

FCC TEST REPORT
for
Designated Parking Corp.
FCC ID: RXF103
Myspot
Remote Controlled Parking Barrier(Tx)
Model No.: HT-433

Prepared for : Designated Parking Corp.
Address : 10 Ridge Road West Orange, NJ 07052

Prepared By : Anbotek Compliance Laboratory Limited
Address : 2/F, Langfeng Building, Kefa Road North, Hi-tech Industrial
Park, Nanshan District, Shenzhen 518057, China
Tel: (86) 755-26014771
Fax: (86) 755-26014720

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TABLE OF CONTENT

Description	Page
Test Report	1
1. GENERAL INFORMATION	4
1.1. Description of Device (EUT).....	4
1.2. Description of Test Facility	5
1.3. Measurement Uncertainty.....	5
2. MEASURING DEVICE AND TEST EQUIPMENT	6
3. TEST PROCEDURE	7
4. CONDUCTED POWER LINE TEST	8
4.1 Test Equipment.....	8
4.2 Test Procedure	8
4.3 Test Setup	8
4.4 Configuration of the EUT	9
4.5 EUT Operating Condition	9
4.6 Conducted Power Line Emission Limits	9
4.7 Conducted Power Line Test Result	9
5. RADIATION INTERFERENCE	10
5.1 Test Equipment.....	10
5.2 Requirements	10
5.3 Test Data.....	10
6. CALCULATION OF DUTY CYCLE	11
7. OCCUPIED BANDWIDTH	12
7.1 Test Equipment.....	12
7.2 Requirements	12
7.3 Method of Measurement.....	12
7.4 Test Result	12
8. TRANSMIT TIME	13
8.1 Test Equipment.....	13
8.2 Requirements	13
8.3 Test Result	13
9. FCC ID LABEL	14
10. PHOTOGRAPH	16
10.1. Photo of Radiation Emission Test	16

APPENDIX I (Photos of EUT) (5 Pages)

FCC ID: RXF103

TEST REPORT

Measurement Procedure Used:

FCC Part15 Subpart C, Paragraph 15.231

The device described above is tested by Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited

Date of Test : Sep.04-11, 2007

Prepared by:

Sep.04~11, 2007

Prepared by:

Jacky
(Engineer)

Reviewer

(Project Manager)

Approved & Authorized Signer:

✓ (Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : Myspot
Remote Controlled Parking Barrier(Tx)

Model Number : HT-433

Test Power Supply : DC 6V

Frequency : 433.92MHz

Applicant : Designated Parking Corp.
Address : 10 Ridge Road West Orange, NJ 07052

Manufacturer : River Display Electronics (Songgang) Mfg. C
Address : Shapu Industry Zone, No. 3, Baoan District, Songgang, Shenzhen

Date of receiver : Aug.29, 2007
Date of Test : Sep.04~11, 2007

1.2. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

VCCI-Registration No.: R-2197 and C-2383

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (VCCI) Voluntary Control Council for Interference by Information Technology Equipment. The acceptance letter from the VCCI is maintained in our files. Registration R-2197 and C-2383, September 29, 2005.

FCC-Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 556682, August 04, 2005.

IC-Registration No.: 6002

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 6002, August 25, 2005.

Test Location

All Emissions tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. at No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China

