

**TEST REPORT****FCC Part 15 Subpart C & IC RSS-210****FCC ID**.....: **L5CEC-B130TX****IC ID**.....: **7021A-ECB130TX****Report Reference No**.....: **WE09060002**

Compiled by

( position+printed name+signature)...: File administrators Wenliang Li

Supervised by

( position+printed name+signature)...: Test Engineer Cary Li

Approved by

( position+printed name+signature)...: Manager Jimmy Li

Date of issue.....: Jun 27, 2009

**Testing Laboratory Name**.....: **Shenzhen Huatongwei International Inspection Co., Ltd**

Address.....: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

**Applicant's name**.....: **Ansen Electronics Company**

Address.....: Room 73-78, 2/F, Sino Industrial Plaza, 9 Kai Cheung Road, Kowloon Bay, Kowloon, Hong Kong

**Manufacturer's name**.....: **Ansen Electronics Company**

Address.....: Chen Tung Industrial Zone, Ning Tau Administrative District, Qiao Tau Zhen, Dongguan, Guangdong

**Test specification:**Standards .....: **FCC Part Subpart 15C 2008 – Intentional Radiators**: **RSS-210 – Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment**

TRF Originator.....: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF.....: Dated 2006-06

**Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.**

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

**Equipment Under Test**.....: Remote sensor for Butler for Butler for Butler

Trade Mark .....: THE SHARPER IMAGE

Model/Type reference.....: W239-D

Listed Models .....: PP-SIRMT1

Result.....: **Positive**

**TEST REPORT**

<b>Test Report No. :</b> WE09060002	June 27, 2009 Date of issue
-------------------------------------	--------------------------------

Equipment under Test : Remote sensor for Butler for Butler

Model /Type : PP-SIRMT1

Listed Models : W239-D

**Applicant** : Ansen Electronics Company

Address : Room 73-78,2/F,Sino Industrial Plaza,9 Kai Cheung Road,  
Kowloon Bay,Kowloon,Hong Kong

**Manufacturer** : Ansen Electronics Company

Address : Chen Tung Industrial Zone,Ning Tau Administrative District,  
Qiao Tau Zhen,Dongguan,Guangdong

**SUMMARY OF STANDARDS AND RUSELT**

No.	Test Item	Test Standards and Procedure	Result
1	Radiated Emission	<b>FCC:</b> FCC Subpart 15C § 15.231(e) ANSI C63.4-2003 section 13.1.4 <b>IC:</b> RSS-210 section 2.6 Table 5 RSS-Gen section 6	Complied
2	Deactivation Time	<b>FCC:</b> FCC Subpart 15C § 15.231(e) <b>IC:</b> RSS-210 section A1.1.5	Complied
3	20dB Bandwidth	<b>FCC:</b> FCC Subpart 15C § 15.231(c) ANSI C63.4-2003 section 13.1.7	Complied
4	99% Occupied Bandwidth	<b>IC:</b> RSS-210 section A1.1.3 RSS-Gen section 4.6.1	Complied

NOTE: 1),The detailed test result please see section 4.

2),The test report merely corresponds to the test sample.

3),It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

## Contents

<b><u>1.</u></b>	<b><u>TEST STANDARDS .....</u></b>	<b><u>4</u></b>
<b><u>2.</u></b>	<b><u>SUMMARY .....</u></b>	<b><u>5</u></b>
2.1.	General Remarks	5
2.2.	Equipment Under Test Power Supply	5
2.3.	Short description of the Equipment under Test (EUT)	5
2.4.	EUT operation mode	5
2.5.	EUT configuration	6
2.6.	Related Submittal(s) / Grant (s)	6
2.7.	Modifications	6
<b><u>3.</u></b>	<b><u>TEST ENVIRONMENT .....</u></b>	<b><u>7</u></b>
3.1.	Address of the test laboratory	7
3.2.	Test Facility	7
3.3.	Environmental conditions	8
3.4.	Configuration of Tested System	8
3.5.	Statement of the measurement uncertainty	9
3.6.	Equipments Used during the Test	9
<b><u>4.</u></b>	<b><u>TEST CONDITIONS AND RESULTS .....</u></b>	<b><u>10</u></b>
4.1.	Radiated Emission	10
4.2.	Deactivation Time	17
4.3.	20dB Bandwidth	19
4.4.	99% Occupied Bandwidth	21
<b><u>5.</u></b>	<b><u>TEST SETUP PHOTOS OF THE EUT .....</u></b>	<b><u>23</u></b>
<b><u>6.</u></b>	<b><u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT .....</u></b>	<b><u>24</u></b>

## **1. TEST STANDARDS**

The tests were performed according to following standards:

### **FOR FCC:**

**FCC Rules Part 15 Subpart C (2008) - Intentional Radiators**

**ANSI C63.4 (2003) – American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz**

### **FOR IC:**

**RSS-210 Issue 7 June 2007 – Low-power Licence-exempt Radiocommunication Devices  
(All Frequency Bands): Category I Equipment**

**RSS-Gen Issue 2 June 2007 – General Requirements and Information for the Certification of Radiocommunication Equipment**

## 2. SUMMARY

### 2.1. General Remarks

Date of receipt of test sample : Jun 23, 2009

Testing commenced on : Jun 24, 2009

Testing concluded on : June 26, 2009

### 2.2. Equipment Under Test Power Supply

Power supply voltage : ☐ 120V / 60 Hz ☐ 115V / 60Hz  
☐ 12 V DC ☐ 24 V DC  
☒ Other (specified in blank below)

DC 3V (2x1.5V AAA Battery)

### 2.3. Short description of the Equipment under Test (EUT)

Product Name : Remote sensor for Butler

Model Number : PP-SIRMT1

Operation Frequency : 433.92MHz

Modulation Technology : FSK

Transmitter Type : Periodic Transmitter

Sample Type : Prototype

Channel Number : 1

For more details, refer to the user's manual.

### 2.4. EUT operation mode

The EUT has been tested under typical operating mode.

