

4. TRANSMISSION REQUIREMENT

4.1. Requirement

1. The provisions of this Section are restricted to periodic

operation within the band 40.66 40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this Section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Radio control of toys is not permitted. Continuous transmissions, such as voice or video, and data transmissions are not permitted. The prohibition against data transmissions does not preclude the use of recognition codes. Those codes are used to identify the sensor that is activated or to identify the particular component as being part of the system.

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

4.2. Test SET-UP



4.3. Measurement Equipment Used:

Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	ESCI	10017	07/18/2015	07/17/2016

4.4. Test Procedure

The following table is the setting of spectrum analyzer.

Spectrum analyzer	Setting
Attenuation	Auto
Span Frequency	0Hz
RB	1000KHz
VB	3000KHz
Detector	Peak
Trace	Max hold
Sweep Time	5S

- a. The transmitter output (antenna port) was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 1000KHz and VBW to 3000KHz, Set Detector to Peak, Trace to Max Hold.
- c. Set the span to 0Hz and the sweep time to 5s and record the value.

TRF No.: FCC 15.231/A Page 15 of 19 Report No.: ES151102001E Ver. 1.0



4.5. Test Data

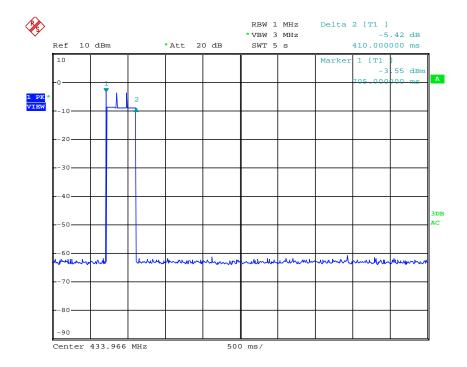
Environmental Conditions

Temperature:	20°C
Relative Humidity:	52%
ATM Pressure:	1032mbar

Test Mode: Transmitting

Frequency (MHz)	Transmitting time (ms)	Limit (Second)	Result
433.966	410	5	PASS

Refer to the attached plot



Date: 9.NOV.2015 10:20:43



5. BANDWIDTH TEST

5.1. Measurement Procedure

The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector. Record the 20 dB bandwidth of the carrier.

5.2. Test SET-UP (Block Diagram of Configuration)



15.231 (c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

5.3. Measurement Equipment Used:

Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	ESCI	10017	07/18/2014	07/17/2016

5.4. Measurement Results:

Spectrum Detector: PK Test Date: November 09, 2015

Test By: Jack Li Temperature: 21°C Test Result: PASS Humidity: 53 %

Modulation: ASK

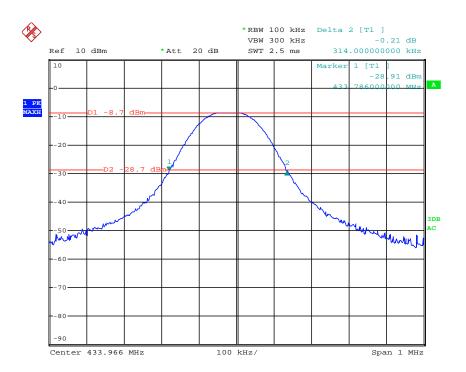
Channel number	Channel frequency (MHz)	20dB Down BW(kHz)	Limit
CH1	433.966	314	≤1.08492MHz

Remark:

The bandwidth limit is 433.966MHz x 0.0025 = 1084.92 kHz.

TRF No.: FCC 15.231/A Page 17 of 19 Report No.: ES151102001E Ver. 1.0





Date: 9.NOV.2015 10:07:52



6. ANTENNA APPLICATION

6.1. Antenna Requirement

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2. Result

The EUT's antenna is PCB antenna, using a permanently attached antenna which is not replaceable. The antenna's gain is less than 1dBi and meets the requirement.

---END OF REPORT---

TRF No.: FCC 15.231/A Page 19 of 19 Report No.: ES151102001E Ver. 1.0