

FCC CERTIFICATION TEST REPORT

for

SDI TECHNOLOGIES INC.

The Home System for your iPod

Model Number : iH7RC (color of the cabinets are different)

Prepared for : SDI TECHNOLOGIES INC.
Address : 504-6 Harbour center, Tower 2, 8 Hok Cheung St.,
Hung Hom, Kowloon, Hong Kong

Prepared By : NS Electromagnetic Technology Co., Ltd.
Address : Chenwu Industrial Zone, Houjie Town, Dongguan City,
Guangdong, China

Tel : 86-769-85935656
Fax: 86-769-85991080

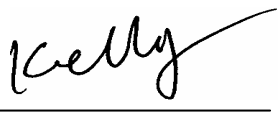
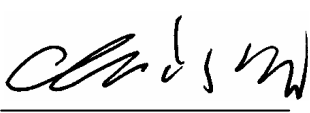

Report Number : NSE-F0605115
Date of Test : May 15, 2006
Date of Report : May 19, 2006

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NS Electromagnetic Technology Co., Ltd.

Applicant:	SDI TECHNOLOGIES INC.		
Address:	504-6 Harbour center, Tower 2, 8 Hok Cheung St., Hung Hom, Kowloon, Hong Kong		
Manufacturer:	DONGGUAN FINEMOST ELECTRONICS CO.,LTD		
Address:	Sheung Kok Industry Dist, Chang An Chen, Dongguan City, Guangdong, China		
E.U.T:	The Home System for your iPod		
Model Number:	iH7RC (color of the cabinets are different)		
Trade Name:	iHome	Serial No.:	-----
Date of Receipt:	Apr. 29, 2005	Date of Test:	May 15, 2006
Test Specification:	FCC Part 15: February, 2006 ANSI C63.4:2003		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
		Issue Date: May 19, 2006	
Tested by:	Reviewed by:	Approved by:	
			
Kelly / Engineer	Chris Du / Supervisor	Steven Lee / Manager	
Other Aspects:	None.		
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products, It is not permitted to be duplicated in extracts without written approval of NS Electromagnetic Technology Co., Ltd..			

1. GENERAL PRODUCT INFORMATION

1.1. Product Function

Refer to Technical Construction Form and User Manual.

1.2. Description of Device (EUT)

Description	:	The Home System for your iPod
Model No.	:	iH7RC
System Input Voltage	:	DC 3V

1.3. Difference between Model Numbers

Notes: The products are different only for the cabinets' color. But the components are identical.

1.4.Independent Operation Modes

The basic operation modes are:

1.4.1. TX 433.7MHz

2. TEST SITES

2.1. Test Facilities

EMC Lab : Certificated by TUV Rheinland, Germany.
Date of registration: July 28, 2003

Certificated by FCC, USA
Registration No.: 897109
Date of registration: October 10, 2003

Certificated by VCCI, Japan
Registration No.: R-1798 & C-1926
Date of registration: January 30, 2004

Certificated by CNAL, CHINA
Registration No.: L1744
Date of registration: November 25, 2004

Certificated by Intertek ETL SEMKO
Registration No.: TMP-013
Date of registration: June 11, 2005

Certificated by TUV/PS, Hong Kong
Date of registration: December 1, 2005

Certificated by Industry Canada
Registration No.: 5936
Date of registration: March 24, 2006

Name of Firm : NS Electromagnetic Technology Co., Ltd.

Site Location : Chenwu Industrial Zone, Houjie Town, Dongguan City,
Guangdong, China

2.2. List of Test and Measurement Instruments

2.2.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Test Receiver	Rohde & Schwarz	ESCS30	100199	Jun. 5,05	Jun. 5,06
L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	100071	Jun. 5,05	Jun. 5,06
L.I.S.N.#2(AUX)	Rohde & Schwarz	ESH3-Z5	100317	Jun. 5,05	Jun. 5,06

