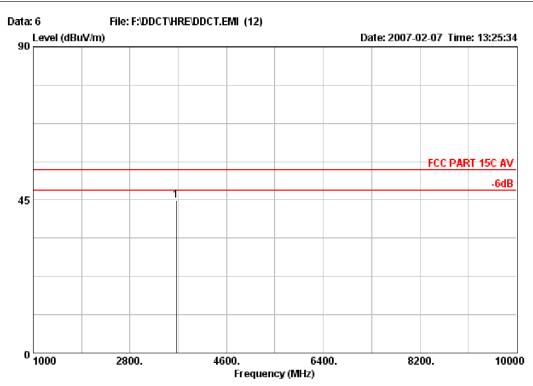
Test Mode : TX Mode CH25

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m)	(dB V/	/m) (dB)	
1	3658.81	32.8	8.3	13.2	54.3	74.0	19.7	Peak

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. : 6

Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C AV Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

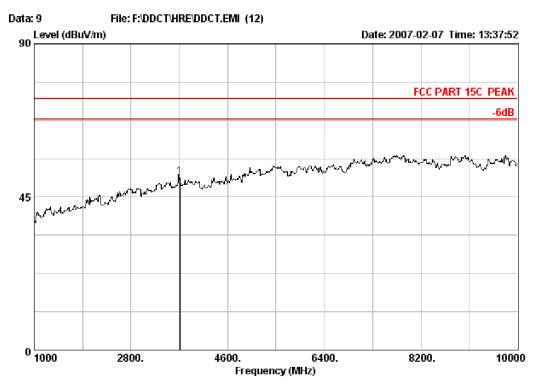
Test Mode : TX Mode CH25

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m)) (dB V,	/m) (dB)	
1	3658.90	32.8	8.3	3.8	44.9	54.0	9.1	Average

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 10Hz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. : 9

Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

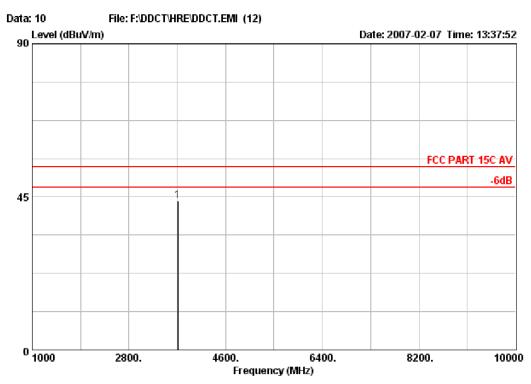
Test Mode : TX Mode CH50

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHZ)	(dB/m)	(dB)	(dB V)	(dB V/m)	(dB V	/m) (dB)	
1	3707.96	33.0	8.3	9.7	51.0	74.0	23.0	Peak

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for measurement above 1GHz.



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Site no. : Audix No.1 Chamber Data no. : 10

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C AV Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

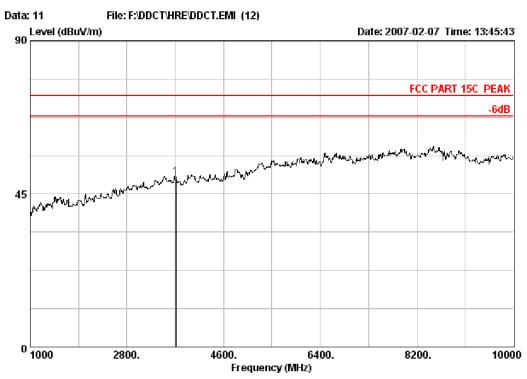
Test Mode : TX Mode CH50

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHZ)	(dB/m)	(dB)	(dB V)	(dB V/m)) (dB V	7/m) (dB)	
1	3708.10	33.0	8.3	2.7	44.0	54.0	10.0	Average

- 2. Emission Level = Antenna Factor + Reading +Cable Loss
- 3. The bandwidth of the VBW is set at 10Hz and RBW is set at 1MHz for measurement above 1GHz.



