

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT OF

**Product Name:** Brushless Dc Tubular Motor and Remote controller

**Brand Name:** San Hsin

**Model Name:** SS4006-R22(Receiver);  
SS4006-RC(Transmitter)

**Model Different:** N/A

**FCC ID:** YUYSS4006RC

**Report No.:** ER/2010/90002

**Issue Date:** Oct. 11, 2010

**Rule Part:** §15.231

**Prepared by:** SAN HSIN PLASTECH CO., LTD.

**NO. 17 Jian Guo E. RD., Tao Yuan City, Tao  
Yuan County 330, Taiwan, R.O.C.**

**Prepared by:** SGS Taiwan Ltd.

**Electronics & Communication Laboratory**

**No. 134, Wu Kung Rd., Wuku Industrial  
Zone, Taipei County, Taiwan.**



**Note:** This report shall not be reproduced except in full, without the written approval of SGS Taiwan Ltd. This document may be altered or revised by SGS Taiwan Ltd. personnel only, and shall be noted in the revision section of the document.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## VERIFICATION OF COMPLIANCE

**Applicant:** SAN HSIN PLASTECH CO., LTD.  
NO. 17 Jian Guo E. RD., Tao Yuan City, Tao Yuan County 330, Taiwan, R.O.C.

**Product Name:** Brushless Dc Tubular Motor and Remote controller

**Brand Name:** San Hsin

**FCC ID:** YUYSS4006RC

**Model No.:** SS4006-R22(Receiver);SS4006-RC(Transmitter)

**Model Difference:** N/A

**File Number:** ER/2010/90002

**Date of test:** Sep. 06, 2010 ~ Oct. 08, 2010

**Date of EUT Received:** Sep. 06, 2010

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.231.

The test results of this report relate only to the tested sample identified in this report.

**Test By:**



**Date:**

Oct. 11, 2010

*Brain Chang / Engineer*

**Prepared By:**

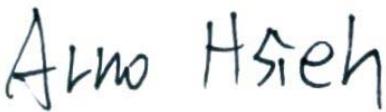


**Date:**

Oct. 11, 2010

*Gigi Yeh / Clerk*

**Approved By:**



**Date:**

Oct. 11, 2010

*Arno Hsieh / Asst. Supervisor*

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.



FCC ID: YUYSS4006RC

Report No: ER/2010/90002

Issue Date: Oct. 11, 2010

Page: 3 of 24

## Version

Version No.	Date	Description
00	Oct. 11, 2010	Initial creation of document

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

SGS Taiwan Ltd.

No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## Table of Contents

<b>1.</b>	<b>GENERAL INFORMATION .....</b>	<b>6</b>
1.1	PRODUCT DESCRIPTION .....	6
1.2	RELATED SUBMITTAL(S) / GRANT (S) .....	6
1.3	TEST METHODOLOGY.....	6
1.4	TEST FACILITY .....	7
<b>2.</b>	<b>SYSTEM TEST CONFIGURATION .....</b>	<b>8</b>
2.1	EUT CONFIGURATION.....	8
2.2	EUT EXERCISE .....	8
2.3	TEST PROCEDURE.....	8
2.4	LIMITATION .....	9
2.5	CONFIGURATION OF TESTED SYSTEM.....	11
<b>3.</b>	<b>SUMMARY OF TEST RESULTS .....</b>	<b>12</b>
<b>4.</b>	<b>DESCRIPTION OF TEST MODES .....</b>	<b>12</b>
<b>5.</b>	<b>CONDUCTED EMISSIONS TEST .....</b>	<b>13</b>
5.1	MEASUREMENT PROCEDURE: .....	13
5.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	13
5.3	MEASUREMENT EQUIPMENT USED: .....	13
5.4	MEASUREMENT RESULT: .....	13
<b>6.</b>	<b>RADIATED EMISSION TEST .....</b>	<b>14</b>
6.1	MEASUREMENT PROCEDURE.....	14
6.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	14
6.3	MEASUREMENT EQUIPMENT USED: .....	15
6.4	FIELD STRENGTH CALCULATION .....	15
6.5	MEASUREMENT RESULT .....	16
<b>7.</b>	<b>OCCUPIED BANDWIDTH.....</b>	<b>18</b>
7.1	MEASUREMENT PROCEDURE.....	18
7.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	18
7.3	MEASUREMENT EQUIPMENT USED: .....	18
7.4	MEASUREMENT RESULTS.....	18