1.3. Measurement Uncertainty

Radiation Uncertainty : $Ur = \pm 4.26\text{dB}$

Conduction Uncertainty : $Uc = \pm 2.66\text{dB}$

2. MEASURING DEVICE AND TEST EQUIPMENT

Equipment	Manufacturer	Model #	Serial #	Data of Cal.	Due Data
EMI Test Receiver	Rohde & Schwarz	ESCI	100119	Mar.03, 2007	Mar.02, 2008
EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	Sep.22, 2006	Sep.21, 2007
Spectrum Analyzer	Rohde & Schwarz	FSP40	100273	Sep.18, 2006	Sep.17, 2007
Signal Generator	Rohde & Schwarz	SMR27	100124	Jul.06, 2005	Jul.25, 2007
Signal Generator	Rohde & Schwarz	SML03	102319	Aug.01, 2005	Aug.01, 2007
AC Power Source	All Power Electronic Co.	APW-1100N	890869	N/A	N/A
Absorbing Clamp	Rohde & Schwarz	MDS21	100218	Apr.30, 2005	Apr.29, 2007
Power Meter	Rohde & Schwarz	NRVD	101287	Jul.19, 2005	Jul.18, 2007
Coaxial Cable	N/A	N/A	N/A	May.31, 2006	May.30, 2007
Coaxial Cable	N/A	N/A	N/A	May.31, 2006	May.30, 2007
Coaxial Cable	N/A	N/A	N/A	May.31, 2006	May.30, 2007
Universal radio Communication tester	Rohde & Schwarz	CMU200	101724	Sep.08, 2006	Sep.07, 2008
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
BiConilog Antenna	ETS-LINDGREN	3142C	00042670	Mar.03, 2007	Mar.02, 2008
BiConilog Antenna	ETS-LINDGREN	3142C	00042673	Mar.03, 2007	Mar.02, 2008
Double-ridged Waveguide horn	ETS-LINDGREN	3117	00035926	Dec.30, 2005	Dec.29, 2007
Double-ridged Waveguide horn	ETS-LINDGREN	3117	00041545	Dec.30, 2005	Dec.29, 2007
Pre-amplifier	Rohde & Schwarz	AFS42-00101800-25-S-42	1091457	Jul.17, 2006	Jul.16, 2008
Thermo-/Hygrometer	N/A	TH01	N/A	May.03, 2006	Mar.03, 2008
Shielding Room	Zhong Yu Electron	GB-88	N/A	N/A	N/A
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	N/A	Apr.28, 2005	Apr.27, 2007

3. Test Procedure

Radiation Interference:

The test procedure used was ANSI STANDARD C63.4-2003 using a spectrum analyzer with a preselector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz. The ambient temperature of the EUT was 98.3°F with a humidity of 40%.

Formula of Conversion Factors:

The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of $\text{dB}\mu\text{V}$) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

$$\begin{aligned} \text{Freq (MHz) METER READING} + \text{ACF} &= \text{FS} \\ 33.20 \text{ dB}\mu\text{V} + 10.36 \text{ dB} &= 30.36 \text{ dB}\mu\text{V/m} @ 3\text{m} \end{aligned}$$

ANSI STANDARD C63.4-2003 10.1.7 Measurement Procedures:

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental. Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

