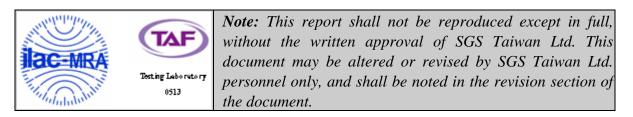


Report No: ER/2009/70080 Issue Date: Sep. 04, 2009 Page: 1 of 28

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT OF

Product Name:	Integrity Pendant
Brand:	MobileHelp
Model Name:	IGP-01
Model Different:	N/A
FCC ID:	VDQIGP-01
Report No.:	ER/2009/70080
Issue Date:	Sep. 04, 2009
Rule Part:	§15.231
Prepared For:	DAVISCOMMS (S) Pte. Ltd
	Blk 70 Ubi Crescent #01-07. Ubi Techpark. Singapore 408570
Prepared by:	SGS Taiwan Ltd.
	Electronics & Communication Laboratory
	No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei County, Taiwan.



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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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 Indusfrial 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 Member of SGS Group



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 2 of 28

VERIFICATION OF COMPLIANCE

Applicant:	DAVISCOMMS (S) Pte. Ltd
	Blk 70 Ubi Crescent #01-07. Ubi Techpark. Singapore 408570
Product Name:	Integrity Pendant
Brand / Marketing Name:	MobileHelp
FCC ID:	VDQIGP-01
Model No.:	IGP-01
Model Difference:	N/A
File Number:	ER/2009/70080
Date of test:	Jul. 31, 2009 ~ Sep. 03, 2009
Date of EUT Received:	Jul. 31, 2009

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:	Sim Chang	Date:	Sep. 04, 2009	
Prepared By:	Jim Chang / Supervisor Gigi Jeh	Date:	Sep. 04, 2009	
Approved By:	Gigi Yeh / Clerk Tihurt In Vincent Su / Manager	Date:	Sep. 04, 2009	

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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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 Indus<mark>i</mark>rial 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



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 3 of 28

Version

Version No.	Date	Description		
00 Sep. 04, 2009		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。

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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



Table of Contents

1.	GENERAL INFORMATION	6
1.1	PRODUCT DESCRIPTION	6
1.2	RELATED SUBMITTAL(S) / GRANT (S)	7
1.3	Test Methodology	7
1.4	TEST FACILITY	7
2.	SYSTEM TEST CONFIGURATION	8
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
3.	SUMMARY OF TEST RESULTS	12
4.	DESCRIPTION OF TEST MODES	12
5.	CONDUCTED EMISSIONS TEST	13
5.1	Measurement Procedure:	13
5.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
5.3	Measurement Equipment Used:	
5.4	Measurement Result:	13
6.	RADIATED EMISSION TEST	14
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	
7.	OCCUPIED BANDWIDTH	20
7.1	Measurement Procedure	22
7.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
7.3	Measurement Equipment Used:	22
7.4	Measurement Results	

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

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。

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 5 of 28

8.	DUTY CYCLE MEASUREMENT	24
8.1	Measurement Procedure	
8.2	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
8.3	MEASUREMENT EQUIPMENT USED:	
8.4	MEASUREMENT RESULTS:	
9.	RELEASE TIME MEASUREMENT:	
9. 9.1	RELEASE TIME MEASUREMENT:	
9.1	Measurement Procedure	

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。

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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 Indus<mark>i</mark>rial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號



1. GENERAL INFORMATION

1.1 Product Description

General:

Product Name:	Integrity Pendant
Brand Name:	MobileHelp
Model Name:	IGP-01
Model Difference:	N/A
Power Supply	3V from CR2032 Coin Cell battery*1

433.92MHz:

Frequency Range:	433.92 MHz
Channel number:	1 channels
Transmit Power	< 76.62dBuV/m (AVG)
Modulation type:	Pulse Modulation
Transmitting Time	Periodic \leq 5 seconds
Antenna Designation:	Non-User Replaceable (Fixed)

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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

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。



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 7 of 28

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: <u>VDQIGP-01</u> 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.