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

<b>8.</b>	<b>DUTY CYCLE MEASUREMENT .....</b>	<b>20</b>
8.1	MEASUREMENT PROCEDURE.....	20
8.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	20
8.3	MEASUREMENT EQUIPMENT USED: .....	20
8.4	MEASUREMENT RESULTS:.....	20
<b>9.</b>	<b>RELEASE TIME MEASUREMENT: .....</b>	<b>23</b>
9.1	MEASUREMENT PROCEDURE.....	23
9.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) .....	23
9.3	MEASUREMENT EQUIPMENT USED: .....	23
9.4	MEASUREMENT RESULTS.....	23

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 1. GENERAL INFORMATION

### 1.1 Product Description

Product Name	Brushless Dc Tubular Motor and Remote controller
Brand Name	San Hsin
Model Name	SS4006-R22(Receiver);SS4006-RC(Transmitter)
Model Difference:	N/A
Power Supply	Tx: 12V *1 by battery

#### SRD 433.92MHz TX:

Operating Frequency	433.92 MHz
Transmit Power	< 80.8dBuV/m Max.
Modulation Technique	ASK
Number of Channels	1
Operating Mode	Point-to-Point

### 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **YUYSS4006RC** filing to comply with Section 15.231 of the FCC Part 15, Subpart C Rules.

### 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-4

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

## 1.5 Special Accessories

Not available for this EUT intended for grant.

## 1.6 Equipment Modifications

Not available for this EUT intended for grant.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 2. SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions (Not apply in the report)

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna. according to the requirements in Section 8 and 13 and Subclause 8.3.1.2 of ANSI C63.4-2003.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 2.4 Limitation

### (1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

Frequency range MHz	Limits dB (uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

**Note**

- 1.The lower limit shall apply at the transition frequencies
- 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## (2) Radiated Emission

According to 15.231(b), the field strength of emissions from Intentional Radiators operated under this section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental		Field Strength of Spurious	
	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)
40.66 - 40.70	67.04	2,250	47	225
70 - 130	61.94	1,250	41.9	125
130 - 174	* 61.94 - 71.48	* 1,250 - 3,750	* 41.9 - 51.48	* 125 to 375
174 - 260	71.48	3,750	51.48	375
260 - 470	* 71.48 - 81.94	* 3,750 - 12,500	* 51.48 - 54	* 375 to 1250
above 470	81.94	12,500	74	1250

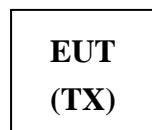
Remark:

1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of  $\xi$  15.205
4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of  $\xi$  15.205, then the general radiated emission limits in  $\xi$  15.209 apply.
5. For the band 130-174MHz, uV/m at 3meters =  $56.81818(F) - 6136.3636$ ;  
For the band 260-470MHz uV/m at 3meters =  $41.6667(F) - 7083.3333$ ;  
Where F is the frequency in MHz.
6.  $433.92\text{MHz limit} = 41.6667 * 433.92 - 7083.3333 = 10996.681 \text{ uV/m}$   
 $= 80.8\text{dBuV/m}$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 2.5 Configuration of Tested System

**Fig. 2-1 Configuration of Tested System**



**Table 2-1 Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	N/A					

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	N/A
§15.231	Radiated Emission	Compliant
§15.231(c)	20dB Bandwidth	Compliant
	Duty Cycle Test (Pulse Modulation)	N/A
§15.231(a)(1)	Release Time Measurement	Compliant

### 4. Description of test modes

The EUT has been tested under engineering test mode condition. and the EUT staying in continuous transmitting mode. The Frequency 433.92 MHz is chosen for testing.

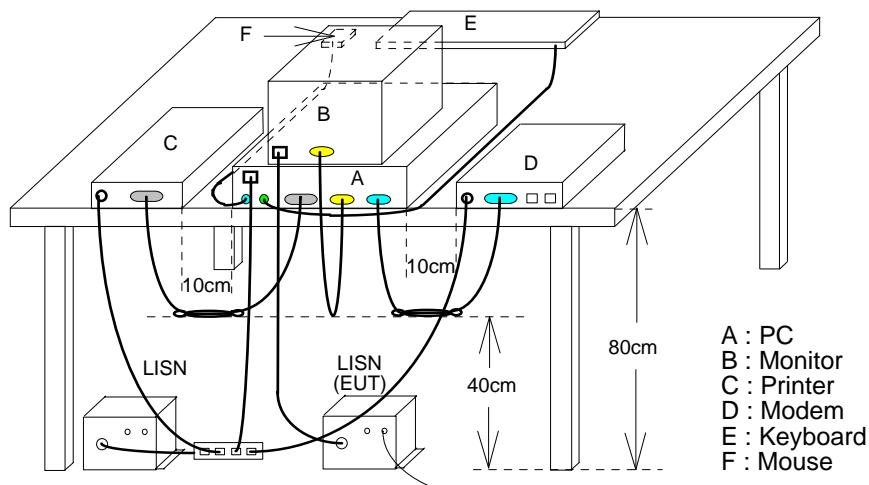
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 5. CONDUCTED EMISSIONS TEST (NOT APPLY IN THE REPORT)