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: Audix No.1 Chamber Data no. : 11 Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115 FACTOR

Limit : FCC PART 15C PEAK Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

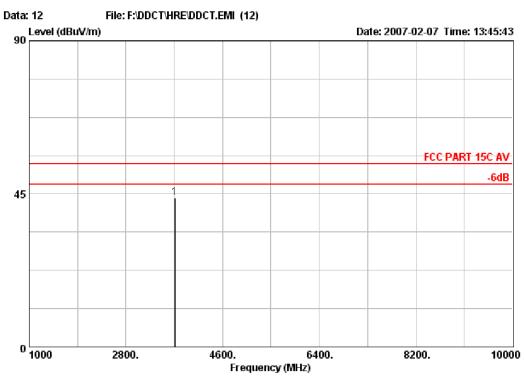
Test Mode : TX Mode CH50

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m)	(dB V/	'm) (dB)	
1	3707.89	33.0	8.3	8.7	50.0	74.0	24.0	Peak

- 2. Emission Level = Antenna Factor + Reading + Cable Loss
- 3. The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for measurement above 1GHz.



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Site no. : Audix No.1 Chamber Data no. : 12 Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL

Limit : FCC PART 15C AV Env. / Ins. : 23*C/54% Engineer : Jamy

: DRF8804A RFID Reader M/N:DRF 8804A Power Rating : DC 5V From Adaptor Input AC 120V/60Hz

Test Mode : TX Mode CH50

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB V)	(dB V/m) (dB V	/m) (dB)	
1	3708.10	33.0	8.3	2.7	44.0	54.0	10.0	Average

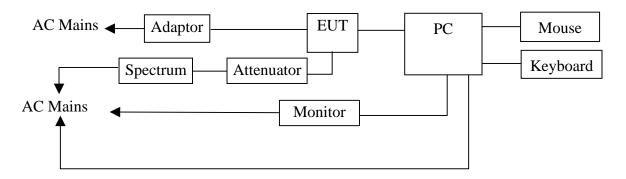
- 2. Emission Level = Antenna Factor + Reading +Cable Loss
- 3. The bandwidth of the VBW is set at 10Hz and RBW is set at 1MHz for measurement above 1GHz.

5. CARRIER FREQUENCY SEPARATION TEST

5.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	Feb.17, 06	1 Year

5.2.Block Diagram of Test Setup



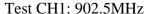
(EUT: DRF8804A RFID Reader)

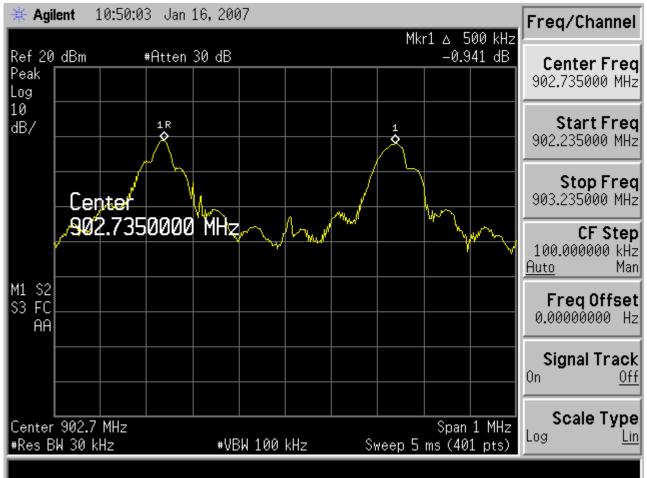
5.3.Test Information

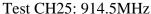
EUT:	DRF8804A RFID Reader
M/N:	DRF 8804A
Test Date:	Jan.16, 2007
Ambient Temperature:	24°C
Relative Humidity:	54%
Test standard:	FCC PART 15C: 15.247& ANSI C63.4: 2003
Test mode:	Transmitting, Hopping on
Test Frequency:	CH1: 902.5MHz CH25: 914.5MHz CH50: 927MHz
Test By:	Jamy