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. Electronics & Communication Laboratory 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.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory 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.

GS 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

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 (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms e-document.htm</u>). 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 <u>www.sgs.om/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 8 of 28

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.

f (886-2) 2298-0488

GS 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

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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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	Limits dB (uV)				
MHz	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.

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

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。

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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	Field Strength of		Field Strength of		
Frequency	Fundamental		Spurious		
(MHz)	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)	
40.66 - 40.70	67.04	2,250	40	100	
70 - 130	61.94	1,250	34	50	
130 - 174	* 61.94 - 71.48 * 1,250 - 3,750		* 34-43.5	* 50 to 150	
174 - 260	71.48	71.48 3,750		150	
260 - 470	* 71.48 - 81.94	* 3,750 - 12,500	* 43.5 - 54	* 150 to 500	
above 470	81.94	12,500	74	500	

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 ξ 15.205
- 4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 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 3 meters = 41.6667(F) - 7083.3333; Where F is the frequency in MHz.
- 6. 433.92MHz limit = 41.6667 * 433.92 7083.33333 = 10996.681 uV/m = 80.8 dBuV/m

<mark>S Taiwan Ltd.</mark>No.134, Wu Kung Road, Wuku Indus<mark>i</mark>rial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號 f (886-2) 2298-0488

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) and Terms and Conditions for Electronic Documents (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.sgsonsite.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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 11 of 28

2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

EUT	
(TX)	

Table 2-1 Equipment Used in Tested System

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

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

f (886-2) 2298-0488

SGS Taiwan Ltd.No.134, Wu Kung Road, Wuku Indus<mark>i</mark>rial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號

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。



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	Compliant
	Modulation)	
§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.

The X, Y and Z-axis of EUT were pre-test; X and Y mode were the worse case and report.

This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

GGS 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

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。

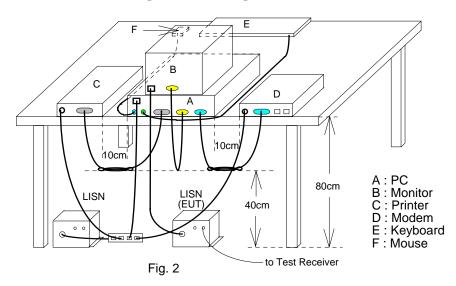


5. CONDUCTED EMISSIONS TEST (NOT APPLY IN THE REPORT)

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	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2008	09/15/2009				
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2009	02/01/2010				
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/02/2009	02/01/2010				
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2008	10/29/2009				

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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

GS Taiwan Ltd.No.134, Wu Kung Road, Wuku Indus<mark>i</mark>rial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號



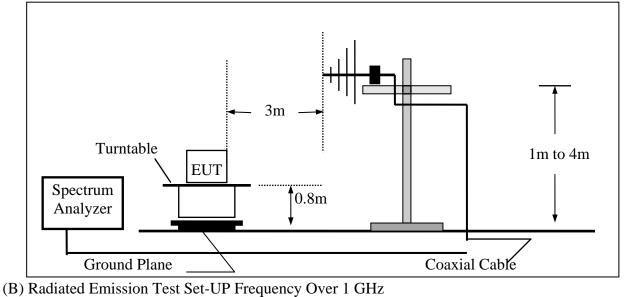
6. RADIATED EMISSION TEST

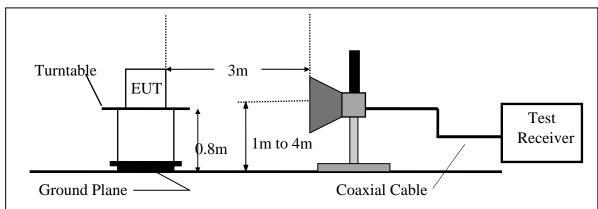
6.1 Measurement Procedure

- 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)