### 5.1 Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

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



### 5.3 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCS30	828985/004	09/15/2010	09/14/2011
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2010	02/01/2011
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/02/2010	02/01/2011
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2009	11/27/2010

### 5.4 Measurement Result:

N/A..

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

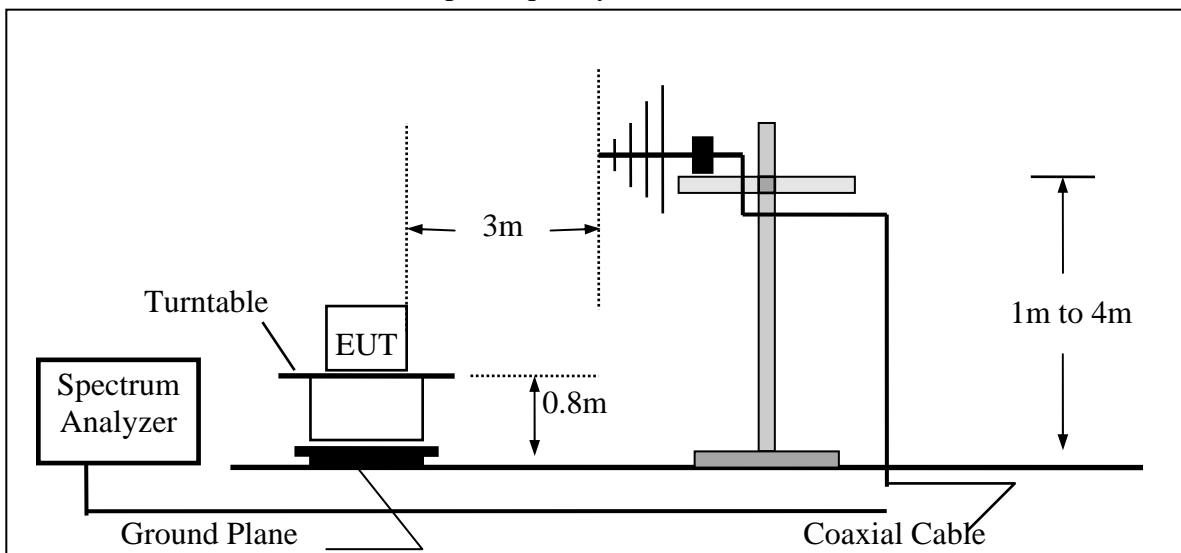
## 6. RADIATED EMISSION TEST

### 6.1 Measurement Procedure

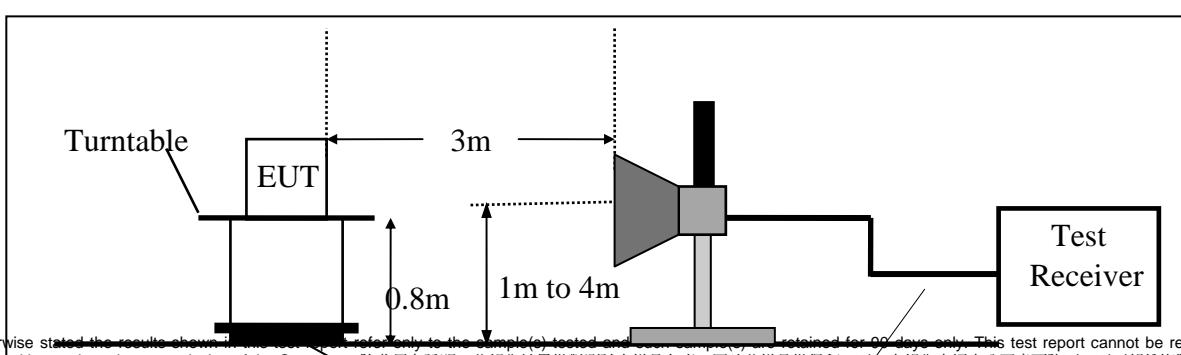
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

### 6.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



Unless otherwise stated, the results shown in this report are valid for a period of 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.html](http://www.sgs.com/terms_and_conditions.html)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