2.2.2. For radiated emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Test Receiver	Rohde & Schwarz	ESCS30	100340	Jun. 5,05	Jun. 5,06
Spectrum Analyzer	HP	8590L	3412A00251	Jun. 5,05	Jun. 5,06
Amplifier	Agilent	8447D	2944A10488	May 2,06	May 2,07
Bilog Antenna	EMCO	3142B	00022050	May 2,06	May 2,07
Double Ridged Broadband Horn Antenna	Rohde & Schwarz	BBHA9120D	E1S1002	May 15,06	May 15,07
Spectrum Analyzer	Agilent	E4403B	E1S1001	Jan.13,06	Jan.13,07
Amplifier	Agilent	8449B	E1A2002	Jan.27,06	Jan.27,07

2.2.3. For bandwidth test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	HP	8563A	3417A01296	Mar.15,06	Mar.15,07
Bilog Antenna	EMCO	3142B	00022050	May 2,06	May 2,07

2.2.4. For transmission cessation from Time-of-Release test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	HP	8563A	3417A01296	Mar.15,06	Mar.15,07
Bilog Antenna	EMCO	3142B	00022050	May 2,06	May 2,07

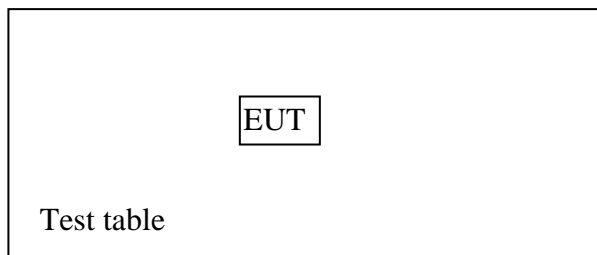
3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections Between EUT and Simulators



(EUT: The Home System for your iPod)

Note: we test lie orientation, side orientation and stand orientation. The lie orientation is the worst mode, so only the worst mode test data was included in the report.

3.3. Test Operation Mode and Test Software

Refer to Test Setup in clause 4 & 5.

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Conducted Emission Test

According to paragraph(f) of FCC Part 15 Section 15.207, measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation, and which do not operate from the AC power lines or contain provision for operation while connected to the AC power.

4.2. Radiated Emission Test

Test Standard:

FCC Part 15:2005, Subpart C (Section:15.205)

FCC Part 15:2005, Subpart C (Section:15.209)

FCC Part 15:2005, Subpart C (Section:15.231(b))

According to 15.231 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency(MHz)	Field Strength of Fundamental		Field Strength of Spurious	
	uV/meter	dBuV/meter	uV/meter	dBuV/meter
40.66 - 40.70	2250	67	225	47
70 - 130	1250	62	125	42
130 - 174	1250 to 3750	62 to 71.5	125 to 375	42 to 51.5
174 - 260	3750	71.5	375	51.5
260 - 470	3750 to 12500	71.5 to 82	375 to 1250	51.5 to 62
Above 470	12500	82	1250	62

Note: (1) Where F is the frequency in MHz,the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174MHz,uV/m at 3 meters = $56.81818(F) - 6136.3636$; for the band 260-470MHz,uV/m at 3 meters = $41.6667(F) - 7083.333$.The maximum permitted unwanted emission level is 20dB below the maximum permitted fundamental level.

(2) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges. Emissions radiated outside of the specified bands,shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength uV/meter	Measurement distance (meters)
0.009-0.490	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000MHz,the field strength limits are based on average detector, however,the peak field strength of any emission shall not exceed the maximum permitted average limits,specified above by more than 20dB under any condition fo modulation.

Frequency Range of Radiated Measurement
(For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes(MHz)	Range(MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5 th harmonic of the highest frequency or 40GHz,whchever is lower