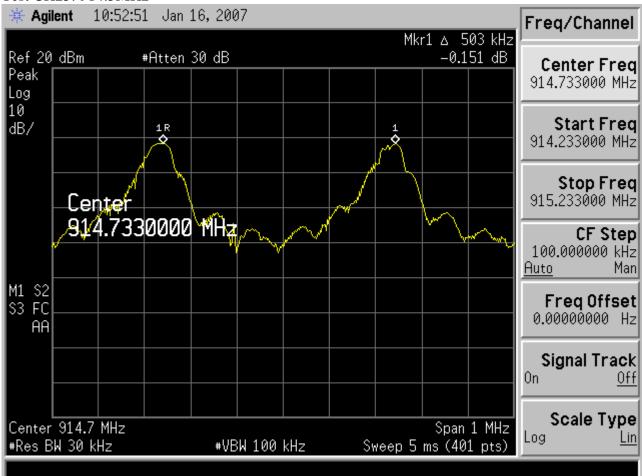
5.4. Test Results

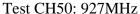
СН	Channel separation (kHz)	Limit	Conclusion
1(Low)	500	>the 20dB Bandwidth or 25kHz	PASS
I(LOW)	300	(whichever is greater)	FASS
25(Mid)	503	>the 20dB Bandwidth or 25kHz	PASS
23(Mia)	303	(whichever is greater)	FASS
50(High)	490	>the 20dB Bandwidth or 25kHz	PASS
50(High)	490	(whichever is greater)	FASS











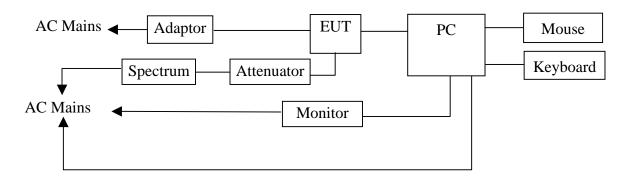


6. 20 DB BANDWIDTH TEST

6.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	Feb.17, 06	1 Year

6.2.Block Diagram of Test Setup



(EUT: DRF8804A RFID Reader)

6.3.Test Information

EUT:	DRF8804A RFID Reader
M/N:	DRF 8804A
Test Date:	Jan.14, 2007
Ambient Temperature:	23℃
Relative Humidity:	50%
Test standard:	FCC PART 15C: 15.247& ANSI C63.4: 2003
Test mode:	Transmitting, Hopping off
Test Frequency:	CH1: 902.5MHz CH25: 914.5MHz CH50: 927MHz
Test By:	Jamy

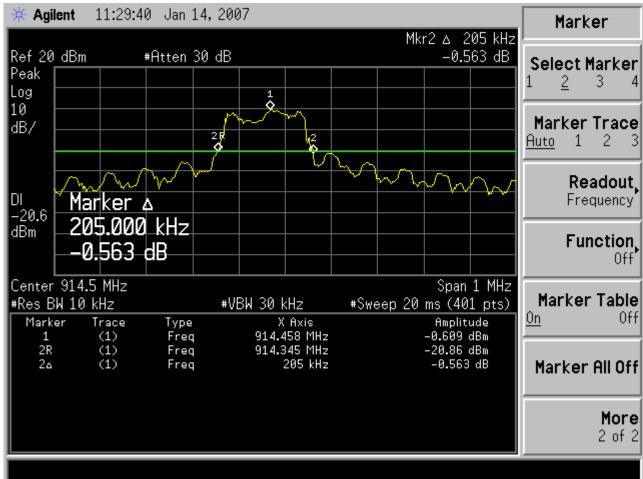
6.4. Test Results

СН	20dB Bandwidth (kHz)	Limit (kHz)	Conclusion
1(Low)	300	500	PASS
25(Mid)	205	500	PASS
50(High)	243	500	PASS