### 6.3 Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL	CAL DUE.
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2010	02/11/2011
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2009	11/18/2010
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	03/09/2009	03/08/2011
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2009	11/28/2010
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2010	01/04/2011
Radio Communication Analyzer	R & S	CMU200	111787	10/31/2008	10/30/2010
DC Block	Agilent	BLK-18	155452	07/05/2010	07/04/2011
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2010	01/04/2011
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2010	01/04/2011
3m Site	SGS	966 chamber	N/A	11/08/2010	11/09/2011

### 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:

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

Average Value = Peak Value + 20 Log (Ton/Tp) ..... Pulse Modulation

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 6.5 Measurement Result

Operation Mode: Transmitting Mode  
 Fundamental Frequency: 433.92 MHz  
 Temperature : 25 °C  
 Humidity : 65 %

Test Date: Oct. 06, 2010  
 Test By: Brain  
 Pol: Vertical

Freq. (MHz)	F (MHz)	Ant. /S	Pol. (H/V)	Peak	AV	Peak	AV	Peak	AV	Margin (dB)	
				Reading (dBuV)	Correct CF(dB)	Ant./CL (dBuV/m)	Level (dBuV/m)	Level (dBuV/m)	Limit (dBuV/m)		
433.92		F	V	92.67	- 8.95	-9.04	83.63	74.68	100.80	80.80	-6.12
868.08	S	V	V	59.41	- 8.95	-1.63	57.78	48.83	80.80	60.80	-11.97
1301.76	*S	V	V	62.73	- 8.95	-6.81	55.92	46.97	74.00	54.00	-7.03
1735.68	S	V	V	52.03	- 8.95	-4.75	47.28	38.33	74.00	54.00	-15.67
2169.60	S	V	V	49.90	- 8.95	-2.54	47.36	38.41	74.00	54.00	-15.59
2603.52	S	V	V	49.95	- 8.95	-0.6	49.35	40.40	74.00	54.00	-13.60
3037.44	S	V	V	39.28	- 8.95	0.56	39.84	30.89	74.00	54.00	-23.11
3471.36	S	V	V	47.09	- 8.95	1.97	49.06	40.11	74.00	54.00	-13.89
3905.28	*S	V	V	42.98	- 8.95	3.38	46.36	37.41	74.00	54.00	-16.59
4339.20	*S	V	V	38.83	- 8.95	4.79	43.62	34.67	74.00	54.00	-19.33
72.68	S	V	V	42.17	- 8.95	-16.62	25.55	16.60	80.80	60.80	-44.20
90.14	S	V	V	51.78	- 8.95	-17.62	34.16	25.21	80.80	60.80	-35.59
96.93	S	V	V	45.42	- 8.95	-17.16	28.26	19.31	80.80	60.80	-41.49
101.78	S	V	V	42.93	- 8.95	-16.87	26.06	17.11	80.80	60.80	-43.69

### Remark:

- (1) + F/S    F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (3) Dates of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) \* Denotes spurious frequency, which falls within the Restricted Bands specified in provision of  $\xi 15.205$ , then the general radiated emission limits in  $\xi 15.209$  apply.
- (5) Peak Setting: 30MHz – 1000MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 5GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

Operation Mode: Transmitting Mode  
 Fundamental Frequency: 433.92MHz  
 Temperature : 25 °C  
 Humidity : 65 %

Test Date: Oct. 06, 2010  
 Test By: Brain  
 Pol: Horizontal

Freq. (MHz)	F /S	Ant.Pol. (H/V)	Peak	AV	Peak	AV	Peak	AV	Margin (dB)	AV
			Reading (dB uV)	Correct CF(dB)	Ant./CL Level (dB uV/m)	Level (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)		
433.92	F	H	73.49	- 8.95	-9.04	64.45	55.50	100.80	80.80	-25.30
868.08	S	H	50.62	- 8.95	-2.96	47.66	38.71	80.80	60.80	-22.09
1301.76	*S	H	57.55	- 8.95	-6.81	50.74	41.79	74.00	54.00	-12.21
1735.68	S	H	51.91	- 8.95	-4.75	47.16	38.21	74.00	54.00	-15.79
2169.60	S	H	48.70	- 8.95	-2.54	46.16	37.21	74.00	54.00	-16.79
2603.52	S	H	42.23	- 6.58	-0.6	41.63	35.05	80.80	60.80	-25.75
3037.44	S	H	41.20	- 8.95	0.56	41.76	32.81	74.00	54.00	-21.19
3471.36	S	H	41.64	- 8.95	1.97	43.61	34.66	74.00	54.00	-19.34
3905.28	*S	H	39.87	- 8.95	3.38	43.25	34.30	74.00	54.00	-19.70
4339.20	*S	H	--	- 8.95	---	---	74.00	54.00	---	---
38.73	S	H	41.66	- 8.95	-13.84	27.82	18.87	80.80	60.80	-41.93
72.68	S	H	39.15	- 8.95	-16.62	22.53	13.58	80.80	60.80	-47.22
92.08	S	H	46.58	- 8.95	-17.38	29.20	20.25	80.80	60.80	-40.55
97.90	S	H	38.85	- 8.95	-17.11	21.74	12.79	80.80	60.80	-48.01