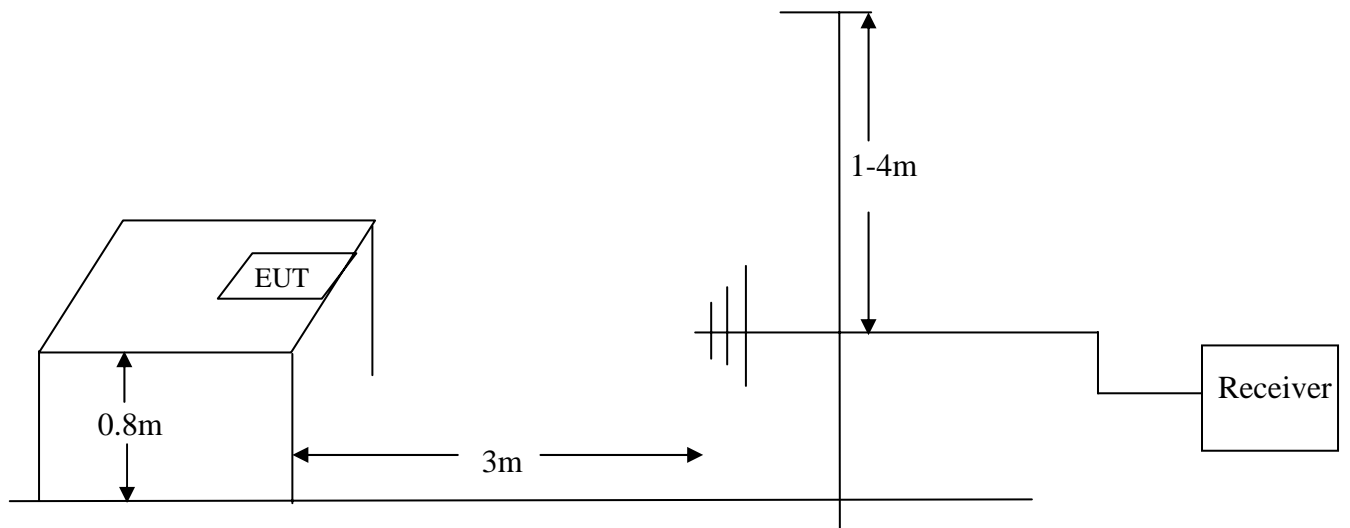
4.2.1 Test Produce

The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. At the frequency of 30 MHz~1000MHz, the measuring antenna moved up and down to find out the maximum emission level. It moved from 1 to 4 m for horizontal and vertical polarizations. The broadband antenna was used as a receiving antenna. At the frequency of 1 GHz -5GHz, the measuring antenna stands 1 m for horizontal and vertical polarizations. The horn antenna was used as a receiving antenna.

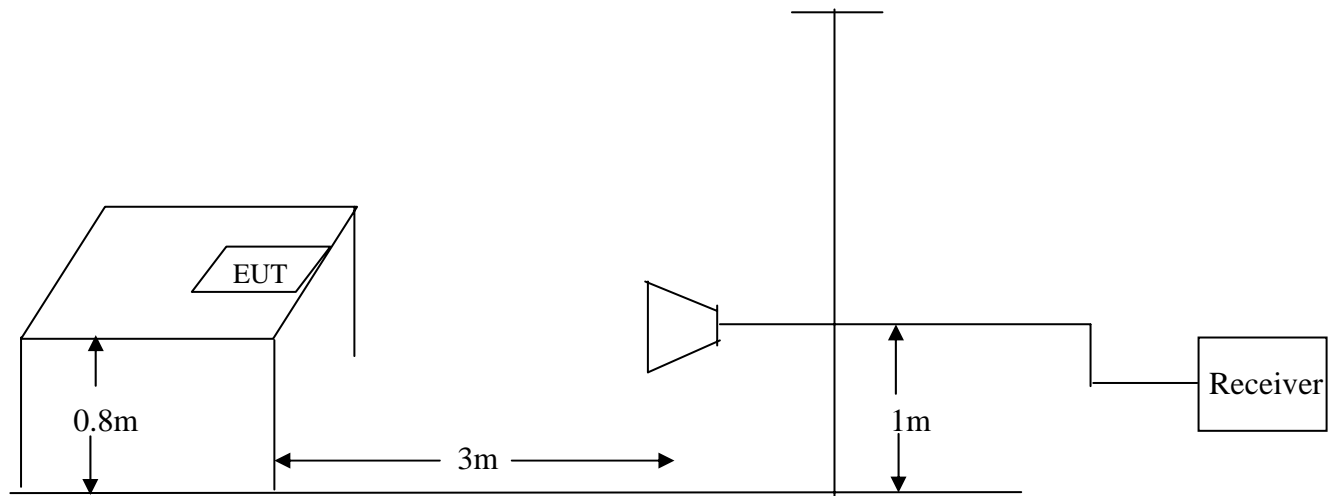
The bandwidth setting on the test receiver was 120 KHz(30 MHz~1000MHz).
The bandwidth setting on the test receiver was 1MHz(1 GHz~5GHz).