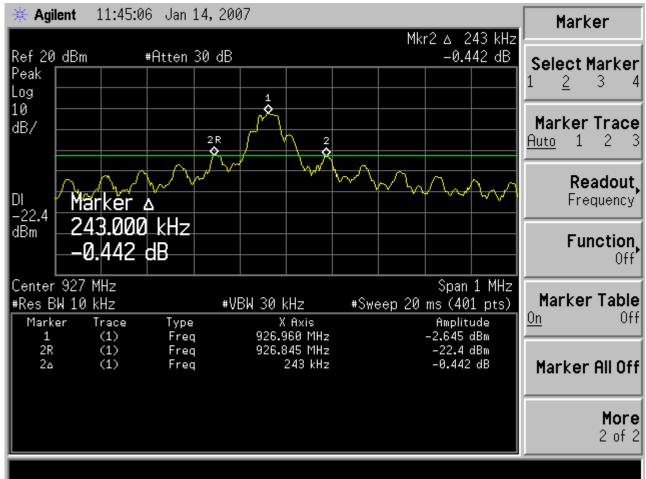
Test CH1: 902.5MHz



Test CH25: 914.5MHz



Test CH50: 927MHz

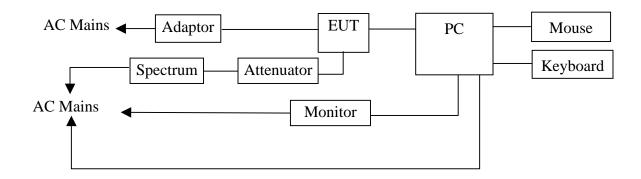


7. NUMBER OF HOPPING FREQUENCY TEST

7.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	Feb.17, 06	1 Year

7.2.Block Diagram of Test Setup



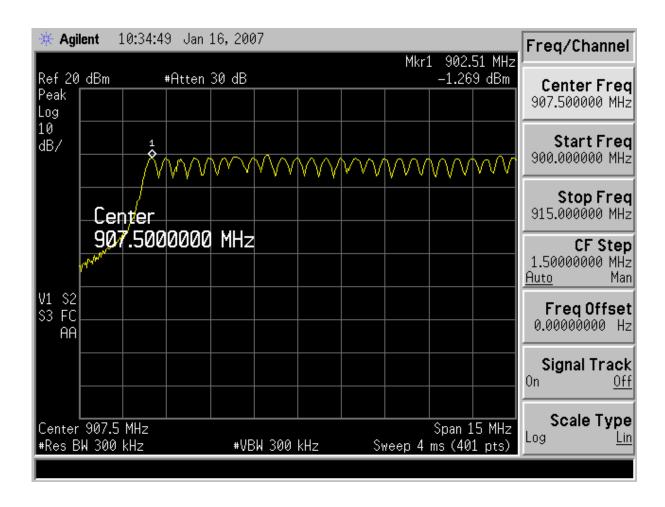
(EUT: DRF8804A RFID Reader)

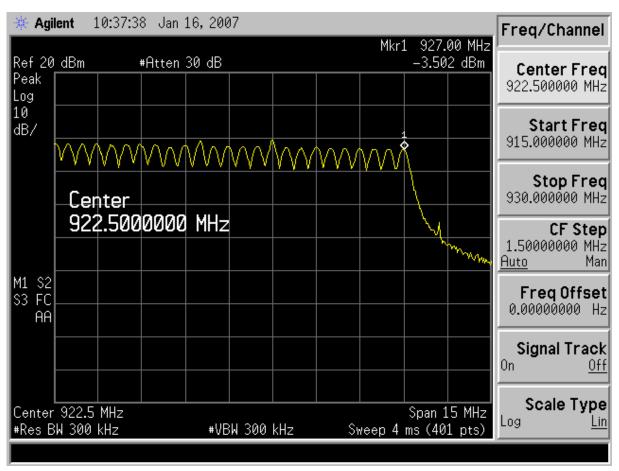
7.3.Test Information

EUT:	DRF8804A RFID Reader
M/N:	DRF 8804A
Test Date:	Jan.16, 2007
Ambient Temperature:	22℃
Relative Humidity:	56%
Test standard:	FCC PART 15C: 15.247& ANSI C63.4: 2003
Test mode:	Transmitting, Hopping on
Test Frequency:	From CH1: 902.5MHz to 927.0MHz
Test By:	Jamy