**Remark:**

- (1) + F/S     F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (3) Dates of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) \* Denotes spurious frequency, which falls within the Restricted Bands specified in provision of  $\xi$ 15.205, then the general radiated emission limits in  $\xi$  15.209 apply.
- (5) Peak Setting: 30MHz – 1000MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 5GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 7. 20DB OCCUPIED BANDWIDTH

### 7.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 10KHz, Span =500KHz.
4. Set SPA Max hold. Mark peak, -20dB.

### 7.2 Test SET-UP (Block Diagram of Configuration)

Same as 6.3 Radiated Emission Measurement.

### 7.3 Measurement Equipment Used:

Same as 6.3 Radiated Emission Measurement.

### 7.4 Measurement Results

Refer to attached data chart.

The center frequency **f<sub>c</sub> is 433.92MHz**, according to the Rules, section 15.231(C), the Bandwidth of Center Frequency at-20dB should be calculated as following:

$$433.92 \times 0.0025 = 1.0848(\text{MHz})$$

So, the Up/Lower frequencies limit should be specified as:

$$f_{(U)} = f_c + \Delta f/2 = 433.92 + 0.5424 = 434.46(\text{MHz})$$

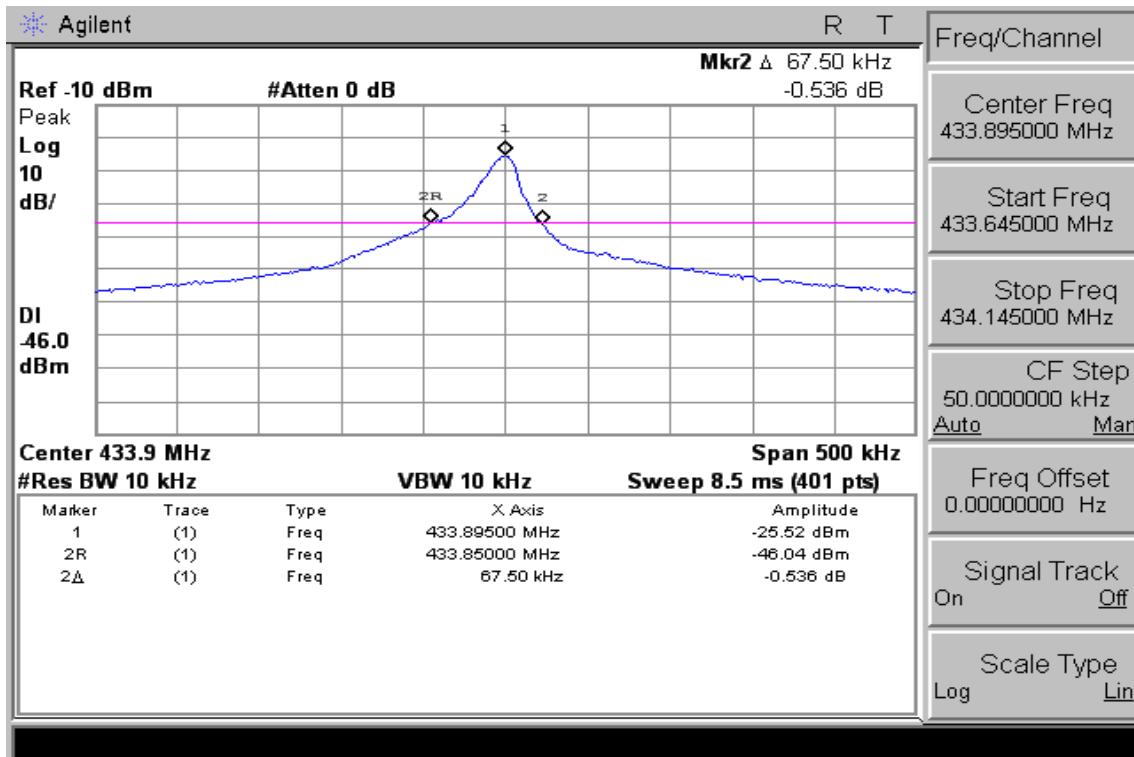
$$f_{(L)} = f_c - \Delta f/2 = 433.92 - 0.5424 = 433.377 (\text{MHz})$$

