


FCC PART 15 CLASS B  
EMI MEASUREMENT AND TEST REPORT  
For

Zhongshan City Aifeier Electrical Factory  
No.8, Erxiang, A Street, Cross bar arch Road, SanSha Market, Henglan Town, Zhongshan City

**FCC ID:YS7FC-368MR**

Sep. 17, 2010

This Report Concerns: Original Report	Equipment Type : Wireless Digital Remote Control Switch
Test Engineer:	Eric Li <i>Eric Li</i>
Report No.:	BST10090771R-3
Receive EUT Date/Test Date:	Sep.13,2010/ Sep.13,2010- Sep.17,2010
Reviewed By:	Christina Deng <i>Christina Deng</i>
Prepared By:	 <b>Shenzhen BST Technology Co.,Ltd.</b> 3F, Weames Technology Building, No. 10 Kefa Road, Science Park, Nanshan District, Shenzhen, Guangdong, China Tel: 0755-26747751 ~ 3 Fax: 0755-26747751 ~ 3 ext.826

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## **1. GENERAL INFORMATION**

### **1.1. Report information**

1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.

1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

Test Facility -

The test site used to collect the radiated data is located on the address of emitel (Shenzhen) Limited

(FCC Registered Test Site Number: 746887) on

Building 2, 171 Meihua Road, Futian District, Shenzhen, 518049 China

The Test Site is constructed and calibrated to meet the FCC requirements.

### **1.2. Measurement Uncertainty**

Available upon request.

## 2. PRODUCT DESCRIPTION

### 2.1. EUT Description

Description : Wireless Digital Remote Control Switch  
Trade Name :



Applicant : Zhongshan City Aifeier Electrical Factory  
No.8, Erxiang, A Street, Cross bar arch Road, SanSha  
Market, Henglan Town, Zhongshan City

Model Number : FC-368M, FC-226, FC-468M, FC-328, FC-338

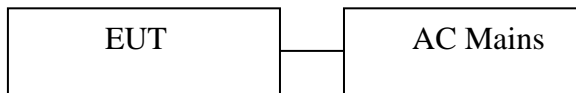
#### Additional Information

Power Supply : AC 230V

Frequency : 433.92MHz

Antenna : The antenna is solder to PCB. The antenna used in this product is A UNIQUE ANTENNA. please refer to the internal photos.

### 2.2. Block Diagram of EUT Configuration



### 2.3. Support Equipment List

- |    |    |       |
|----|----|-------|
| 1. | -- | ----- |
| 2. | -- | ----- |
| 3. | -- | ----- |

### 2.4. Test Conditions

Temperature: 23~25

Relative Humidity: 55~63 %

### 3. FCC ID LABEL

**FCC ID:YS7FC-368MR**

**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.**

#### Label Location on EUT

**EUT Bottom View/ FCC ID Label Location**



#### 4. TEST RESULTS SUMMARY

**Table 1 Test Results Summary**

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: "N/A" means "Not applicable."

##### **Modifications**

No modification was made.

## 5. TEST EQUIPMENT USED

### 5.1. For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Jun. 01, 10	1 Year
2.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Jun. 01, 10	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Jun. 01, 10	1 Year
4.	Conical	Emtek	N/A	N/A	N/A	N/A
5.	Voltage Probe	Schwarzbeck	TK9416	N/A	Jun. 01.10	1 Year
6.	Coaxial Switch	Anritsu	MP59B	6100214550	Jun. 01, 10	1 Year

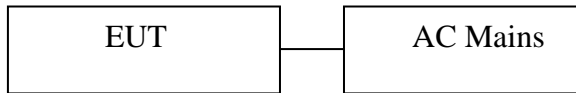
### 5.2. For Radiated Emission Measurement

Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Jun 01,10	1 Year
2.	Test Receiver	Rohde&Schwarz	ESC830	828982/018	Jun 01,10	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	Jun 01,10	1 Year
4.	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Jun 01,10	1 Year
5.	Cable	Schwarzbeck	AK9513	ACRX1	Jun 01,10	1 Year
6.	Cable	Rosenberger	N/A	FR2RX2	Jun 01,10	1 Year
7.	Cable	Schwarzbeck	AK9513	CRRX2	Jun 01,10	1 Year
8.	Cable	Schwarzbeck	AK9513	CRRX2	Jun 01,10	1 Year
9.	Single Phase Power Line Filter	MPE	23332C	N/A	Jun 01,10	1 Year
10.	Single Phase Power Line Filter	MPE	23333C	N/A	Jun 01,10	1 Year
11.	Signal Generator	HP	864A	3625U00573	Jun 01,10	1 Year