4. Conducted Power Line Test

4.1 Test Equipment

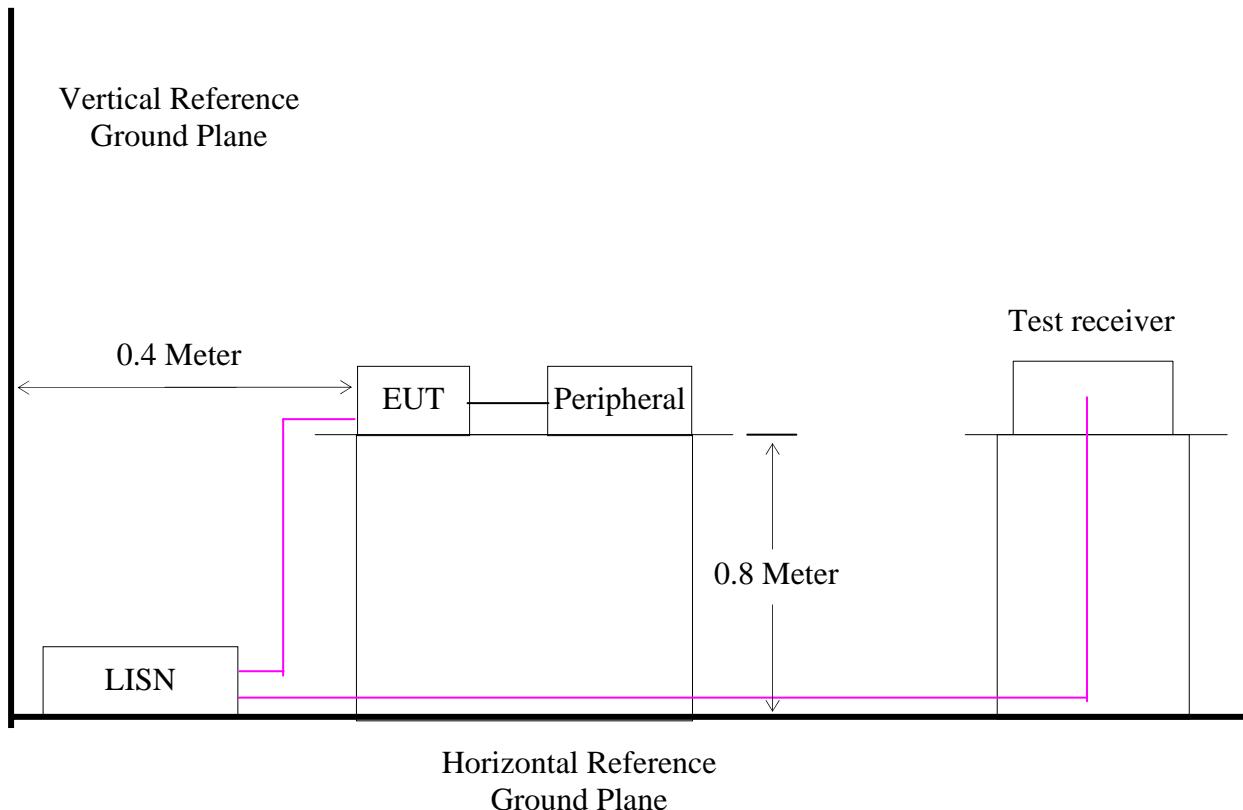
Please refer to Section 2 this report

4.2 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm/50 μ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50 μ H coupling impedance with 50ohm termination.

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2003 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

4.3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.

4.4 Configuration of the EUT

The EUT was configured according to ANSI C63.4-2004. EUT was used Li-Ion battery. The operation frequency is from 2400MHz~2483.5MHz. Enable the signal transmitted from the EUT. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

Note:

- 1) Operating Modes: Each of lowest, middle and highest channel frequencies transmits continuously for emissions measurements. The EUT operates in normal FHSS.
- 2) Special Test Software & Hardware: Special firmware and hardware provided by the Applicant are installed to allow the EUT to operate in FHSS at each channel frequency continuously. For example, the transmitter will be operated at each of lowest, middle and highest frequencies individually continuously during testing.
- 3) Transmitter Test Antenna: The EUT is tested with the antenna fitted in a manner typical of normal intended use as an integral / non-integral antenna equipment as described with the test results.
- 4) Frequency(ies) Tested: 2402MHz, 2441MHz and 2480MHz were pre-tested, The worst case one, was chosen for conducted emission test.
- 5) Above 1GHz, the 2402MHz, 2441MHz and 2480MHz were tested individually.
- 6) Normal Test Modulation: FHSS
- 7) Modulating Signal Source: Internal

* Associated Antenna Descriptions: The antenna used in this product is embedded antenna

4.5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 2003

4.5.1 Setup the EUT and simulator as shown as Section 4.3.

4.5.2 Turn on the power of all equipment.

4.5.3 Let the EUT work in test mode (On) and measure it.

4.6 Conducted Power Line Emission Limits

FCC Part 15 Paragraph 15.207		
Frequency Range	Limits (dB μ V)	
	Class A QP/AV	Class B QP/AV
0.15 ~ 0.50	79/66	66 ~ 56 / 56 ~ 46*
0.50 ~ 5.00	73/60	56/46
5.00 ~ 30.00	73/60	60/50

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

2. In the above table, the tighter limit applies at the band edges.

4.7 Conducted Power Line Test Result

Owing to DC operation of EUT, this test item is not performed.

5. Radiation Interference

5.1 Test Equipment

Please refer to Section 2 this report

5.2 Requirements

Fundamental Frequency (MHz)	Field Strength of Fundamental (dB μ V)	Field Strength of Harmonics and Spurious Emissions (dB μ V/m @ 3m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94	51.48 to 61.94
470 and above	81.94	61.94

The limit for average field strength dB μ V/m for the fundamental frequency = 80.83 dB μ V/m. No fundamental is allowed in the restricted bands.

The limit for average field strength dB μ V/m for the harmonics and spurious frequencies = 60.83 dB μ V/m. Spurious in the restricted bands must be less than 54 dB μ V/m or 15.209.

5.3 Test Data

PASS.

Please refer the following:

Horizontal

Frequency (MHz)	*	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit	Over Limit
229.820	-	11.64	1.57	27.00	32.36	18.57	60.83	-42.26
432.550	-	16.56	2.34	27.52	82.70	74.08	80.83	-6.75
867.110	-	22.78	3.47	26.58	54.48	54.15	60.83	-6.68

Vertical

Frequency (MHz)	*	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit	Over Limit
229.820	-	11.64	1.57	27.00	36.10	22.32	60.83	-38.51
432.550	-	16.56	2.34	27.52	67.49	58.87	80.83	-21.96
863.230	-	22.70	3.46	26.62	51.35	50.89	60.83	-9.94

* -- Denotes Restricted Bands

Emissions attenuated more than 20 dB below the permissible value are not reported.