4.2.2 Test Setup Diagram

4.2.1.1. Frequency range: 30MHz-1000MHz



4.2.1.2. Frequency range: 1 GHz -5GHz



4.2.3. Test Result

4.2.3.1. Frequency range: 30 MHz -1000MHz

EUT:	The Home System for your iPod	Temperature:	25°C
M/N:	iH7RC	Humidity:	55%
Test Mode:	TX 433.7MHz	Test Engineer:	Kelly

Frequency MHz	Antenna Factor dB	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Over Limits dB	Limits dBμV/m	Detector
30.00	21.06	0.74	1.97	23.77	-16.23	40.00	QP
94.990	11.02	1.44	2.94	15.40	-28.10	43.50	QP
228.850	13.10	2.40	3.10	18.60	-24.90	43.50	QP
308.390	15.06	2.88	5.75	23.69	-19.81	43.50	QP
433.823	16.64	3.55	49.13	69.32	-31.50	100.82	Peak
433.823	16.65	3.55	34.14	54.35	-26.47	80.82	Average
613.940	19.98	4.49	2.41	26.88	-19.12	46.00	QP
730.340	21.26	5.15	5.27	31.68	-14.32	46.00	QP
867.500	22.16	6.13	32.15	60.44	-20.38	80.82	Peak
867.500	22.17	6.14	17.16	45.45	-15.37	60.82	Average

Remark: The worst emission was detected at **730.340MHz** with corrected signal level of **31.68dBμV/m**(Limit is **46.00 dBμV/m**) when the antenna was at **Horizontal** polarization and at **2.2m** high and the turn table was at **0°** .

Frequency MHz	Antenna Factor dB	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Over Limits dB	Limits dBμV/m	Detector
30.000	21.06	0.74	0.80	22.60	-17.40	40.00	QP
153.190	11.26	1.89	2.45	15.60	-27.90	43.50	QP
216.240	12.75	2.31	1.24	16.30	-27.20	43.50	QP
352.040	15.93	3.13	2.07	21.13	-22.37	43.50	QP
433.823	16.64	3.55	36.15	56.34	-44.48	100.82	Peak
433.823	16.64	3.55	21.16	41.35	-39.47	80.82	Average
598.420	19.61	4.45	0.77	24.83	-21.17	46.00	QP
778.840	21.49	5.44	1.67	28.60	-17.40	46.00	QP
867.503	22.17	6.14	27.18	55.49	-25.33	80.82	Peak
867.503	22.17	6.14	12.19	40.50	-20.32	60.82	Average

Remark: The worst emission was detected at **30.00MHz** with corrected signal level of **22.60dBμV/m** (Limit is **40.00 dBμV/m**) when the antenna was at **Vertical** polarization and at **1.3m** high and the turn table was at **0°** .

- Notes:
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading
 2. 0 ° was the table front facing the antenna. Degree was calculated from 0 ° clockwise facing the antenna.
 3. Over Limits = Emission Level – Limits
 4. Test uncertainty: ±4.76dB at a level of confidence of 95%
 5. The average value of fundamental frequency is :
Average = Peak value +20log(Duty cycle)

20log(Duty cycle) = 20log(dwell time/100ms) = 20log[8.2+16*(11.5-10.9)]/100ms = -14.99dB
Please see page 18 for plotted duty

4.2.3.2. Frequency range: 1 GHz -5GHz

EUT:	The Home System for your iPod	Temperature:	25°C
M/N:	iH7RC	Humidity:	55%
Test Mode:	TX 433.7MHz	Test Engineer:	Kelly