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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

is Taiwan Ltd.No.134, Wu Kung Road, Wuku Indus<mark>i</mark>rial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號



966 Chamber									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
ТҮРЕ		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2009	02/11/2010				
Loop antenna	MESSTEC	FLA30	03/10086	07/08/2009	07/07/2011				
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2008	11/14/2009				
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-673	05/09/2008	05/08/2010				
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2008	11/29/2009				
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2009	01/04/2010				
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	01/05/2009	01/04/2010				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2009	01/04/2010				
3m Site	SGS	966 chamber	N/A	11/08/2008	11/09/2009				

6.3 Measurement Equipment Used:

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	

This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

GGS Taiwan Ltd.No.134, Wu Kung Road, Wuku Indus<mark>r</mark>ial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號

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。



6.5 Measurement Result

Operation Mo Fundamental I Temperature :			nitting N 2 MHz X				Test Date Test By: Pol:	e: Aug. 3 Jim Vertica	1, 2009 d	
Humidity :		65 %								
		Peak	AV		Peak	AV	Peak	AV		
Freq. F	Ant.Pol	Reading	Correct	Ant./CL	Level	Level	Limit	Limit	Margin	
(MHz) /S	(H/V)	(dBuV)	dB	CF(dB)	(dBuV/m) (dB uV/m)	(dB uV/m)	(dBuV/m)	(dB)	_
433.92 F	V	78.55	- 5.54	-9.01	69.54	64.00	100.80	80.80	-16.80	AV
867.84 S	V	48.56	- 5.54	- 1.63	46.93	41.39	80.80	60.80	-19.41	AV
1301.76 *S	V	58.63	- 5.54	- 6.81	51.82	46.28	74.00	54.00	-7.72	AV
1735.68 S	V		- 5.54	- 4.75			80.80	60.80		
2169.60 S	V		- 5.54	- 2.54			80.80	60.80		
2603.52 S	V	41.81	- 5.54	- 0.60	41.21	35.67	80.80	60.80	-25.13	AV
3037.44 S	V	47.49	- 5.54	0.56	48.05	42.51	80.80	60.80	-18.29	AV
3471.36 S	V	50.24	- 5.54	1.97	52.21	46.67	80.80	60.80	-14.13	AV
3905.28 *S	V	39.07	- 5.54	3.38	42.45	36.91	74.00	54.00	-17.09	AV
4339.20 *S	V		- 5.54	4.79			74.00	54.00		

- (1) + F/S F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) EUT Orthogonal Axes: X denotes Laid on Table; Y denotes Vertical Stand.
- (3) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (4) 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.
- (5) * Denotes spurious frequency, which falls within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.
- (6) 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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 17 of 28

Operation Mode:	Transmitting Mode	Test Date:	Aug. 31, 2009
Fundamental Frequency:	433.92MHz X mode	Test By:	Jim
Temperature :	25	Pol:	Horizontal
Humidity :	65 %		

			Peak	AV		Peak	AV	Peak	AV		
Freq.	F	Ant.Pol.	Reading	Correct	Ant./CL	Level	Level	Limit	Limit	Margin	
(MHz)	/ S	(H/V)	(dBuV)	dB	CF(dB)	(dBuV/m)	(dB u V/m)	(dBuV/m)	(dB uV/m)	(dB)	_
433.92	F	Н	91.17	- 5.54	-9.01	82.16	76.62	100.80	80.80	-4.18	AV
867.84	S	Н	59.21	- 5.54	- 1.63	57.58	52.04	80.80	60.80	-8.76	AV
007.04	3	п	39.21	- 5.54	- 1.05	57.50	52.04	00.00	00.80	-0.70	Αv
1301.76	*S	Н	65.31	- 5.54	- 6.81	58.50	52.96	74.00	54.00	-1.04	ΑV
1735.68	S	Н		- 5.54	- 4.75			80.80	60.80		
2169.60	S	Н		- 5.54	- 2.54			80.80	60.80		
2603.52	S	Н	48.13	- 5.54	- 0.60	47.53	41.99	80.80	60.80	-18.81	AV
3037.44	S	Н	46.70	- 5.54	0.56	47.26	41.72	80.80	60.80	-19.08	AV
3471.36	S	Н	59.47	- 5.54	1.97	61.44	55.90	80.80	60.80	-4.90	AV
3905.28	*S	Н	43.53	- 5.54	3.38	46.91	41.37	74.00	54.00	-12.63	AV
4339.20	*S	Н	38.13	- 5.54	4.79	42.92	37.38	74.00	54.00	-16.62	AV