Measurement Result:

-20dB bandwidth = 67.50kHz which within allowed frequency range.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 20dB Band Width Test Data



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 8. DUTY CYCLE MEASUREMENT

### 8.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set ETU normal operating mode.
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 100KHz, Span =0 Hz. Adjacent sweep.
4. Set SPA View. Mark delta.

### 8.2 Test SET-UP (Block Diagram of Configuration)

Same as 6.3 Radiated Emission Measurement.

### 8.3 Measurement Equipment Used:

Same as 6.3 Radiated Emission Measurement.

### 8.4 Measurement Results:

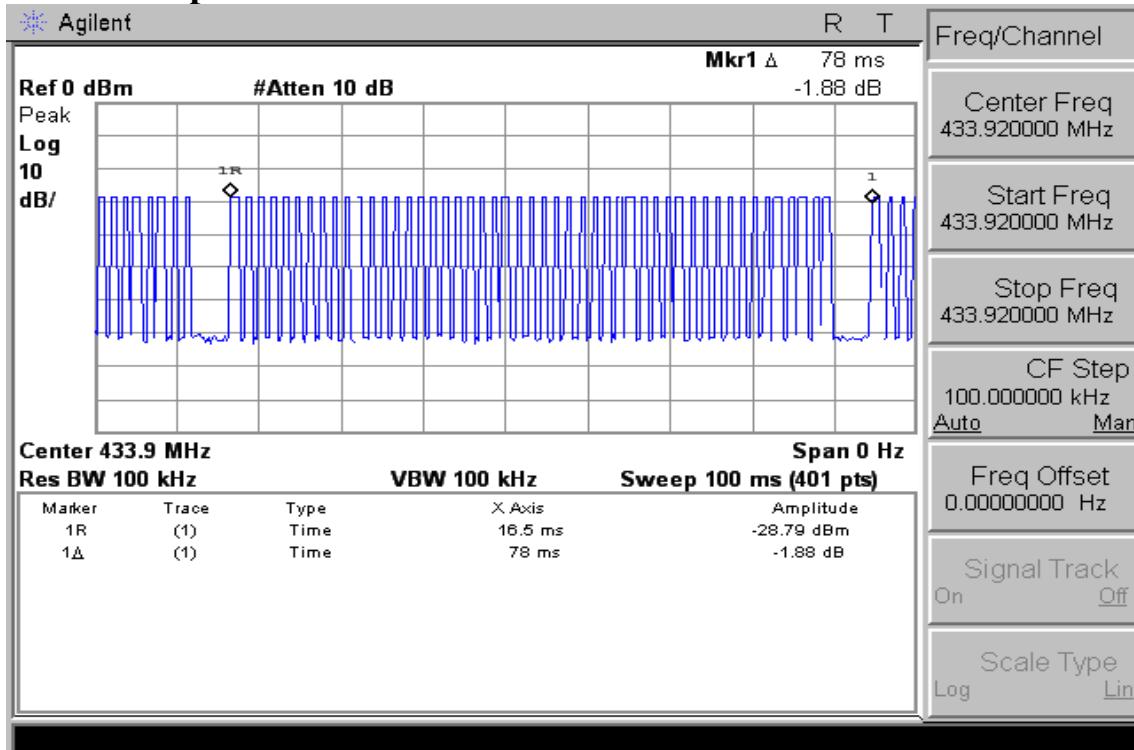
$$Ton = 0.975(ms)*7 + 0.525(ms)*40 = 27.825(ms)$$