Sample Calculation of Limit:

$$41.6667 (433.92) - 7083.3333 = 10,996.68 \mu\text{V/m}$$

$$20\log(10,995.68) = 80.83 \text{ dB}\mu\text{V/m limit @ 433.92 MHz}$$

6. Calculation of Duty Cycle

The period of the pulse train is determined by observing it on an oscilloscope or a spectrum analyzer with zero (0) frequency span. A plot is then made of the pulse train with a sweep time of 100 milliseconds. This sweep determines the duration of the pulse train, which in this case is millisecond. This sweep allows the determination of the number of and type of pulses, i.e. long & short. Plots are then made showing the duration of each type of pulse and its duration.

From the 100 millisecond Plot, the number of a given type of pulse is then multiplied by the duration of that type pulse. This allows the calculation of the amount of time the EUT is on within 100 ms. If the pulse train is longer than 100 ms then this number is multiplied by 100 to determine the percentage ON TIME. If the pulse train is less than 100 ms the total on time is divided by the length of the pulse train and then multiplied by 100 to determine the percentage ON TIME. In this case, 36.0 ms ON TIME within a 66.0 ms pulse. The average field strength is determined by multiplying the peak field strength by the percent on time.

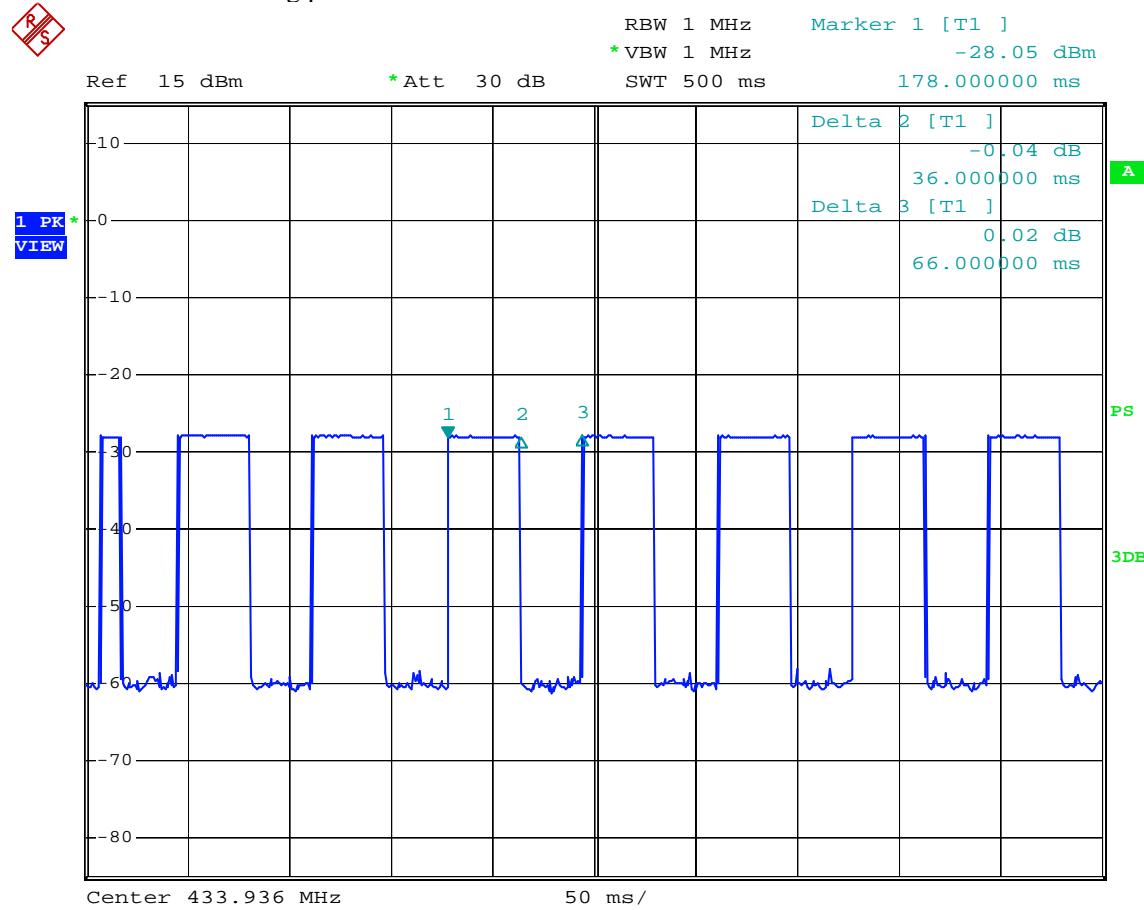
$$dB = 20 * \log(\text{ON TIME})/\text{PERIOD}$$