## 6. CONDUCTED EMISSION TEST

### 6.1. Block Diagram of Test Setup



### 6.2. Test Standard

FCC Part 15 CLASS B

### 6.3. Conducted Emission Limit(Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

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

### 6.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

#### 6.4.1.EUT Information

Model Number : **FC-368M**  
 Serial Number : **N/A**

### 6.5. Operating Condition of EUT

6.5.1.Setup the EUT and simulators as shown in Section 5.1.

6.5.2.Turn on the power of all equipments.

6.5.3.Let the EUT work in test modes (EUT Working) and test it.



### **6.6. Test Procedure**

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESHS30) is set at 10KHz. and all the scanning waveform are attached within **Appendix I**.

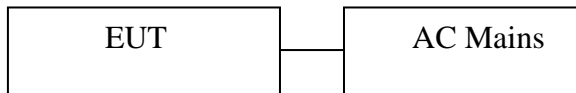
### **6.7. Test Result**

**PASS**

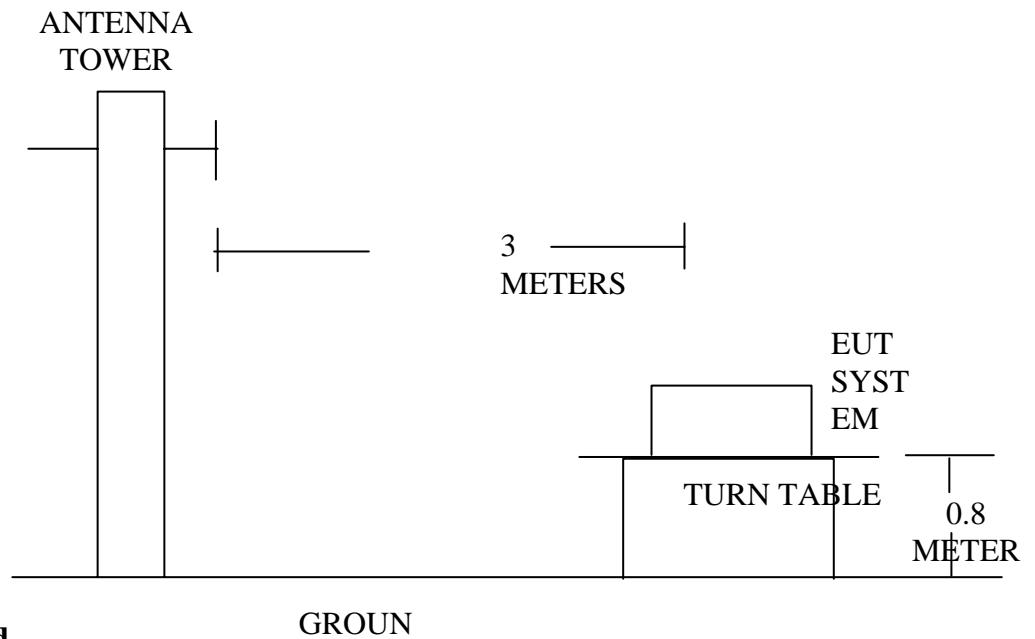
## 7. RADIATED EMISSION MEASUREMENT

### 7.1. Block Diagram of EUT Configuration

7.1.1. Block Diagram of connection between the EUT and the simulators



7.1.2. Anechoic Chamber Test Setup Diagram



### 7.2. Test Standard

FCC Part 15 CLASS B

### 7.3. Radiated Emission Limit(Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0
>1000	3	54.0(AV)

Note:(1) The smaller limit shall apply at the edge between two frequency bands.  
 (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.

**7.4. EUT Configuration on Test**

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

**7.5. Operating Condition of EUT**

- 7.5.1. Setup the EUT as shown on Section 6.1.2
- 7.5.2. Turn on the power of all equipments.
- 7.5.3. Let the EUT work in test mode(EUT working) and measure it.

**7.6. Test Procedure**

The measurement procedures found in ANSI C63.4-2003 as required by 47 CFR Part 15 Subpart A Section 15.31(a)(3).  
 The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver is 120 KHz(The frequency range from 30MHz to 1000MHz is checked.) and 1MHz(The frequency range from 1000MHz to 2000MHz is checked). The EUT is tested in Anechoic Chamber. All the test results are listed in Section 7.7. and all the scanning waveform are attached within **Appendix II**.