7.4.Test Results

Number of channel	Limit	Conclusion
50	>=50	PASS



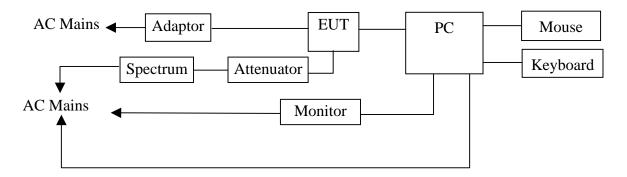


8. DWELL TIME TEST

8.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	Feb.17, 06	1 Year

8.2.Block Diagram of Test Setup



(EUT: DRF8804A RFID Reader)

8.3.Test Information

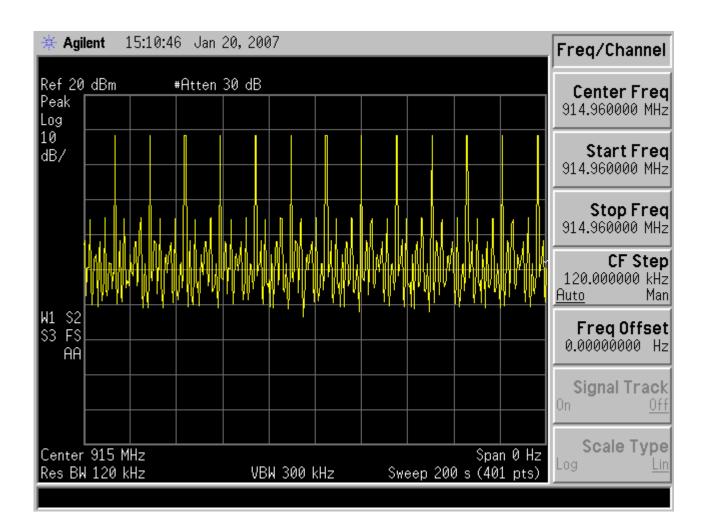
EUT:	DRF8804A RFID Reader
M/N:	DRF 8804A
Test Date:	Jan.20, 2007
Ambient Temperature:	23℃
Relative Humidity:	55%
Test standard:	FCC PART 15C: 15.247& ANSI C63.4: 2003
Test mode:	Transmitting, Hopping on
Test Frequency:	Normal
Test By:	Jamy