$$Tp > 78(ms),$$

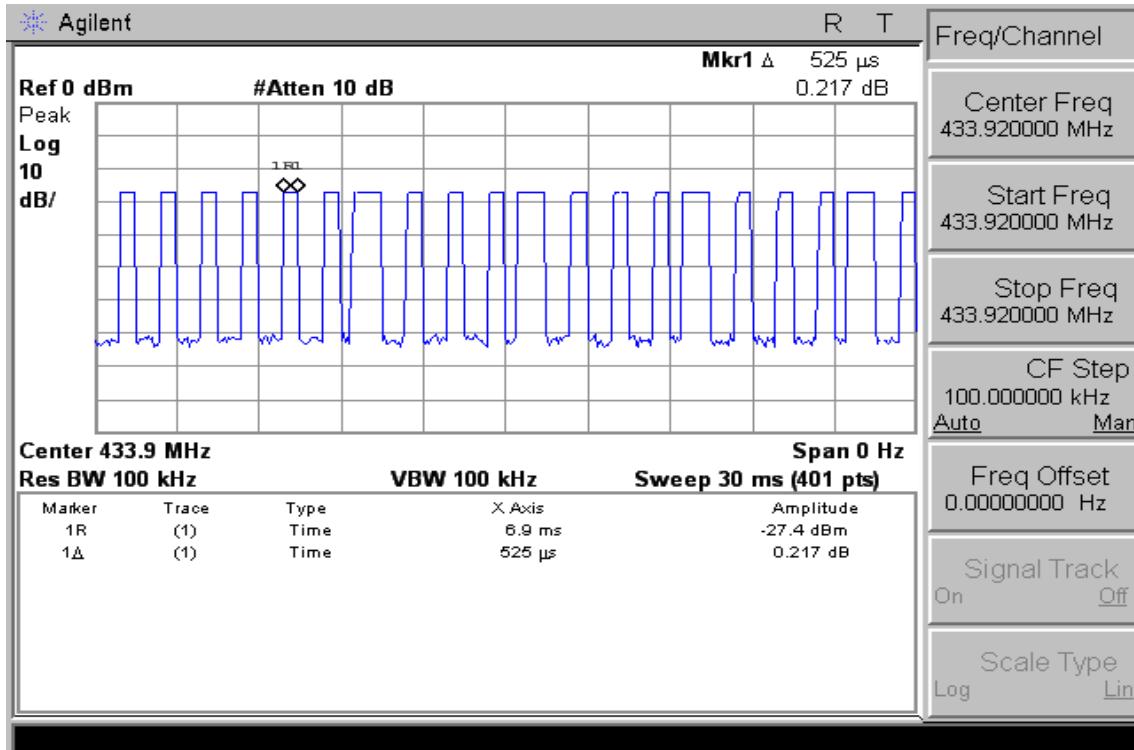
$$\begin{aligned} \text{Average Correction Factory} &= 20\log(Ton/Tp) = 20\log(27.825/78) \\ &= -8.95 \text{ dB} \end{aligned}$$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