Test Item	Test Mode	Note
Radiated Emission	Tx mode(433.92MHz)	X-axis
Deactivation Time	Tx mode(433.92MHz)	/
20dB Bandwidth	Tx mode(433.92MHz)	/
99% Ocupied Bandwidth	Tx mode(433.92MHz)	/
Duty cycle	Tx mode(433.92MHz)	/

## 2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

☐ - supplied by the manufacturer

☐ - supplied by the lab

☐ AC Adaptor

MODEL : /

INPUT : /

OUTPUT : /

☐ Adaptor Cable

Length : /

☐ Shield

☐ Unshield

☐ Detachable

☐ Undetachable

## 2.6. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **L5CEC-B130TX** filing to comply with the FCC Part 15 Subpart C 15.231(e) Rules 2008.

This submittal(s) (test report) is intended for IC: **7021A-ECB130TX** filing to comply with the RSS-210 and RSS-Gen correlative Rules.

## 2.7. Modifications

No modifications were implemented to meet testing criteria.

### **3. TEST ENVIRONMENT**

#### **3.1. Address of the test laboratory**

Shenzhen Huatongwei International Inspection Co., Ltd  
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China  
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2003) and CISPR Publication 22.

#### **3.2. Test Facility**

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

##### **CNAS-Lab Code: L1225**

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: August 02, 2007. Valid time is until March 29, 2012.

##### **A2LA-Lab Cert. No. 2243.01**

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is from Aug 24, 2005 to Sept 30, 2009.

##### **FCC-Registration No.: 662850**

Shenzhen Huatongwei International Inspection 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 662850, Renewal date Jul 1, 2009.

##### **IC-Registration No.: 5377**

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377 on November Feb 13, 2009.

##### **ACA**

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

##### **NEMKO-Aut. No.: ELA125**

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025:2005 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the Authorization is valid through April 25, 2009.

##### **VCCI**

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2484. Date of Registration: December 20, 2006. Valid time is until December 19, 2009.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: December 20, 2006. Valid time is until December 19, 2009.

**DNV**

Shenzhen Huatongwei International Inspection Co Ltd has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025(2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until 09 July, 2010.

**3.3. Environmental conditions**

During the measurement the environmental conditions were within the listed ranges:

Temperature: 22 ° C

Humidity: 65 %

Atmospheric pressure: 950-1050mbar

**3.4. Configuration of Tested System**

Equipment Used in Tested System

No.	Equipment	Manufacturer	Model No.	Serial No.	Note
1	-	-	-	-	-

Note: For actual sample please see test setup photos and EUT external photos.



### 3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.22dB	(1)
Radiated Emission	1~12.75GHz	4.35dB	(1)
20dB Bandwidth	/	0.25dB	(1)
99% Ocupied Bandwidth	/	0.25dB	(1)
Deactivation Time	/	0.5ms	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 3.6. Equipments Used during the Test

Radiated Emissions					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2008/11
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2008/11
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2008/11
4	TURNTABLE	ETS	2088	2149	2008/11
5	ANTENNA MAST	ETS	2075	2346	2008/11
6	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	2008/11
7	HORN ANTENNA	ROHDE & SCHWARZ	HF906	N/A	2008/06/

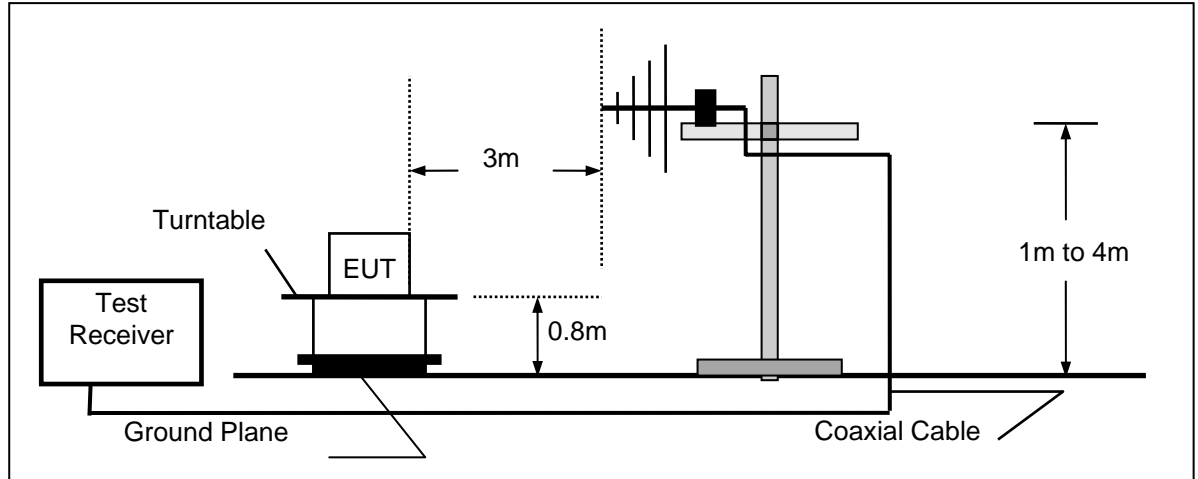
20dB Bandwidth & Deactivation Time & Duty Cycle & 99% Ocupied Bandwidth					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESCI	100106	2008/11
2	RECEIVER ANTENNA	/	/	/	/

