



SGS-CSTC Standards  
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Report No.: 04.05.1056EF-1  
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FCC ID: QNISMM-112-R

## FCC Test Report

**Application No.:** 04.05.1056EF-1  
**Applicant:** International SMC( HK ) Ltd  
**FCC ID:** QNISMM-112-R  
**Equipment Under Test (EUT):**  
EUT Name: Uni-direction Dynamic VHF Wireless Headset Microphone  
Item No.: SMM-112  
Serial No.: Not supplied by client  
**Standards:** FCC PART15 SUBPART B:2003  
**Date of Receipt:** 12 May 2004  
**Date of Test:** 20 May to 25 June 2004  
**Date of Issue:** 05 July 2004

<b>Test Result :</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Kent Hsu  
Laboratory Manager  
SGS-CSTC Co., Ltd.

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the SGS PRODUCT CERTIFICATION MARK. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All test results in this report can be traceable to National or International Standards.



## 2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2003	ANSI C63.4:2001	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2003	ANSI C63.4:2001	Class B	PASS



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## **4 General Information**

### **4.1 Client Information**

Applicant: International SMC( HK ) Ltd  
Address of Applicant: Suite 1210, Ocean Centre, 5 Canton Road, TST, Kowloon,  
HongKong

### **4.2 General Description of E.U.T.**

EUT Name: Uni-direction Dynamic VHF Wireless Headset Microphone  
Item No.: SMM-112 (Receiver Part)  
Serial No.: Not supplied by client

### **4.3 Details of E.U.T.**

Power Supply: 9Vdc (1 x 6F22 Manganin-Zincic alkaline battery) for Receiver

### **4.4 Description of Support Units**

The EUT has been tested with a receiver for 171.905MHz wireless microphone.

### **4.5 Standards Applicable for Testing**

The standard used was FCC PART 15, SUBPART B, CLASS B (2003)

### **4.6 Test Location**

All tests were performed at: -  
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Safety & EMC Laboratory,  
1/F, Building No. 1, Agriculture Machinery Materials Company Warehouse Ltd., Wushan  
Road Shipai, Tianhe District, Guangzhou, China. P.C. 510630.

Tel: +86 20 3848 1001 Fax: +86 20 3848 1006

No tests were sub-contracted.

#### 4.7 Test Facility

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

- **NVLAP – Lab Code: 200611-0**  
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0. Effective through December 31, 2004.
- **ACA**  
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **VCCI**  
The 3m Semi-anechoic chamber and Shielded Room (11.5m x 4m x 4m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1599 and C-1706 respectively.  
Date of Registration: February 28, 2003. Valid until May 30, 2005
- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**  
Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAL – LAB Code: L0141**  
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAL/AC01: 2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of Testing Laboratories.
- **FCC – Registration No.: 282399**  
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorised test laboratory for the DoC process.  
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAL/AC01: 2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of Testing Laboratories.
- **Industry Canada (IC)**  
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5169.

#### 4.8 Deviation from Standards

None.

#### 4.9 Abnormalities from Standard Conditions

None.



## 5 Equipments Used during Test

### Conducted Emission Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Shielding Room	Frankonia	12 x 4 x 4 m <sup>3</sup>	EMC0103	N/A	N/A
2	LISN	Schaffner Chase	MNZ050D11	1421	05-11-2003	04-11-2004
3	EMI Test Receiver	Rohde & Schwarz	ESCS30	100086	10-12-2003	09-12-2004
4	Coaxial Cable	SGS	2m	EMC0107	02-06-2004	01-06-2005

### Radiated Emission Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi- Anechoic Chamber	Frankonia	N/A	N/A	16-02-2004	15-02-2005
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	N/A	16-02-2004	15-02-2005
3	EMI Test Software	Rohde & Schwarz	ES-K1	N/A	N/A	N/A
4	Coaxial cable	SGS	N/A	N/A	05-12-2003	04-12-2004
5	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	18-01-2004	17-01-2005
6	Horn Antenna	Rohde & Schwarz	HF906	100095	02-04-2004	01-04-2005
7	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	23-12-2003	22-12-2004
8	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	31-05-2004	30-05-2005
9	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	26-01-2004	25-01-2005

### General Equipments

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Temperature, Humidity & Barometer	Oregon Scientific	BA-888	EMC0001 to EMC0004	25-07-2003	24-07-2004
2	DMM	Fluke	73	70681569 or 70671122	23-07-2003	22-07-2004



## 6 Test Results

### 6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement: FCC Part15 B  
Test Method: ANSI C63.4  
Test Date: 02 July 2004  
Frequency Range: 150KHz to 30MHz  
Class / Severity: Class B  
Detector: Peak for pre-scan (9kHz Resolution Bandwidth)  
Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

#### 6.1.1 E.U.T. Operation

Operating Environment:  
Temperature: 24.0 °C Humidity: 60% RH Atmospheric Pressure: 1012 Mbar  
EUT Operation: Test in on mode, connected an audio amplifier.

### 6.1.2 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

The following Quasi-Peak and Average measurements were performed on the EUT on 23 June 2004:

Live Line:

Frequency	Receiver QP Level	Limit	Margin	Receiver AV Level	Limit	Margin
(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)
0.186	38.0	64.2	26.2	6.8	54.2	47.4
0.208	36.6	63.3	26.7	5.7	53.3	47.6
0.366	35.8	58.6	22.8	4.0	48.6	44.6
0.456	38.9	56.8	17.9	8.5	46.8	38.3
0.532	35.6	56.0	20.4	5.4	46.0	40.6
0.582	33.6	56.0	22.4	4.2	46.0	41.8

Neutral Line:

Frequency	Receiver QP Level	Limit	Margin	Receiver AV Level	Limit	Margin
(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)
0.186	36.7	64.2	27.5	7.7	54.2	46.5
0.208	34.9	63.3	28.4	5.3	53.3	48.0
0.366	37.4	58.6	21.2	4.8	48.6	43.8
0.456	39.1	56.8	17.7	9.7	46.8	37.1
0.532	36.4	56.0	19.6	5.4	46.0	40.6
0.582	32.1	56.0	23.9	4.2	46.0	41.8



## 6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	FCC Part15 B
Test Method:	ANSI C63.4
Test Date:	02 July 2004
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB $\mu$ V/m between 30MHz & 88MHz 43.5 dB $\mu$ V/m between 88MHz & 216MHz 46.0 dB $\mu$ V/m between 216MHz & 960MHz 54.0 dB $\mu$ V/m above 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit

### 6.2.1 E.U.T. Operation

Operating Environment:					
Temperature:	26.0 °C	Humidity:	59 % RH	Atmospheric Pressure:	1010 mbar
EUT Operation: Test in on mode, connected an audio amplifier..					

## 6.2.2 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. The EUT was measured by Bilog antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT on 02 July 2004:

Vertical:

Frequency	Receiver QP Level	Limit	Margin
(MHz)	(dBuV)	(dBuV)	(dB)
53.745	35.3	40.0	4.7
161.235	30.6	43.5	12.9
214.975	32.8	43.5	10.7
322.465	23.6	46.0	22.4
483.700	31.5	46.0	14.5
537.445	26.8	46.0	19.2

Horizontal:

Frequency	Receiver QP Level	Limit	Margin
(MHz)	(dBuV)	(dBuV)	(dB)
53.745	34.0	40.0	6.0
161.235	28.5	43.5	15.0
214.975	39.0	43.5	4.5
322.465	32.5	46.0	13.5
483.700	30.8	46.0	15.2
537.445	32.0	46.0	14.0