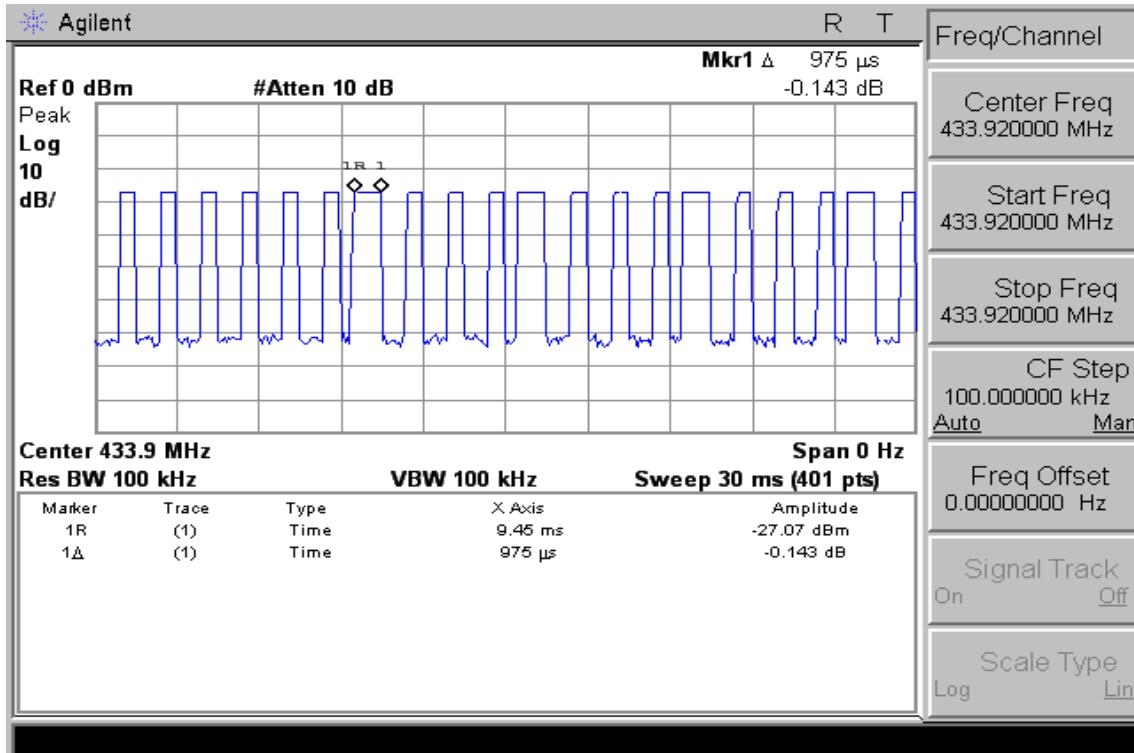
## Measurement: $T_p > 78 \text{ ms}$



TO 1



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs-on-site.com/authentication](http://www.sgs-on-site.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

**TO 2**

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

## 9. RELEASE TIME MEASUREMENT:

15.231 (a) (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

### 9.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 100 KHz, Span =0Hz. Sweep Time= 5s.
3. Set EUT as normal operation and press Transmitter bottom for 2 s,
4. Set SPA Max hold. Delta Mark.

### 9.2 Test SET-UP (Block Diagram of Configuration)

Same as 6.3 Radiated Emission Measurement.

### 9.3 Measurement Equipment Used:

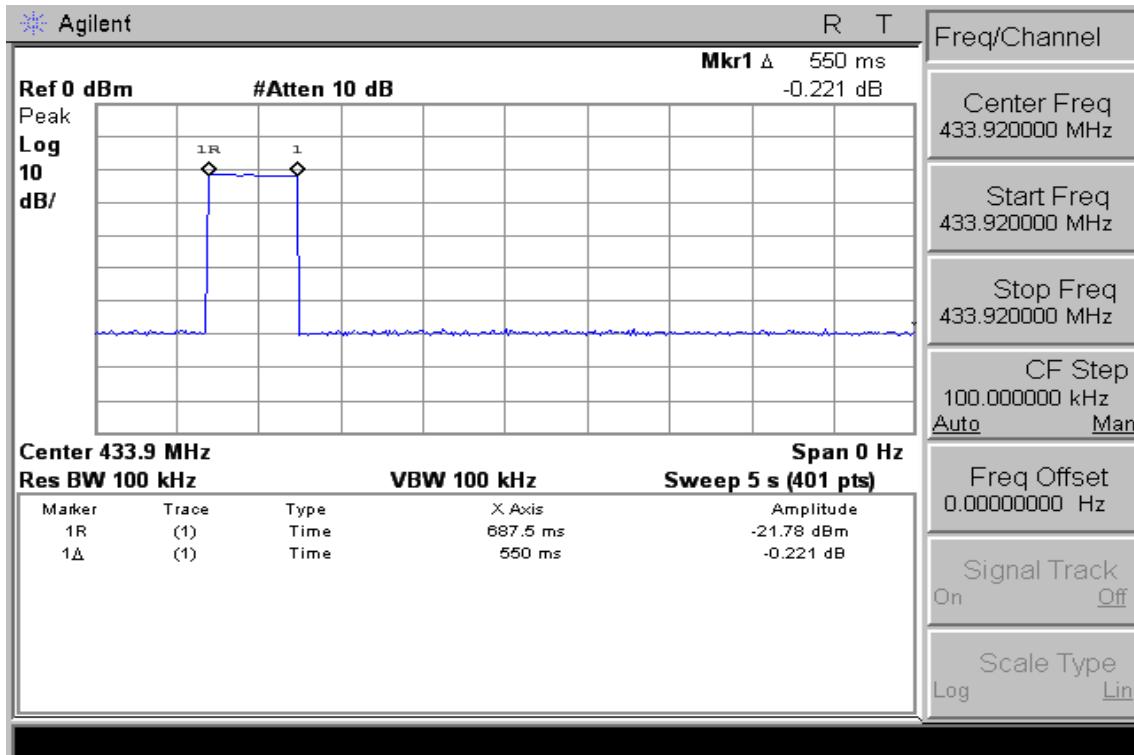
Same as 6.3 Radiated Emission Measurement.

### Measurement Results

The release time less than 5 s.

Refer to attached data chart.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。  
This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。 This document is issued by the Company subject to its General Conditions of Service ([www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm)) and Terms and Conditions for Electronic Documents ([www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm)). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein. Even if printed this electronic document is to be treated as an original within the meaning of UCP 600 article 20b. The authenticity of this document may be verified at [www.sgs onsite.com/authentication](http://www.sgs onsite.com/authentication). Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.