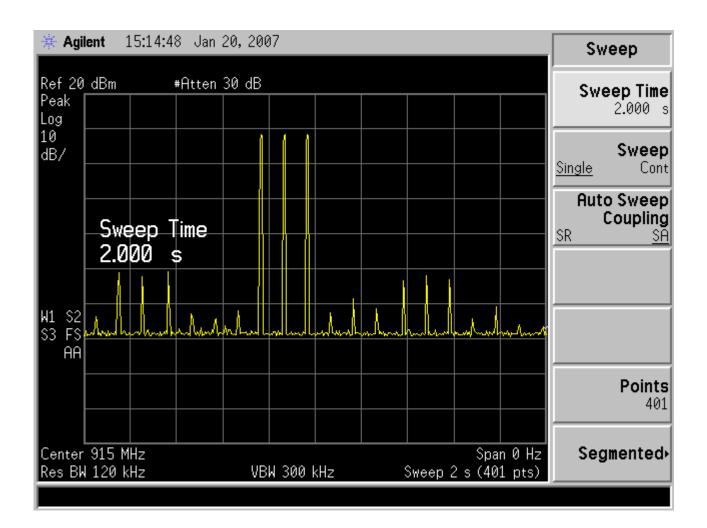
8.4. Test Results

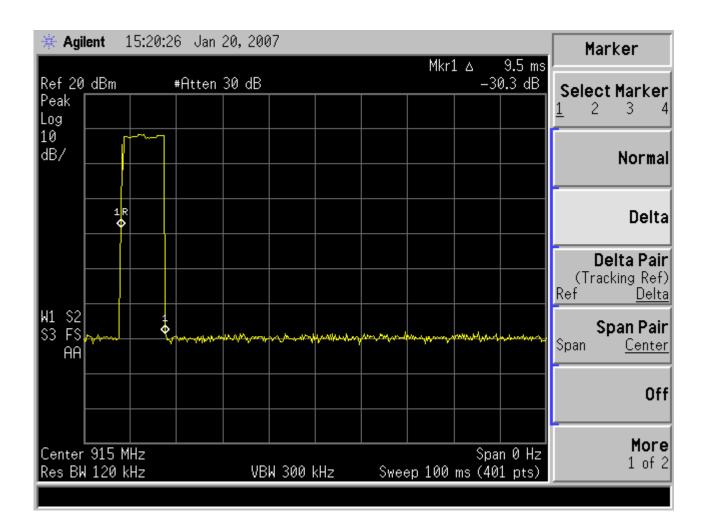
This system hopping 13 hops in any 200s, and for each hop it transmit 3 pulses, each pulse dwell 9.5ms, so the dwell time within a 20s period is:

13/200*20*3*9.5=37.5ms

dewell time within a 20s period	Limit	Conclusion
37.5ms	<400ms	PASS





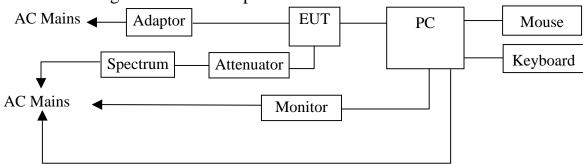


9. MAXIMUM PEAK OUTPUT POWER TEST

9.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	Feb.17, 06	1 Year

9.2.Block Diagram of Test Setup



(EUT: DRF8804A RFID Reader)

9.3.Test Information

EUT:	DRF8804A RFID Reader
M/N:	DRF 8804A
Test Date:	Jan.14, 2007
Ambient Temperature:	24°C
Relative Humidity:	54%
Test standard:	FCC PART 15C: 15.247& ANSI C63.4: 2003
Test mode:	Transmitting, Hopping off
Test Frequency:	CH1: 902.5MHz CH25: 914.5MHz CH50: 927MHz
Test By:	Jamy

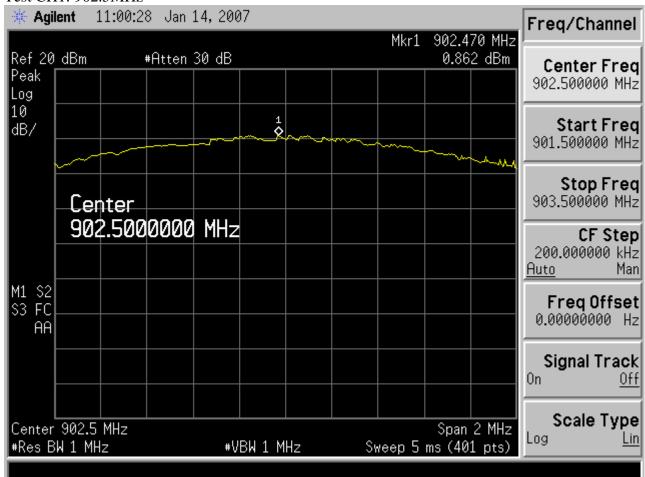
9.4. Test Results

СН	Reading output power (dBm)	Cable loss (dB)	Atten (dB)	Result	Limit (see note) (dBm)	Conclusion
1(Low)	0.862	0.5	20	21.632	24	PASS
25(Mid)	0.481	0.5	20	20.981	24	PASS
50(High)	-1.119	0.6	20	19.481	24	PASS