**7.7. Test Result**

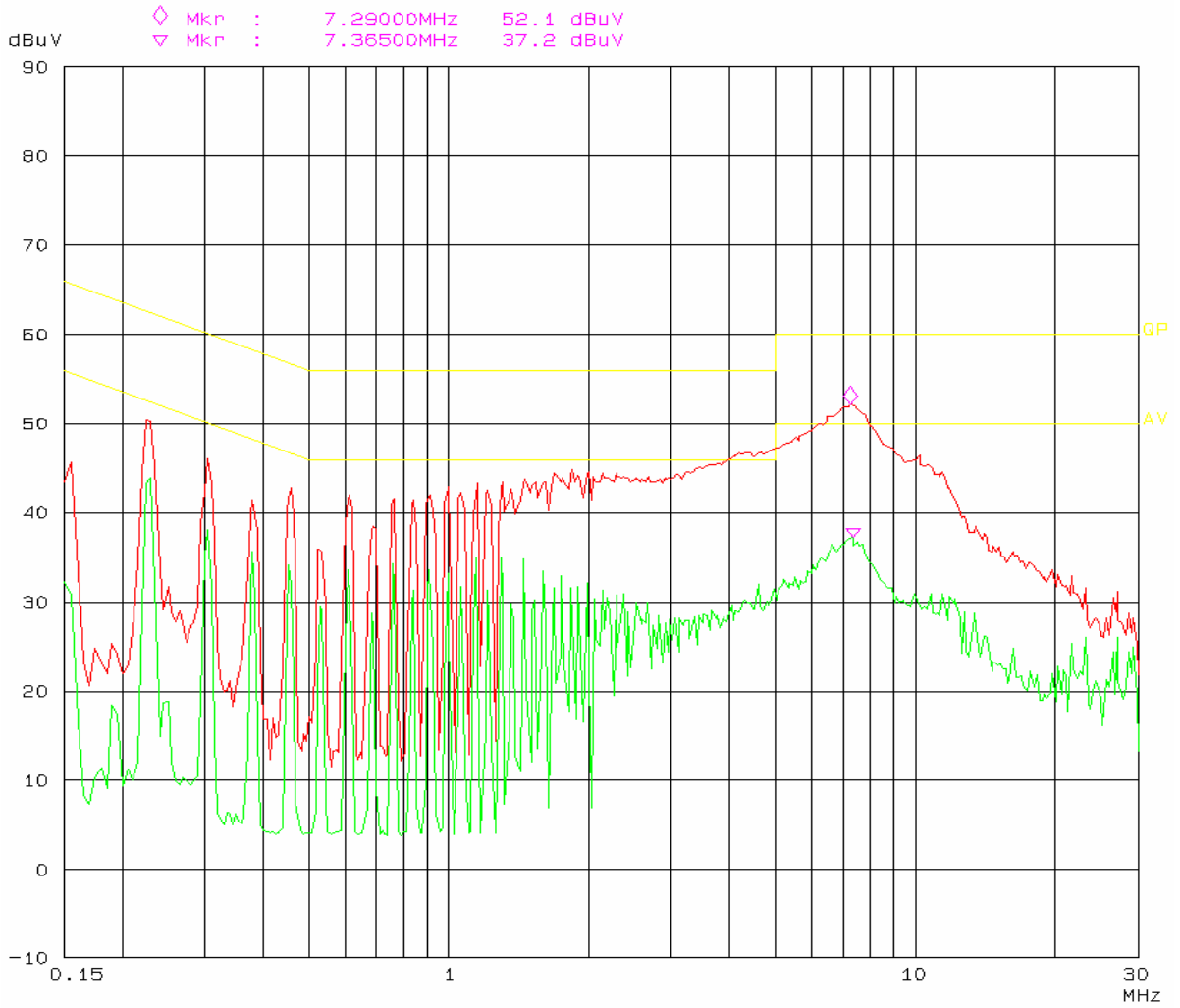
**PASS**

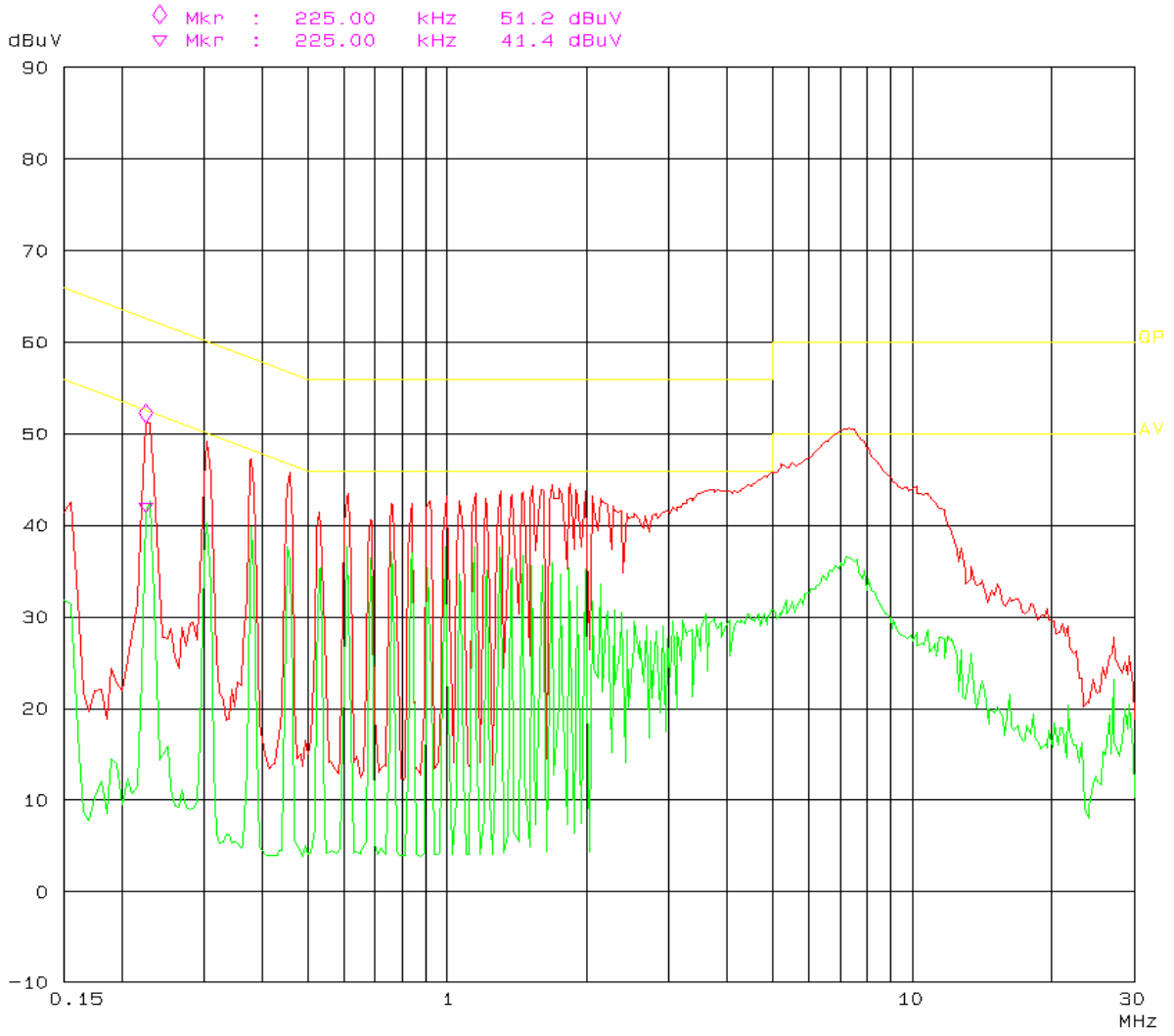
**APPENDIX I**

*Test Mode: operating(worse case mode)*

Line Conducted Emissions				FCC Part 15 CLASS B	
Frequency (MHz)	Amplitude (dB $\mu$ V)	Detector (QP/AV)	Conductor (Line/Neutral)	Limit (dB $\mu$ V)	Margin (dB)
7.2900	52.10	QP	Line	60.00	7.90
0.6150	37.70	AV	Neutral	46.00	8.30
0.2300	44.00	AV	Line	52.45	8.45
0.3800	39.80	AV	Neutral	48.28	8.48
0.4550	37.70	AV	Neutral	46.78	9.08
7.2700	50.50	QP	Neutral	60.00	9.50
0.3050	40.30	AV	Neutral	50.11	9.81
0.4600	45.90	QP	Neutral	56.69	10.79