Frequency MHz	Meter Reading Horizontal dB μ V	Emission Level Horizontal dB μ V/m	Over Limits dB	Limits dB μ V/m	Detector
1301.250	32.28	53.90	-20.10	74.00	Peak
1735.000	31.40	53.31	-20.69	74.00	Peak
2168.750	30.53	53.60	-20.4	74.00	Peak
2602.500	28.54	54.18	-19.82	74.00	Peak
3036.250	25.67	52.13	-21.87	74.00	Peak
3470.000	22.69	50.30	-23.70	74.00	Peak
3903.750	20.52	48.30	-25.70	74.00	Peak
4337.500	19.93	47.90	-26.10	74.00	Peak
4771.250	16.46	44.60	-29.40	74.00	Peak

Remark: The worst emission was detected at **2602.500MHz** with corrected signal level of **31.40dB μ V/m**(Limit is **74.00 dB μ V/m**) when the antenna was at **Horizontal** polarization and the turn table was at **0°** .

Frequency MHz	Meter Reading Vertical dB μ V	Emission Level Vertical dB μ V/m	Over Limits dB	Limits dB μ V/m	Detector
1301.250	31.78	52.71	-21.29	74.00	Peak
1735.000	30.90	52.65	-21.35	74.00	Peak
2168.750	30.53	52.10	-21.90	74.00	Peak
2602.500	28.04	50.82	-23.18	74.00	Peak
3036.250	27.87	53.64	-20.36	74.00	Peak
3470.000	24.96	52.30	-21.70	74.00	Peak
3903.750	21.32	49.10	-24.90	74.00	Peak
4337.500	18.53	46.50	-27.50	74.00	Peak
4771.250	15.06	43.20	-30.80	74.00	Peak

Remark: The worst emission was detected at **1301.250MHz** with corrected signal level of **52.71dB μ V/m** (Limit is **74 dB μ V/m**) when the antenna was at **Vertical** polarization and the turn table was at **0°** .

EUT:	The Home System for your iPod	Temperature:	25°C
M/N:	iH7RC	Humidity:	55%
Test Mode:	TX 433.7MHz	Test Engineer:	Kelly

Frequency MHz	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Over Limits dB	Limits dBμV/m	Detector
1301.250	17.29	38.91	-15.09	54.00	Average
1735.000	16.41	38.32	-15.68	54.00	Average
2168.750	15.54	38.61	-15.39	54.00	Average
2602.500	13.55	39.19	-14.81	54.00	Average
3036.250	10.68	37.14	-16.86	54.00	Average
3470.000	7.7	35.31	-18.87	54.00	Average
3903.750	5.53	33.31	-20.69	54.00	Average
4337.500	4.94	32.91	-21.09	54.00	Average
4771.250	1.46	29.61	-24.39	54.00	Average

Remark: The worst emission was detected at **2602.500MHz** with corrected signal level of **39.19dBμV/m**(Limit is **54.00 dBμV/m**) when the antenna was at **Horizontal** polarization and the turn table was at **0°** .

Frequency MHz	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Over Limits dB	Limits dBμV/m	Detector
1301.250	16.79	37.72	-16.28	54.00	Average
1735.000	15.91	37.66	-16.34	54.00	Average
2168.750	15.54	37.11	-16.89	54.00	Average
2602.500	13.05	35.83	-18.17	54.00	Average
3036.250	12.88	38.65	-15.35	54.00	Average
3470.000	9.97	37.31	-16.69	54.00	Average
3903.750	6.33	34.11	-19.90	54.00	Average
4337.500	3.54	31.60	-22.40	54.00	Average
4771.250	0.07	28.30	-25.70	54.00	Average

Remark: The worst emission was detected at **3036.250MHz** with corrected signal level of **38.65dBμV/m** (Limit is **54.00 dBμV/m**) when the antenna was at **Vertical** polarization and the turn table was at **0°** .