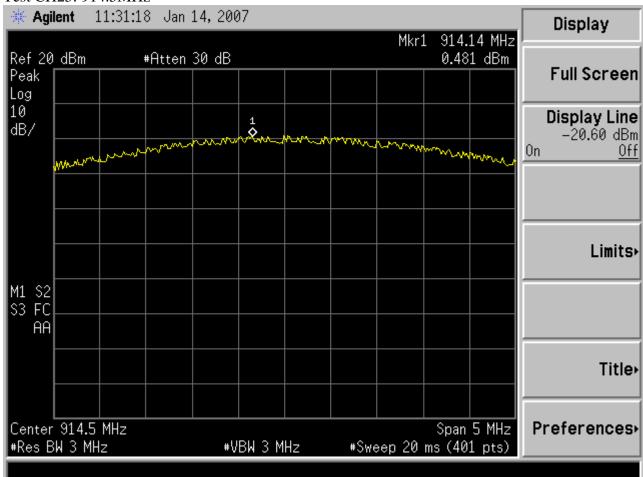
Result= Reading + Cable loss + Atten

Note: Because the antenna gain of this EUT is 12dBi, so according 15.247(b)(4) the output power from the intentional radiator shall be reduced below the stated values by the amount in dB that the directional gain of the antenna exceeds 6 dBi

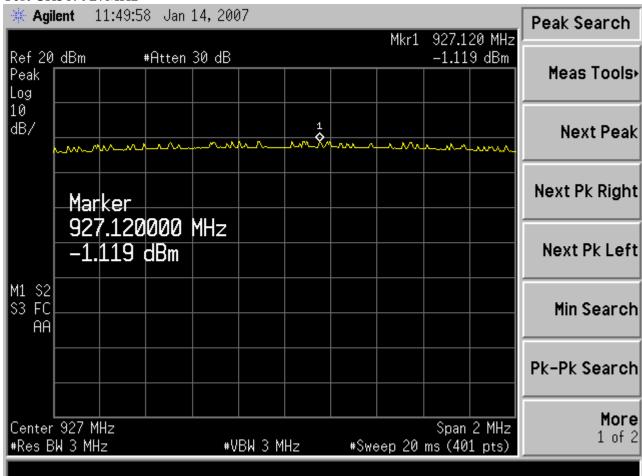
Test CH1: 902.5MHz



Test CH25: 914.5MHz



Test CH50: 927MHz

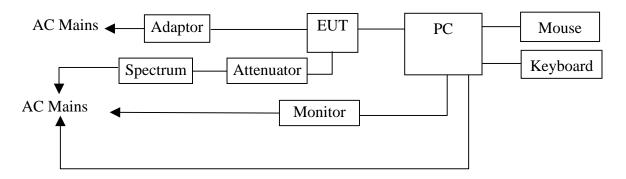


10.BAND EDGE COMPLIANCE TEST

10.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Jun.01, 06	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	Feb.17, 06	1 Year

10.2.Block Diagram of Test Setup



(EUT: DRF8804A RFID Reader)

10.3.Test Information

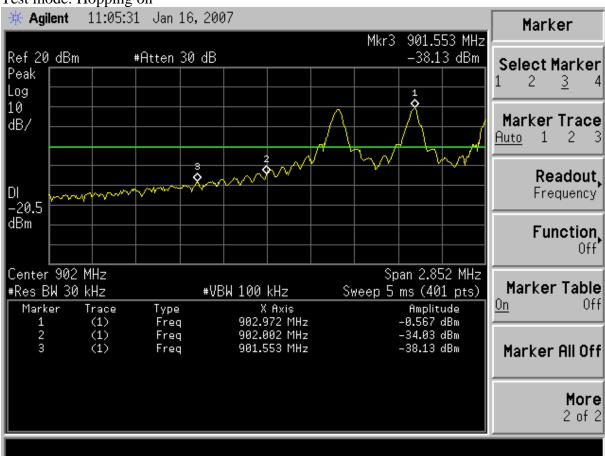
EUT:	DRF8804A RFID Reader
M/N:	DRF 8804A
Test Date:	Jan.14~16, 2007
Ambient Temperature:	24°C
Relative Humidity:	54%
Test standard:	FCC PART 15C: 15.247& ANSI C63.4: 2003
Test mode:	Hopping on, Hopping off
Test Frequency:	CH1: 902.5MHz CH50: 927MHz
Test By:	Jamy