## 4. TEST CONDITIONS AND RESULTS

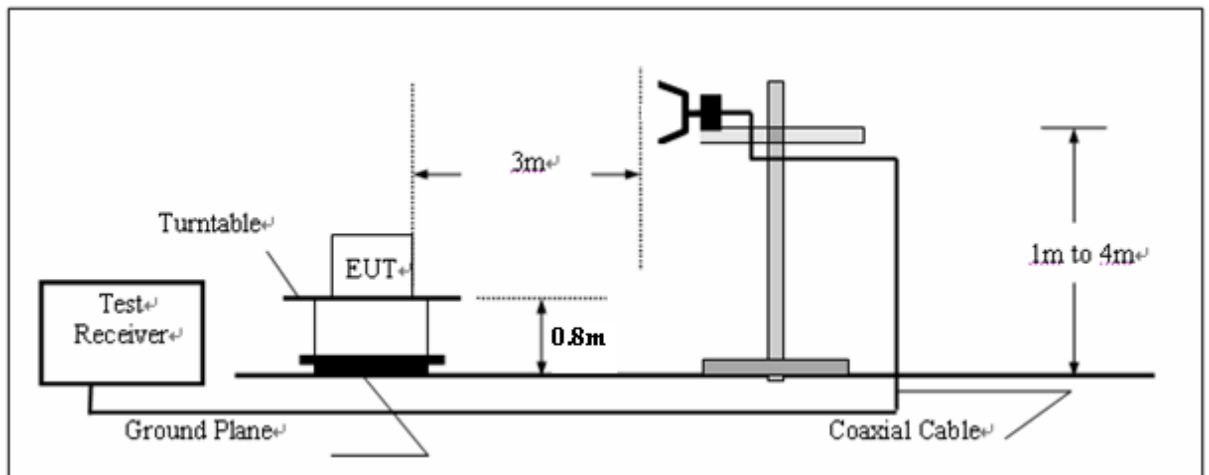
### 4.1. Radiated Emission

#### TEST CONFIGURATION

Radiated Emission Test Set-Up, Frequency range 30 - 1000MHz



Radiated Emission Test Set-Up, Frequency range 1GHz - 5GHz



#### TEST PROCEDURE

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 The test was beforehand scan carried out with EUT placement X-axis,Y-axis and Z-axis. X-axis was the worst status. So finally test was be carried out under this Y-axis.
- 3 Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT.
- 4 And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 5 Repeat above procedures until all frequency measurements have been completed.

## **RADIATION LIMIT**

For periodic transmitter, according to § 15.231(e) and RSS-210 section 2.6 table 5, the field strength of fundamental from device at a distance of 3 meters shall not exceed the following values:

Fundamental frequency (MHz)	Distance (Meters)	Field strength of fundamental (dBµV/m)	
		AV	Peak
433.92	3	72.87	92.87
Note: For the band 260-470MHz, uV/m at 3 meters = 16.67(F) – 2833.33 Where F is fundamental frequency 433.92MHz			

For periodic transmitter, according to § 15.231(e) and RSS-210 section 2.6 table 5, the field strength radiated emissions from device at a distance of 3 meters shall not exceed the following values:

Fundamental frequency (MHz)	Distance (Meters)	Field strength of spurious emission	
		(microvolts/meter)	(dBµV/m)
40.66-40.70	3	100	40
70-130	3	50	34
130-174	3	50 to 150	34 to 43.5
174-260	3	150	43.5
260-470	3	150 to 500	43.5 to 54
Above 470	3	500	54
Note: 1, For other bands limit pls refer 15.209 and RSS-210 section 6 2, The limit below 1GHz based CISPR quasi-peak detector, the limit above 1GHz based average detector and peak limit is 74dBuV/m.			

## **TEST RESULTS**

The emissions from 1GHz to 5GHz are peak measured and comply with average limit, detailed test data please see the following pages.

### Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

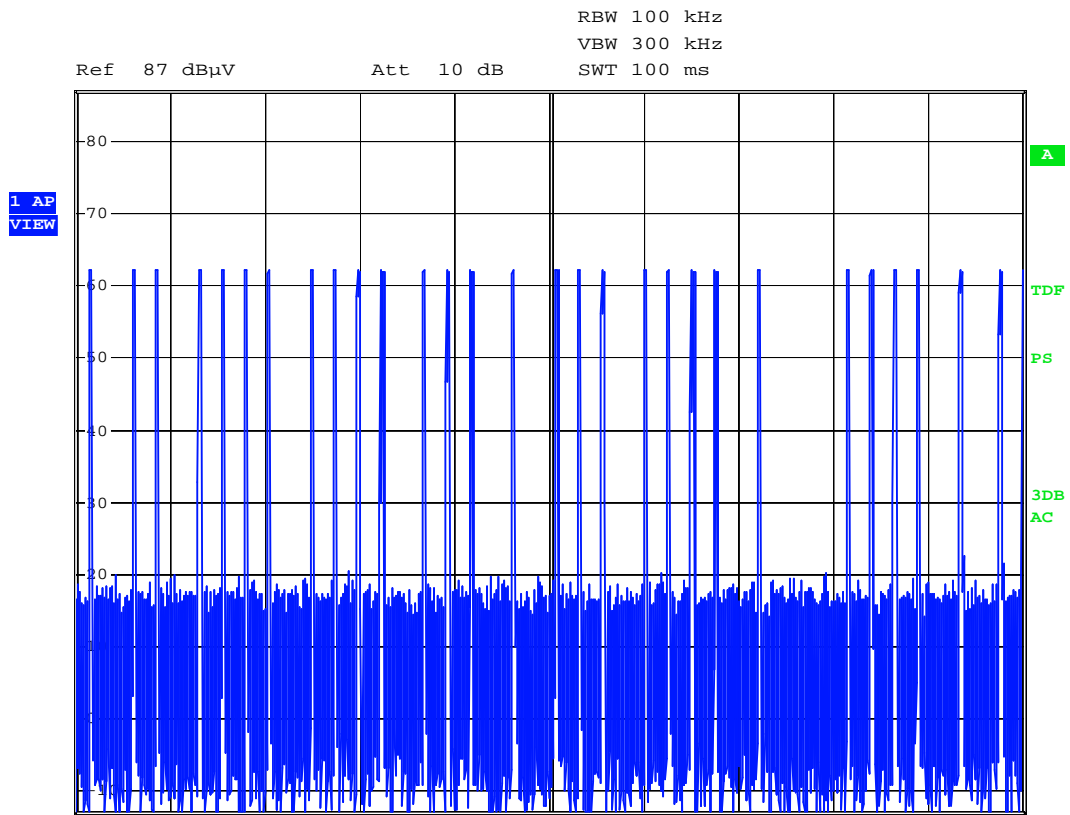
$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