- (1) + F/S F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) EUT Orthogonal Axes: X denotes Laid on Table; Y denotes Vertical Stand.
- (3) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (4) 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.
- (5) * Denotes spurious frequency, which falls within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.
- (6) 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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 18 of 28

Operation Mode:	Transmitting Mode	Test Date:	Aug. 31, 2009
Fundamental Frequency:	433.92 MHz Y mode	Test By:	Jim
Temperature :	25	Pol:	Vertical
Humidity :	65 %		

			Pe ak	AV		Pe ak	AV	Peak	AV		
Freq.	F	Ant.Pol.	Reading	Correct	Ant./CL	Level	Level	Limit	Limit	Margin	
(MHz)	/ S	(H/V)	(dBuV)	dB	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB uV/m)	(dB)	_
433.92	F	V	88.88	- 5.54	-9.01	79.87	74.33	100.80	80.80	-6.47	AV
867.84	S	V	53.44	- 5.54	- 1.63	51.81	46.27	80.80	60.80	-14.53	ΑV
1301.76	*S	V	65.16	- 5.54	- 6.81	58.35	52.81	74.00	54.00	-1.19	AV
1735.68	S	V	40.61	- 5.54	- 4.75	35.86	30.32	80.80	60.80	-30.48	AV
2169.60	S	V	38.14	- 5.54	- 2.54	35.60	30.06	80.80	60.80	-30.74	AV
2603.52	S	V	47.02	- 5.54	- 0.60	46.42	40.88	80.80	60.80	-19.92	AV
3037.44	S	V	40.69	- 5.54	0.56	41.25	35.71	80.80	60.80	-25.09	AV
3471.36	S	V	52.81	- 5.54	1.97	54.78	49.24	80.80	60.80	-11.56	AV
3905.28	*S	V	42.41	- 5.54	3.38	45.79	40.25	74.00	54.00	-13.75	AV
4339.20	*S	V	37.24	- 5.54	4.79	42.03	36.49	74.00	54.00	-17.51	AV

- (1) + F/S F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) EUT Orthogonal Axes: X denotes Laid on Table; Y denotes Vertical Stand.
- (3) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (4) 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.
- (5) * Denotes spurious frequency, which falls within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.
- (6) 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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 19 of 28

Operation Mode:	Transmitting Mode	Test Date:	Aug. 31, 2009
Fundamental Frequency:	433.92MHz Y mode	Test By:	Jim
Temperature :	25	Pol:	Horizontal
Humidity :	65 %		