$$dB = 20 * \log(36.0/66.0)$$

$$dB = 20 * \log(0.545)$$

$$dB = -5.272$$

Please refer the following plot:



N

Date: 11.SEP.2007 09:59:27

7. Occupied Bandwidth

7.1 Test Equipment

Please refer to Section 2 this report

7.2 Requirements

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating between 70 and 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

7.3 Method of Measurement

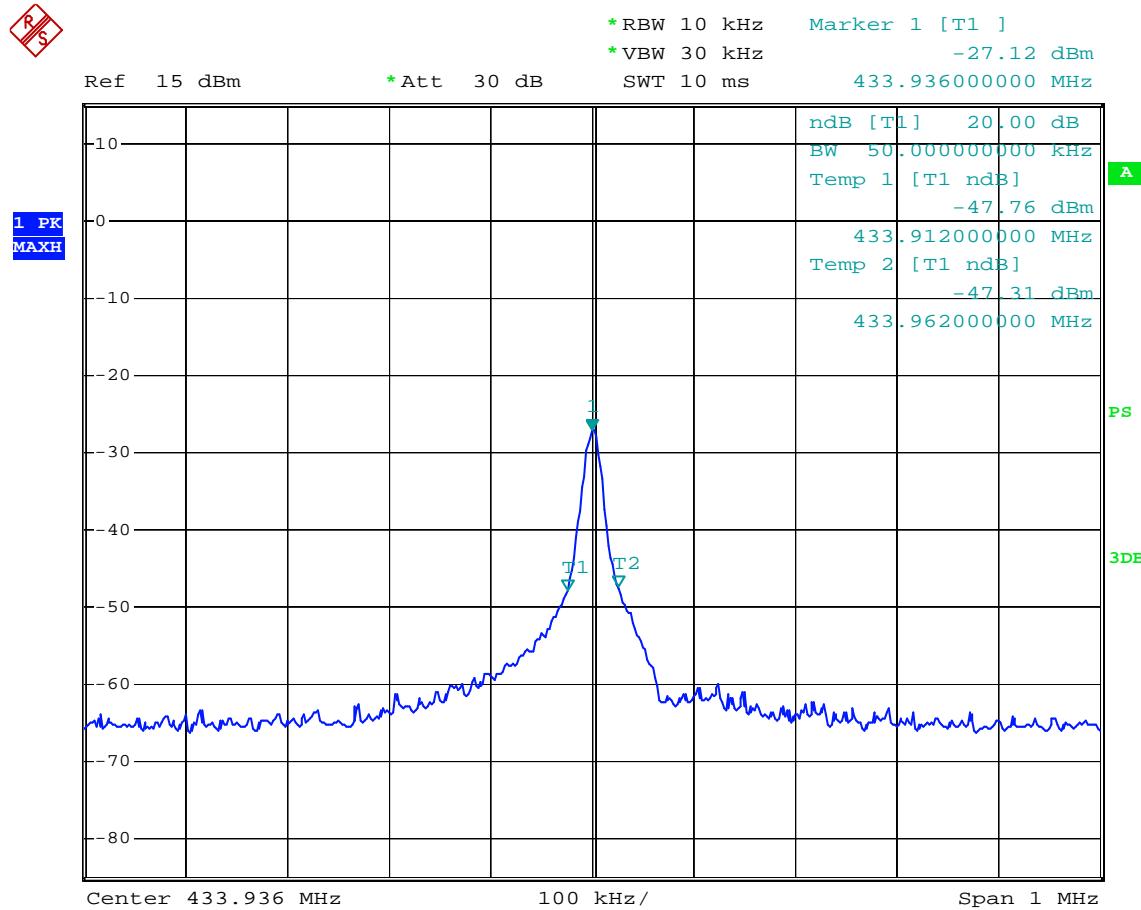
A small sample of the transmitter output was fed into the spectrum analyzer and the following plot was generated. The vertical scale is set to 10 dB per division.