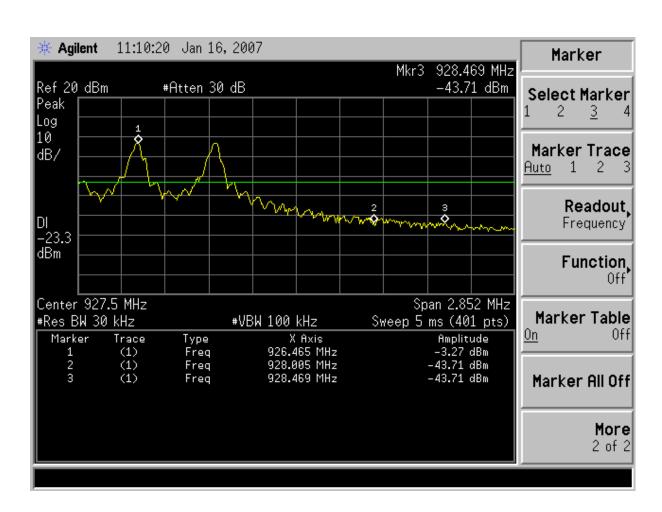
10.4. Test Results

PASS.

The testing data was attached in the next pages.

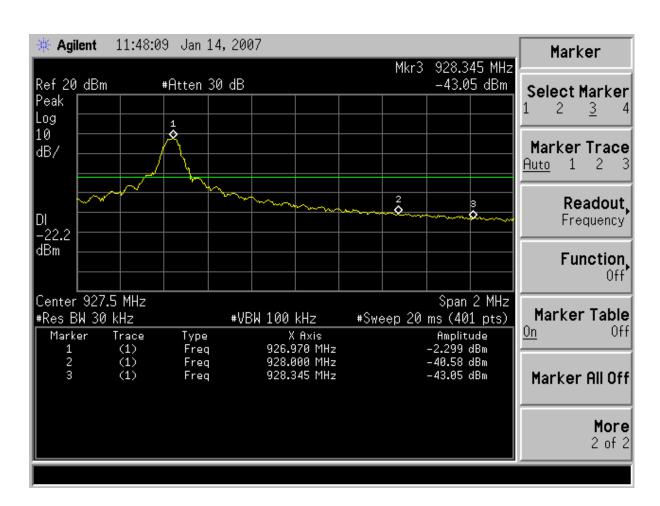






Test mode: Hopping off





11.MPE ESTIMATION

11.1.Limit for General Population/ Uncontrolled Exposures

Frequency	Power density (mW/cm ²)	Averaging time(minutes)	
300MHz1.5GHz	F/1500	30	
1.5GHz100GHz	1.0	30	

Frequency(MHz)	Power density (mW/cm ²)	Averaging time(minutes)
902.5	0.6	30
914.5	0.61	30
927	0.62	30

Note: F= Frequency in MHz

11.2.Estimation Result

Channel	Frequency(MHz)	Peak output power(dBm)	antenna gain(dBi)	antenna gain (Linear)
1	902.5	21.632	12	15.85
25	914.5	20.981	12	15.85
50	927	19.481	12	15.85

Channel	Frequency(MHz)	Peak output power to antenna (mW)	Power density at 20cm(mW/cm ²)
1	902.5	145.6	0.46
25	914.5	125.3	0.40
50	927	88.7	0.28

12.DEVIATION TO TEST SPECIFICATIONS

[NONE]