			Peak	AV		Peak	AV	Peak	AV		
Freq.	F	Ant.Pol.	Reading	Correct	Ant./CL	Level	Level	Limit	Limit	Margin	
(MHz)	/ S	(H/V)	(dBuV)	dB	CF(dB)	(dBuV/m)	(dBuV/m)	(dB uV/m)	(dB uV/m)	(dB)	_
433.92	F	Н	85.04	- 5.54	-9.01	76.03	70.49	100.80	80.80	-10.31	AV
0.67.04	G			5 5 4	1.62	5610	50 50	0.0.00	<u>(0.00</u>	10.00	
867.84	S	Н	57.75	- 5.54	- 1.63	56.12	50.58	80.80	60.80	-10.22	ΑV
1301.76	*S	Н	64.26	- 5.54	- 6.81	57.45	51.91	74.00	54.00	-2.09	AV
1735.68	S	Н		- 5.54	- 4.75			80.80	60.80		
2169.60	S	Н	38.46	- 5.54	- 2.54	35.92	30.38	80.80	60.80	-30.42	AV
2603.52	S	Н	46.52	- 5.54	- 0.60	45.92	40.38	80.80	60.80	-20.42	AV
3037.44	S	Н	43.32	- 5.54	0.56	43.88	38.34	80.80	60.80	-22.46	AV
3471.36	S	Н	58.74	- 5.54	1.97	60.71	55.17	80.80	60.80	-5.63	AV
3905.28	*S	Н	41.26	- 5.54	3.38	44.64	39.10	74.00	54.00	-14.90	AV
4339.20	*S	Н		- 5.54	4.79			74.00	54.00		

- (1) + F/S F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) EUT Orthogonal Axes: X denotes Laid on Table; Y denotes Vertical Stand.
- (3) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (4) 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.
- (5) * Denotes spurious frequency, which falls within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.
- (6) 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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 20 of 28

Operation Mode:	Transmitting Mode	Test Date:	Aug. 31, 2009
Fundamental Frequency:	433.92 MHz Z mode	Test By:	Jim
Temperature :	25	Pol:	Vertical
Humidity :	65 %		

			Peak	AV		Peak	AV	Peak	AV		
Freq.	F	Ant.Pol.	Reading	Correct	Ant./CL	Level	Level	Limit	Limit	Margin	
(MHz)	/S	(H/V)	(dBuV)	dB	CF(dB)	(dBuV/m)	(dBuV/m)	(dB uV/m)	(dB uV/m)	(dB)	_
433.92	F	V	87.77	- 5.54	-9.01	78.76	73.22	100.80	80.80	-7.58	AV
867.84	S	v	57.11	- 5.54	- 1.63	55.48	49.94	80.80	60.80	-10.86	AV
1301.76	*S	V	64.18	- 5.54	- 6.81	57.37	51.83	74.00	54.00	-2.17	AV
1735.68	S	V		- 5.54	- 4.75			80.80	60.80		
2169.60	S	V	38.60	- 5.54	- 2.54	36.06	30.52	80.80	60.80	-30.28	AV
2603.52	S	V	46.72	- 5.54	- 0.60	46.12	40.58	80.80	60.80	-20.22	AV
3037.44	S	V	44.22	- 5.54	0.56	44.78	39.24	80.80	60.80	-21.56	AV
3471.36	S	V	59.45	- 5.54	1.97	61.42	55.88	80.80	60.80	-4.92	AV
3905.28	*S	V	42.83	- 5.54	3.38	46.21	40.67	74.00	54.00	-13.33	AV
4339.20	*S	V	36.83	- 5.54	4.79	41.62	36.08	74.00	54.00	-17.92	AV

- (1) + F/S F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) EUT Orthogonal Axes: X denotes Laid on Table; Y&Z denotes Vertical Stand.
- (3) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (4) 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.
- (5) * Denotes spurious frequency, which falls within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.
- (6) 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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 21 of 28

Operation Mode:	Transmitting Mode	Test Date:	Aug. 31, 2009
Fundamental Frequency:	433.92MHz Z mode	Test By:	Jim
Temperature :	25	Pol:	Horizontal
Humidity :	65 %		