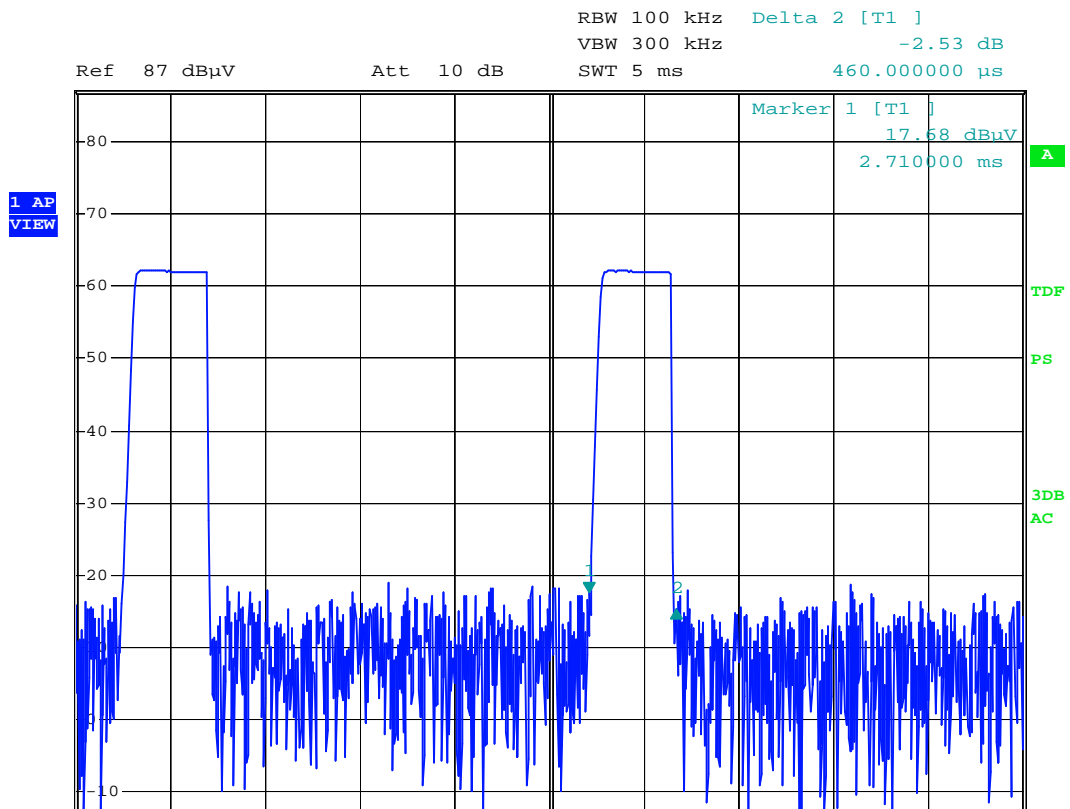
Duty Cycle Correction Factor

Duty Cycle = TX on/100ms X 100% = 29 X 0.46ms/100ms X 100% = 13.34%

Duty Cycle Correction Factor =  $20\log(\text{Duty Cycle}) = -17.5$



The pulses of 100ms = 29 times



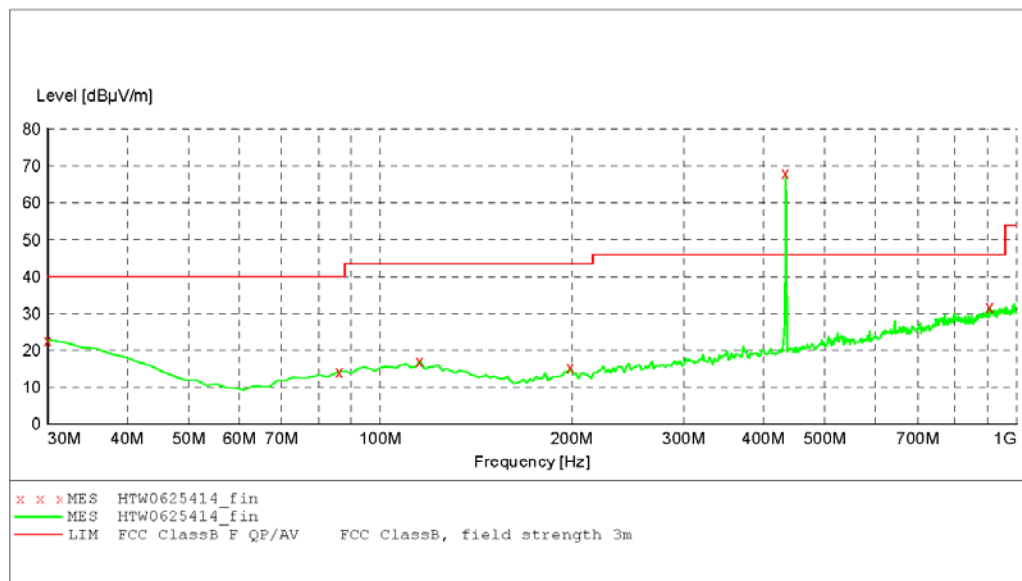
Time of a pulse = 450us = 0.46ms

**30MHz to 1GHz Test Data**

EUT: Remote sensor for Butler M/N: PP-SIRMT1  
 Manufacturer: Ansen  
 Operating Condition: TX Mode  
 Test Site: 3M CHAMBER  
 Operator: Cary  
 Test Specification: DC 3V  
 Comment: Y-axis  
 Start of Test: 6/25/2009 / 5:58:03PM

**SWEEP TABLE: "test (30M-1G)"**

Short Description:		Field Strength		Transducer	
Start	Stop	Detector	Meas. Time	IF Bandw.	
Frequency	Frequency				
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562 09

**MEASUREMENT RESULT: "HTW0625414\_fin"**

6/25/2009 5:59PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	22.80	21.1	40.0	17.2	QP	100.0	5.00	VERTICAL
86.372745	14.30	11.2	40.0	25.7	QP	100.0	199.00	VERTICAL
115.531062	17.10	12.7	43.5	26.4	QP	100.0	327.00	VERTICAL
199.118236	15.40	10.6	43.5	28.1	QP	100.0	5.00	VERTICAL
433.928657	68.20	16.7	92.8	24.6	Peak	100.0	114.00	VERTICAL
908.637275	31.80	25.7	46.0	14.2	QP	100.0	284.00	VERTICAL