0.3050	49.30	QP	Neutral	60.11	10.81
0.3800	47.20	QP	Neutral	58.28	11.08
1.1450	34.90	AV	Line	46.00	11.10
1.4450	34.80	AV	Line	46.00	11.20
0.2250	51.20	QP	Neutral	62.63	11.43
0.2250	41.10	AV	Neutral	52.63	11.53
0.3050	38.10	AV	Line	50.11	12.01
0.2300	50.30	QP	Line	62.45	12.15
1.4550	43.80	QP	Line	56.00	12.20
0.6150	33.70	AV	Line	46.00	12.30
0.6150	43.40	QP	Neutral	56.00	12.60
1.1500	43.20	QP	Line	56.00	12.80
7.3650	37.20	AV	Line	50.00	12.80
7.2050	36.60	AV	Neutral	50.00	13.40
0.6150	42.00	QP	Line	56.00	14.00
0.3050	46.10	QP	Line	60.11	14.01

Plot(s) of Test Data is presented hereinafter as reference.

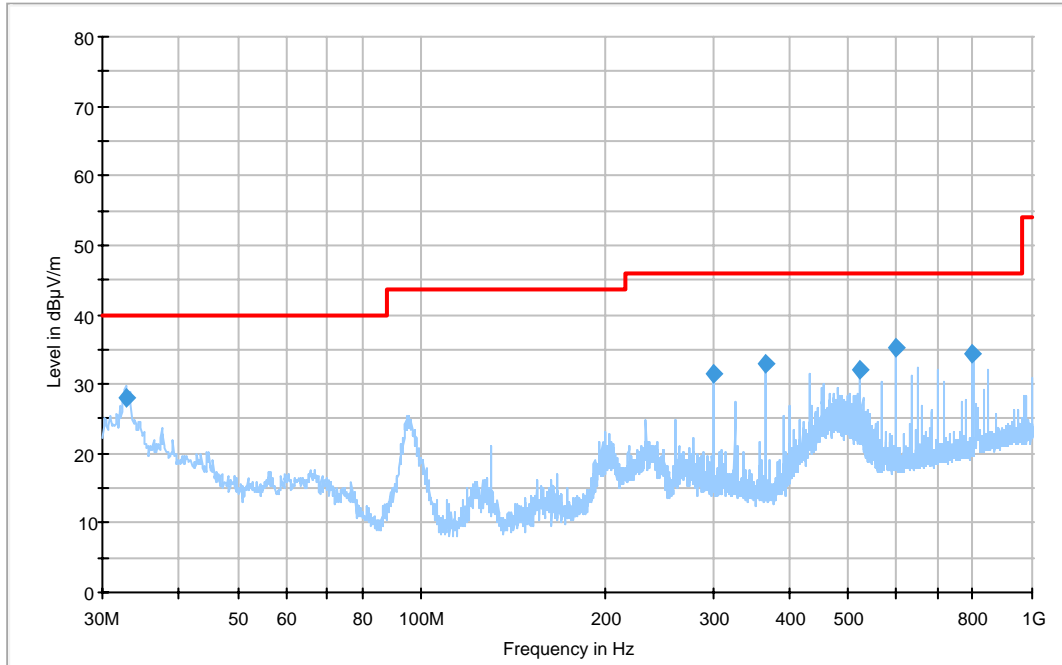




**APPENDIX II**



Test Mode: *operating* (worse case mode)



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
600.078200	35.3	104.0	V	3.0	-8.7	46.0	10.7
800.140775	34.5	129.0	V	196.0	-5.4	46.0	11.5
32.893900	28.1	107.0	V	198.0	-10.5	40.0	11.9
366.718675	33.0	174.0	V	0.0	-12.9	46.0	13.0
521.176850	32.2	132.0	V	334.0	-10.2	46.0	13.8
300.023750	31.5	249.0	H	218.0	-3.6	46.0	14.5

Frequency (MHz)	Antenna Polarization	Emission Level (PK)(dBuV/m)	FCC 15 Subpart B Limit (AV)(dBuV/m)
1301.76	V	43.84	54
1301.76	H	43.82	54
1450.11	V	45.52	54
1506.35	V	44.33	54
1623.65	V	45.55	54
1703.56	H	46.45	54