			Peak	AV		Peak	AV	Peak	AV		
Freq.	F	Ant.Pol.	Reading	Correct	Ant./CL	Level	Level	Limit	Limit	Margin	
(MHz)	/ S	(H/V)	(dBuV)	dB	CF(dB)	(dBuV/m)) (dB uV/m)	(dBuV/m)	(dB uV/m)	(dB)	_
433.92	F	Н	86.90	- 5.54	-9.01	77.89	72.35	100.80	80.80	-8.45	AV
867.84	S	Н	53.23	- 5.54	- 1.63	51.60	46.06	80.80	60.80	-14.74	AV
1301.76	*S	Н	62.16	- 5.54	- 6.81	55.35	49.81	74.00	54.00	-4.19	AV
1735.68	S	Н	41.62	- 5.54	- 4.75	36.87	31.33	80.80	60.80	-29.47	AV
2169.60	S	Н	44.35	- 5.54	- 2.54	41.81	36.27	80.80	60.80	-24.53	AV
2603.52	S	Н	46.72	- 5.54	- 0.60	46.12	40.58	80.80	60.80	-20.22	AV
3037.44	S	Н	43.38	- 5.54	0.56	43.94	38.40	80.80	60.80	-22.40	AV
3471.36	S	Η	49.11	- 5.54	1.97	51.08	45.54	80.80	60.80	-15.26	AV
3905.28	*S	Н	43.66	- 5.54	3.38	47.04	41.50	74.00	54.00	-12.50	AV
4339.20	*S	Н	35.89	- 5.54	4.79	40.68	35.14	74.00	54.00	-18.86	AV

- (1) + F/S F: denotes Fundamental Frequency; S: denotes Spurious Frequency
- (2) EUT Orthogonal Axes: X denotes Laid on Table; Y&Z denotes Vertical Stand.
- (3) Measuring frequencies from 30 MHz to the 10th harmonic of fundamental frequency of 433.92 MHz.
- (4) 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.
- (5) * Denotes spurious frequency, which falls within the Restricted Bands specified in provision of ξ 15.205, then the general radiated emission limits in ξ 15.209 apply.
- (6) 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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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. 20DBOCCUPIED 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 =100KHz.
- 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_c 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 X 0.0025 = 1.0848(MHz)

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

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

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

Measurement Result:

-20dB bandwidth = 43.4kHz within allowed frequency range.

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

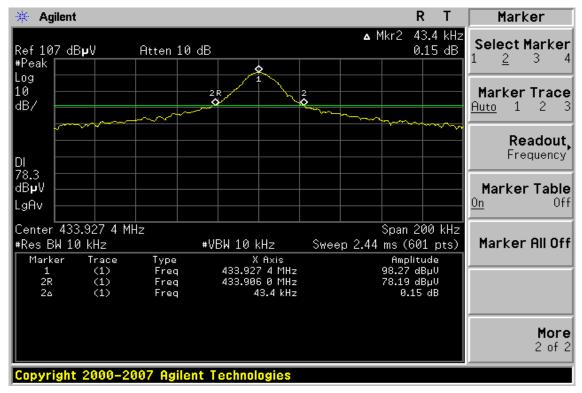
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 23 of 28

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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

GS 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



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 24 of 28

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 = 1.767(ms)*21 + 0.883(ms)*16 = 51.235(ms)Tp=97 (ms), Average Correction Factory = 20log (Ton/Tp) = 20log (51.235/97) =-5.54 dB

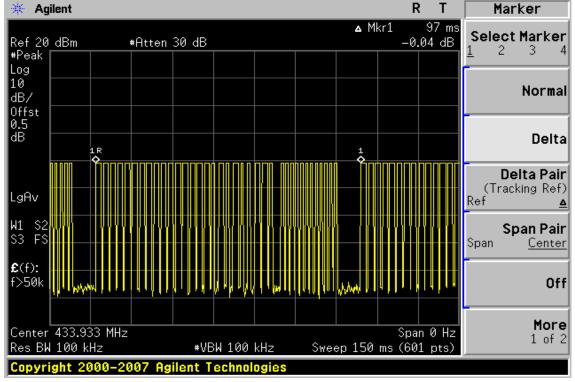
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不 可部份複製