7.4 Test Result

PASS.

Please refer the following plot.

FCC ID: RXF103



N

Date: 11.SEP.2007 09:56:18

8. Transmit Time

8.1 Test Equipment

Please refer to Section 2 this report

8.2 Requirements

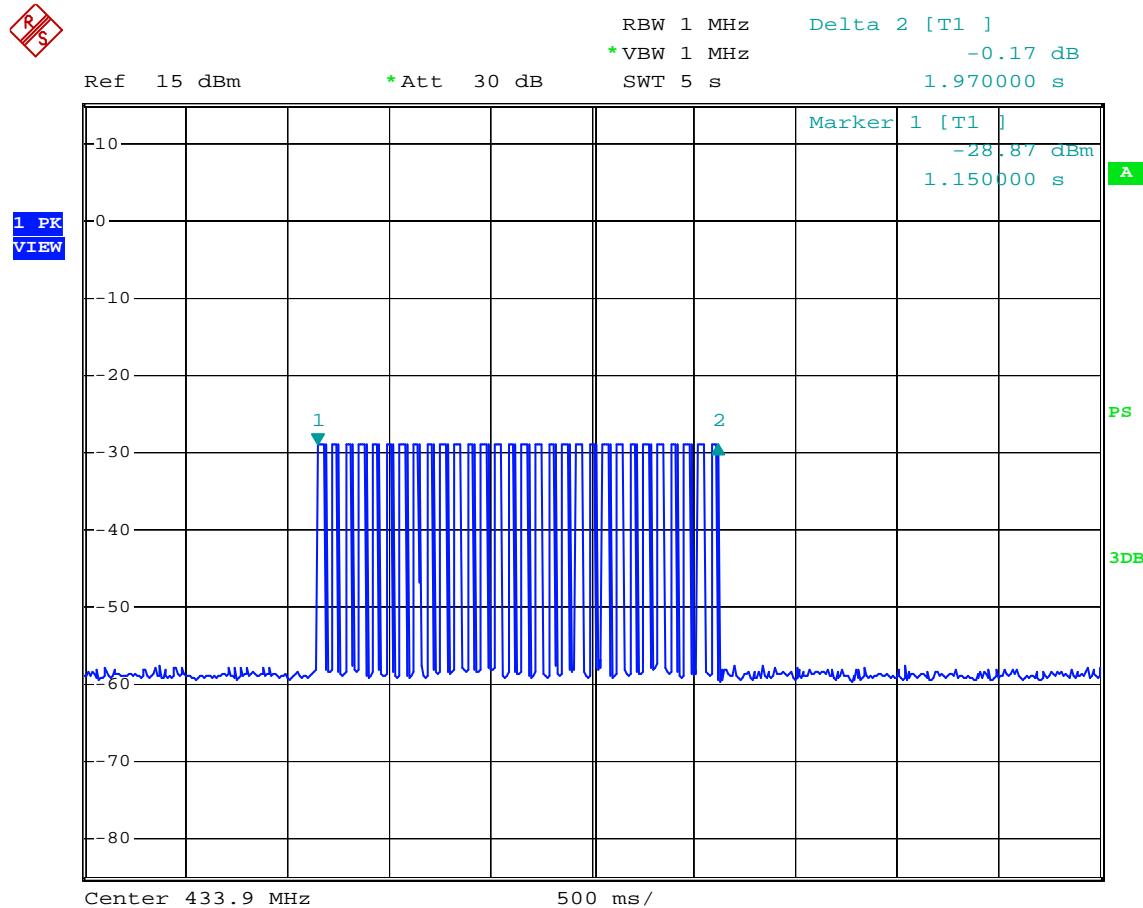
A Manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

8.3 Test Result

PASS.

Please refer the following plot.

FCC ID: RXF103



N

Date: 11.SEP.2007 09:53:17

9. FCC ID Label

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

FCC ID: RXF103

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC ID Label Location

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Bottom View/Proposed FCC ID Label Location



10. PHOTOGRAPH

10.1. Photo of Radiation Emission Test



APPENDIX I (Photos of EUT)

Figure 7
Transmitter of the EUT-Front View



Figure 8
Transmitter of the EUT-Back View



Figure 9
Transmitter of the EUT-Inside View



Figure 10
Transmitter of the EUT-Inside View