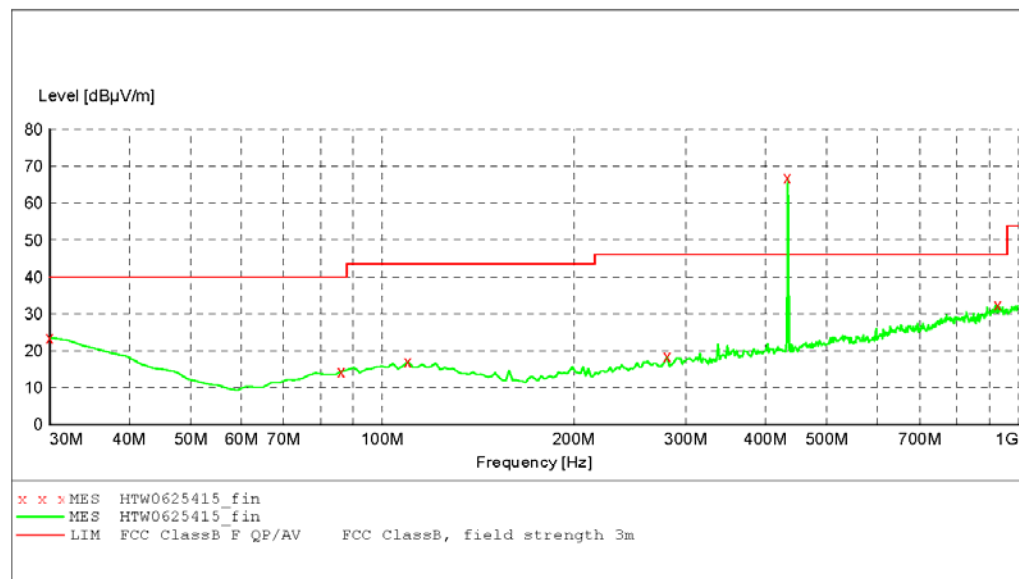
Frequency (MHz)	Field strength (dBμV/m)	AV Limit (dBμV/m)	Duty Cycle Correction Factor	Result (dB)	Margin (dB)	Det.
433.92	68.20	72.87	-17.4	50.84	22.03	AV

Note: Result = Field Strength + Duty Cycle Corrcetion Factor

EUT: Remote sensor for Butler M/N: PP-SIRMT1  
 Manufacturer: Ansen  
 Operating Condition: TX Mode  
 Test Site: 3M CHAMBER  
 Operator: Cary  
 Test Specification: DC 3V  
 Comment: Y-axis  
 Start of Test: 6/25/2009 / 6:00:15PM

**SWEEP TABLE: "test (30M-1G)"**

Short Description:		Field Strength		IF	Transducer
Start	Stop	Detector	Meas.	Time	Bandw.
Frequency	Frequency				
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562 09



**MEASUREMENT RESULT: "HTW0625415\_fin"**

6/25/2009 6:02PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.50	21.1	40.0	16.5	QP	300.0	232.00	HORIZONTAL
86.372745	14.40	11.2	40.0	25.6	QP	100.0	29.00	HORIZONTAL
109.699399	17.10	12.3	43.5	26.4	QP	300.0	83.00	HORIZONTAL
280.761523	18.50	13.6	46.0	27.5	QP	100.0	351.00	HORIZONTAL
433.928657	66.80	16.7	92.8	26.0	Peak	100.0	3.00	HORIZONTAL
928.076152	32.40	26.0	46.0	13.6	QP	100.0	74.00	HORIZONTAL

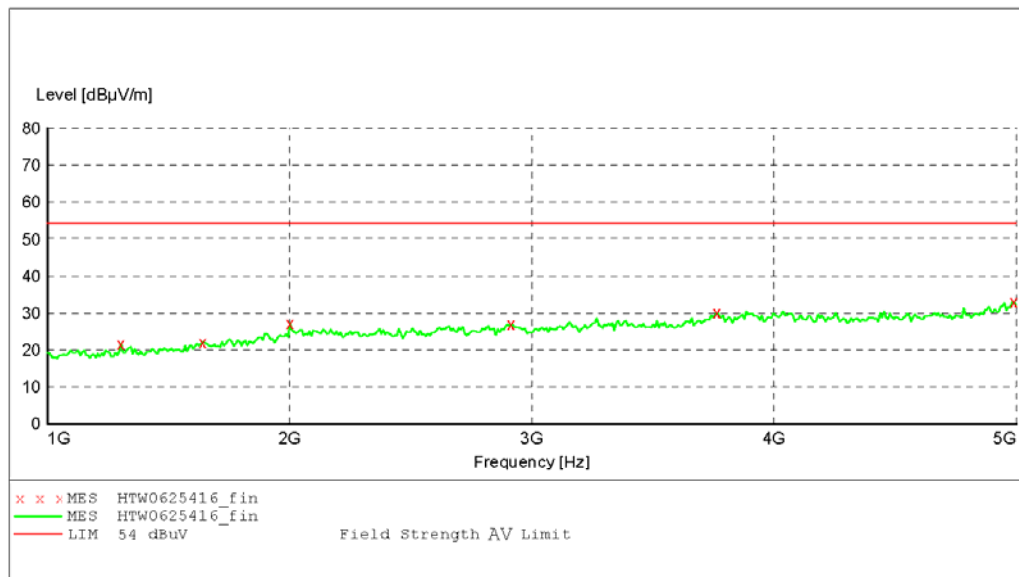
Frequency (MHz)	Field strength (dBμV/m)	AV Limit (dBμV/m)	Duty Cycle Correction Factor	Result (dB)	Margin (dB)	Det.
433.92	66.80	72.87	-17.4	49.40	23.47	AV
Note: Result = Field Strength + Duty Cycle Corrcetion Factor						