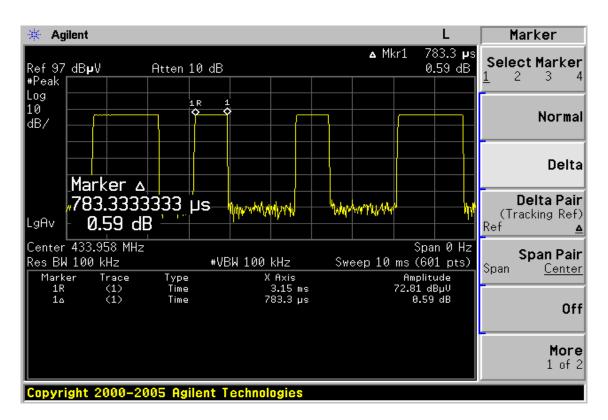
This document is issued by the Company subject to its General Conditions of Service (www.sgs.com/terms and conditions.htm) and Terms and Conditions for Electronic Documents (www.sgs.com/terms_e-document.htm). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues 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.sgsonsite.com/authentication. Any 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 25 of 28

Ton Measurement: Tp >97ms





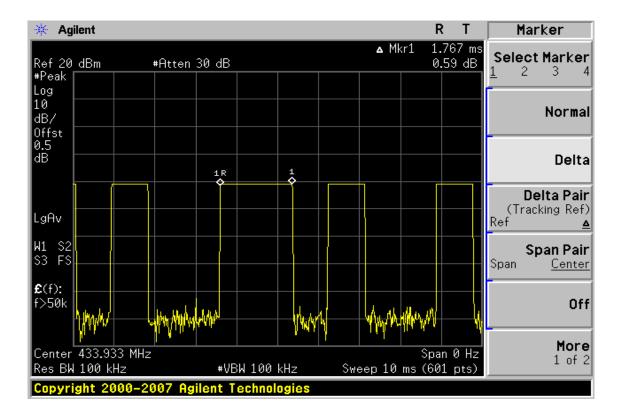
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. This test report cannot be reproduced, except in full, without prior written permission of the Company. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

is Taiwan Ltd.No.134, Wu Kung Road, Wuku Indus<mark>i</mark>rial Zone, Taipei County, Taiwan /台北縣五股工業區五工路**134**號



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 26 of 28



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。

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

GS 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



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 and release immediately.
- 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

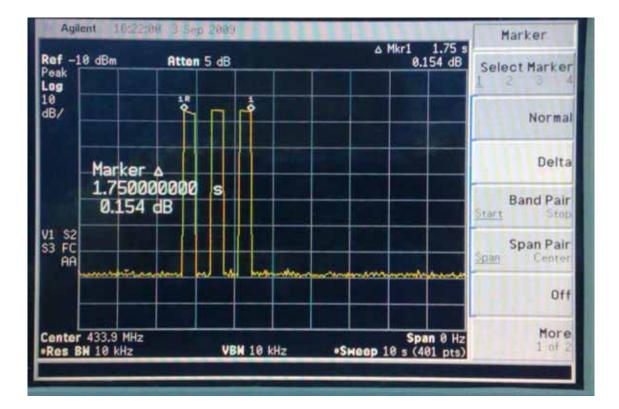
The release time less than 5 s. Refer to attached data chart.

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 (<u>www.sgs.com/terms_and_conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.



Report No: ER/2009/70080 Issue Date: Sep. 04, 200 Page: 28 of 28



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。

¹¹Init/ft&8^o This document is issued by the Company subject to its General Conditions of Service (<u>www.sgs.com/terms and conditions.htm</u>) and Terms and Conditions for Electronic Documents (<u>www.sgs.com/terms_e-document.htm</u>). 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 <u>www.sgsonsite.com/authentication</u>. 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.

GS 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