- Notes:
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading
 2. 0° was the table front facing the antenna. Degree was calculated from 0° clockwise facing the antenna.
 3. Over Limits = Emission Level – Limits
 4. Test uncertainty: $\pm 4.76\text{dB}$ at a level of confidence of 95%
 5. The average value of fundamental frequency is :

$$\text{Average} = \text{Peak value} + 20\log(\text{Duty cycle})$$

$$20\log(\text{Duty cycle}) = 20\log(\text{dwell time}/100\text{ms}) = 20\log[8.2 + 16 \cdot (11.5 - 10.9)]/100\text{ms} = -14.99\text{dB}$$

Please see page 18 for plotted duty

4.3. Bandwidth Test (20dB Occupied Bandwidth Measurement)

4.3.1 Limits of Band:

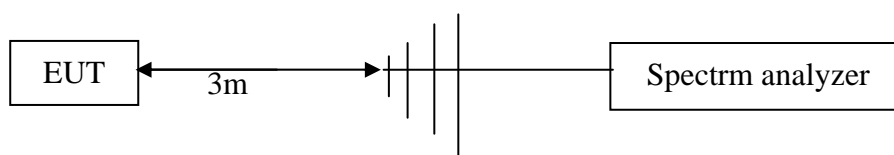
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for device operating above 70MHz and below 900MHz.

4.3.2 Teat Procedure:

The EUT was placed on a turn table was 0.8meter above ground.

The signal was coupled to the speeturm analyzer through an antenna.

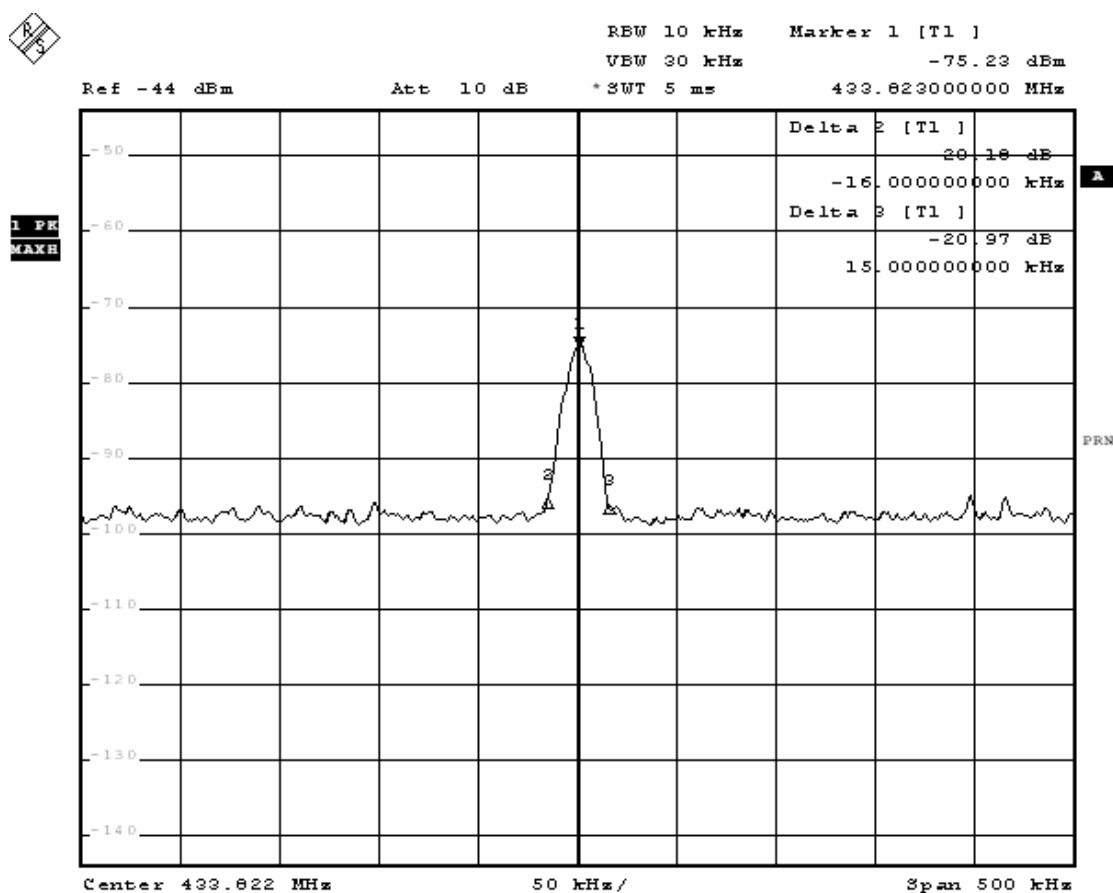
4.3.3 Test Set-up:



4.3.4 Test Result:

Frequency (MHz)	20dB bandwidth (KHz)	Maximum Limit (KHz)	Pass/Fail
433.823	16.000	1084.684	Pass

4.3.5 The plot of test result is attached as below:



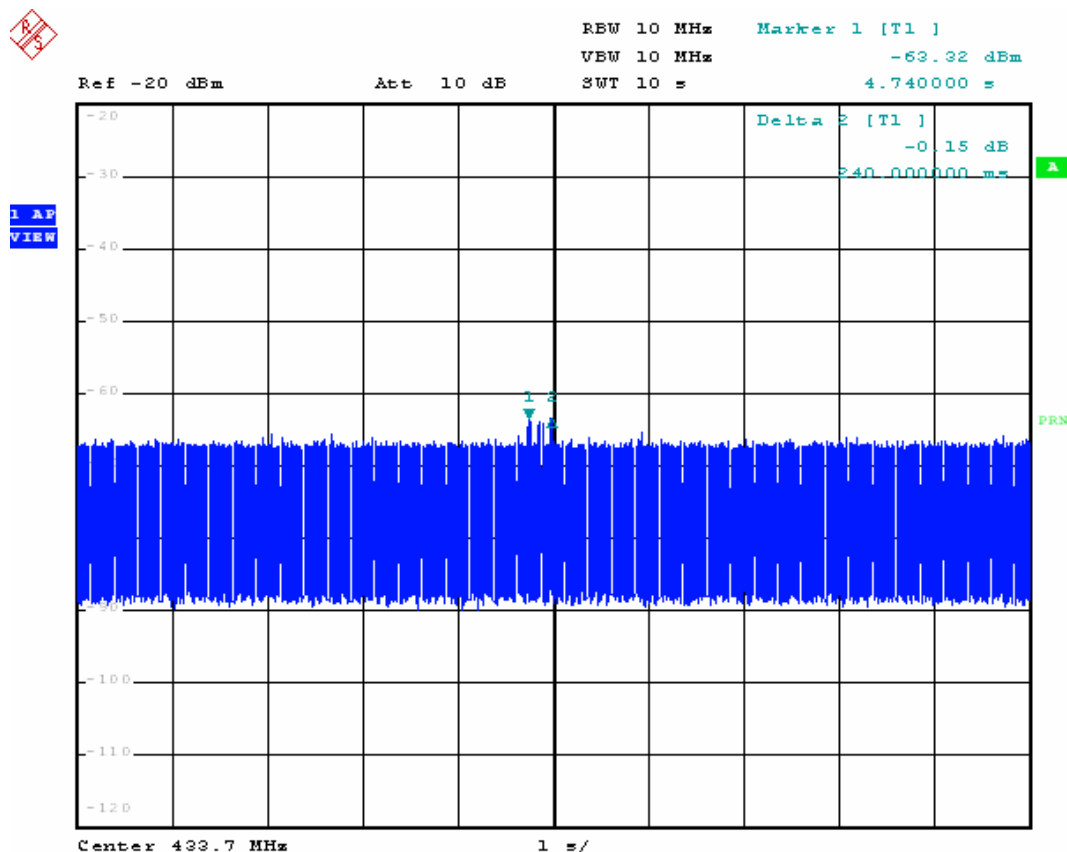
4.4. Transmission Cessation from Time-of-Release Test

4.4.1 Test Standard:

FCC Part 15: 2005, Subpart C (Section: 15.231(a)):

According A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being release.

The plot of test result is attached as below:



4.4.2 Test Result:

Transmission Limited Time (s)	Actual Transmission Time (s)	Pass / Fail
≤ 5	0.24	Pass