1GHz to 5GHz Test Data

EUT: Remote sensor for Butler M/N: PP-SIRMT1  
Manufacturer: Ansen  
Operating Condition: TX Mode  
Test Site: 3M CHAMBER  
Operator: Cary  
Test Specification: DC 3V  
Comment: Y-axis  
Start of Test: 6/25/2009 / 6:06:14PM

***SWEEP TABLE: "test (1G-18G) P"***

Short Description: EN 55022 Field Strength  
Start Stop Detector Meas. IF Transducer  
Frequency Frequency Time Bandw.  
1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906(2008)

***MEASUREMENT RESULT: "HTW0625416\_fin"***

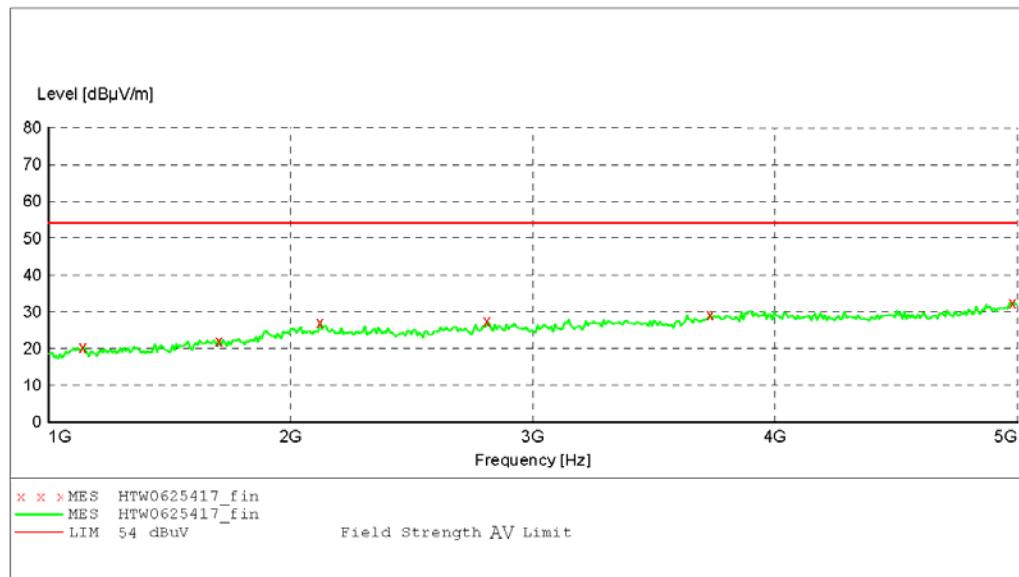
6/25/2009 6:07PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1304.609218	21.70	-2.8	54.0	32.3	Peak	100.0	194.00	HORIZONTAL
1641.282565	22.10	-2.3	54.0	31.9	Peak	100.0	36.00	HORIZONTAL
2002.004008	27.30	-1.1	54.0	26.7	Peak	100.0	218.00	HORIZONTAL
2915.831663	27.00	2.3	54.0	27.0	Peak	100.0	159.00	HORIZONTAL
3765.531062	30.10	5.5	54.0	23.9	Peak	100.0	354.00	HORIZONTAL
4991.983968	33.00	7.3	54.0	21.0	Peak	100.0	249.00	HORIZONTAL

EUT: Remote sensor for Butler M/N: PP-SIRMT1  
Manufacturer: Ansen  
Operating Condition: TX Mode  
Test Site: 3M CHAMBER  
Operator: Cary  
Test Specification: DC 3V  
Comment: Y-axis  
Start of Test: 6/25/2009 / 6:08:24PM

***SWEEP TABLE: "test (1G-18G) P"***

Short Description: EN 55022 Field Strength  
Start Stop Detector Meas. IF Transducer  
Frequency Frequency Time Bandw.  
1.0 GHz 18.0 GHz MaxPeak Coupled 1 MHz HF906(2008)

***MEASUREMENT RESULT: "HTW0625417\_fin"***

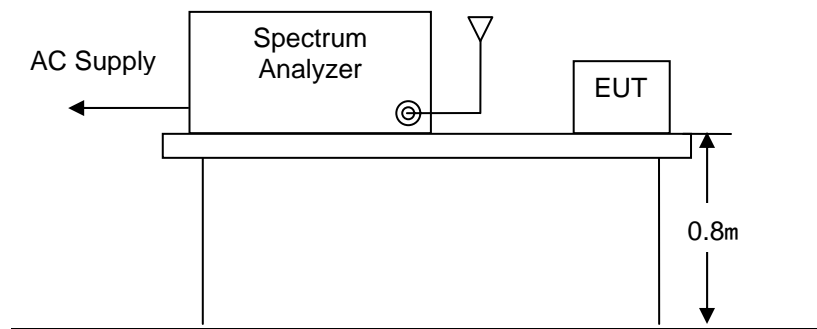
6/25/2009 6:10PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1144.288577	20.40	-4.0	54.0	33.6	Peak	100.0	298.00	VERTICAL
1705.410822	22.10	-1.7	54.0	31.9	Peak	100.0	292.00	VERTICAL
2122.244489	27.10	-0.4	54.0	26.9	Peak	100.0	179.00	VERTICAL
2811.623246	27.40	1.5	54.0	26.6	Peak	100.0	114.00	VERTICAL
3733.466934	29.20	5.4	54.0	24.8	Peak	100.0	317.00	VERTICAL
4983.967936	32.50	7.3	54.0	21.5	Peak	100.0	352.00	VERTICAL



## 4.2. Deactivation Time

### TEST CONFIGURATION



### TEST PROCEDURE

- 1 The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
- 2 The spectrum analyzer resolution bandwidth was set to 100kHz and video bandwidth was set to 300kHz to encompass all significant spectral components during the test. The spectrum analyzer was operated in linear scale and zero span mode after tuning to the transmitter carrier frequency.

### Limit

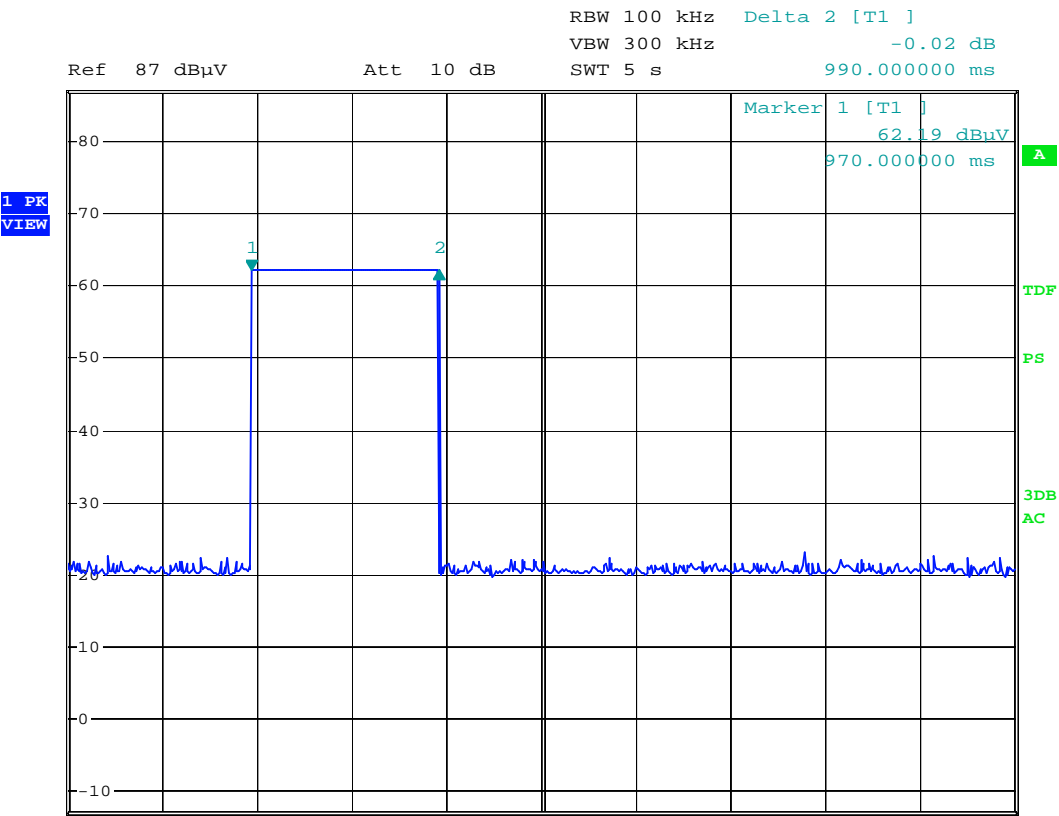
For periodic transmitter, according to FCC Part 15C § 15.231(e) and RSS-210 Annex A1.1.5

Item	Limit (second)
One transmission time	not greater than 1 second
Transmission period	at least 30 times the duration of the transmission but in no case less than 10 second

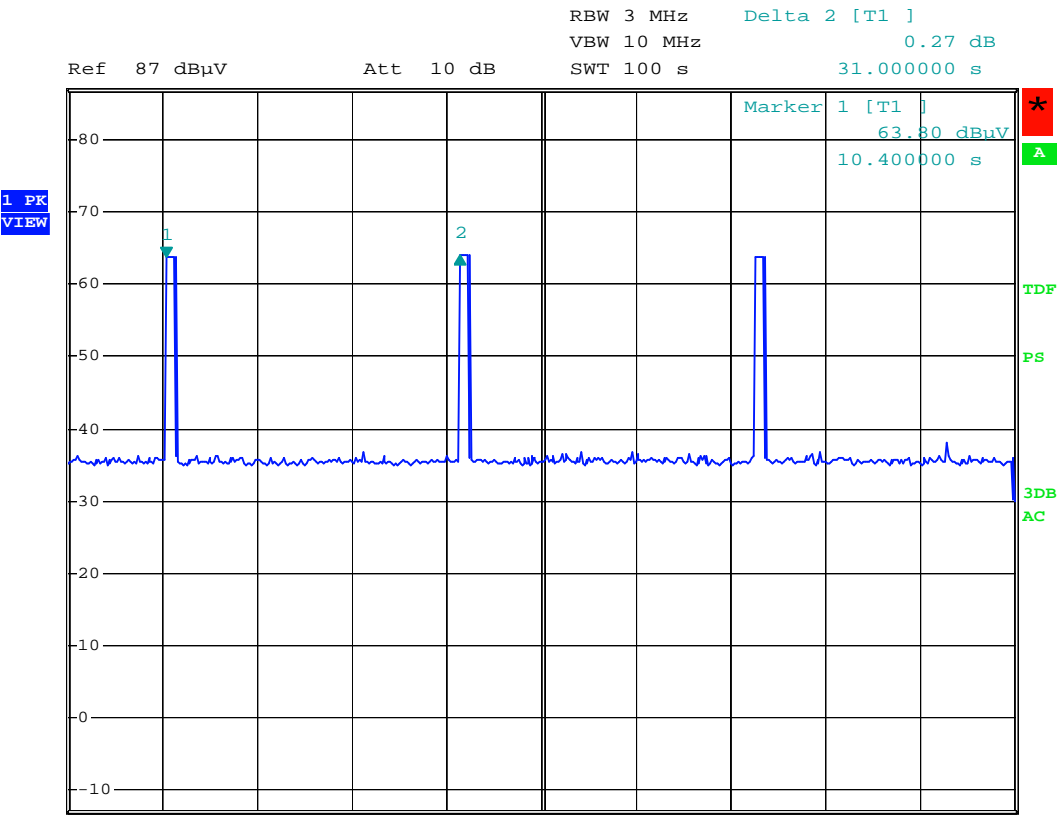
### TEST RESULTS

EUT statement: The transmitter was automatically activated, and there was a carrier frequency 433.92MHz:

Frequency (MHz)	One transmission time (second)	Transmission period (second)	Result
433.92	0.99	31.0	Pass



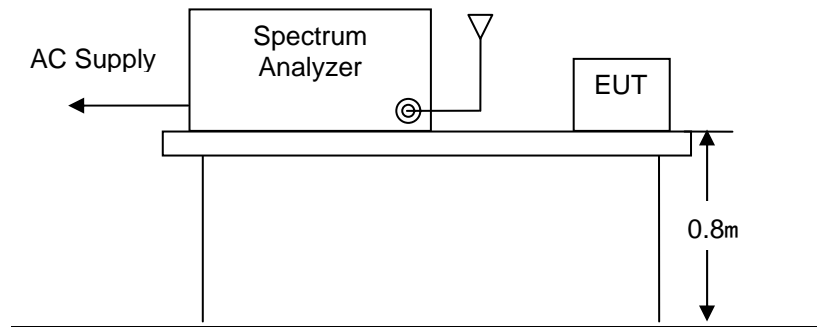
One transmission time = 0.99ms



Transmission period time = 31s

### 4.3. 20dB Bandwidth

#### TEST CONFIGURATION



#### TEST PROCEDURE

- 1 The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
- 2 The spectrum analyzer resolution bandwidth was set to 10kHz and video bandwidth was set to 30kHz to encompass all significant spectral components during the test. The detector was set to peak and hold mode to clearly observe the components.

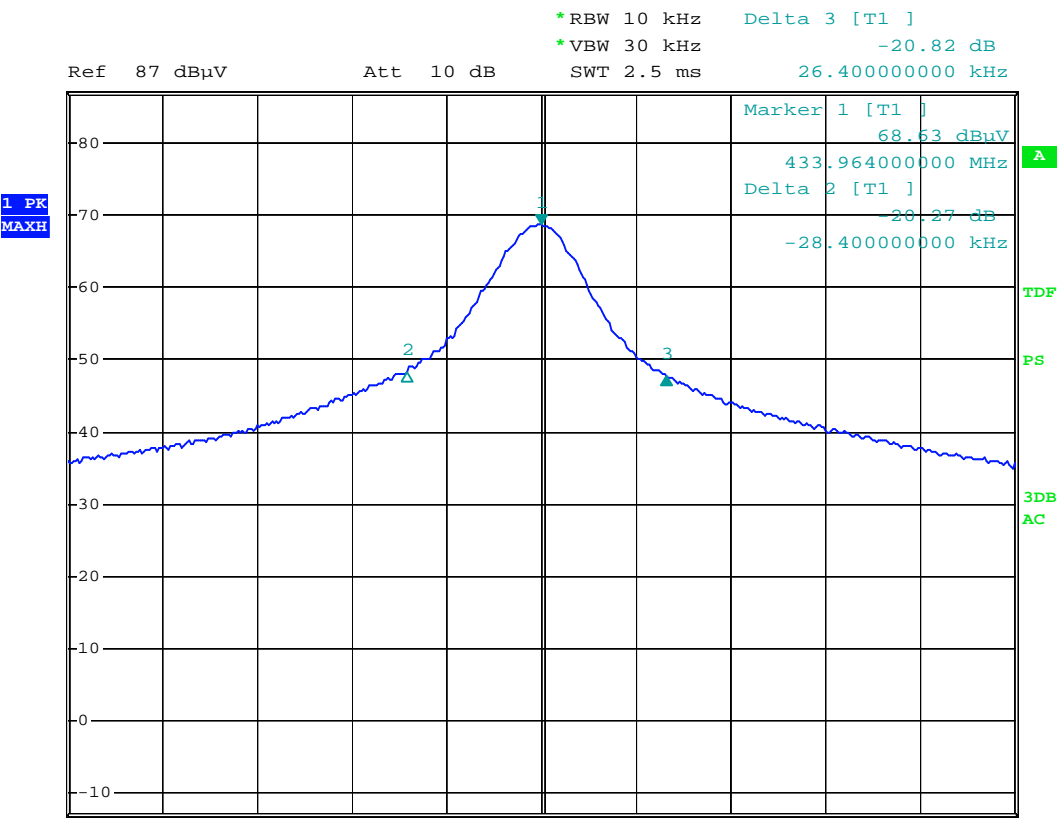
#### Limit

According to FCC Part 15C § 15.231(c)

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

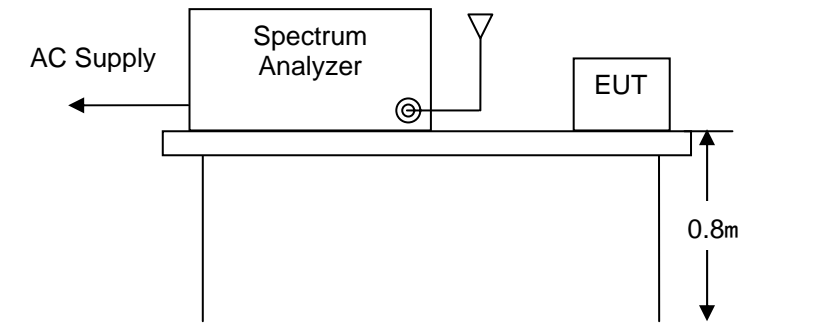
#### TEST RESULTS

Frequency (MHz)	Measurement Bandwidth (KHz)	Limit (kHz)	Result
433.92	54.0	1084.8	Pass



#### 4.4. 99% Occupied Bandwidth

##### TEST CONFIGURATION



##### TEST PROCEDURE

- 1 The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
- 2 The spectrum analyzer resolution bandwidth was set to 10kHz and video bandwidth was set to 30kHz to encompass all significant spectral components during the test. The detector was set to peak and hold mode to clearly observe the components.
- 3 Use spectrum analyzer mark function measured the 26dB bandwidth at the points.

##### Limit

According to RSS-210 Annex A1.1.3 and RSS-Gen section 4.6.1

For the purpose of Section A1.1, the 99% bandwidth shall be no wider than 0.25% of the centre frequency for devices operating between 70-900 MHz.

##### TEST RESULTS

Frequency (MHz)	Measurement Bandwidth (KHz)	Limit (kHz)	Result
433.92	106.0	1084.8	Pass

