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Report No.: 03.07.1285EF
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FCC ID: RELWS-007

FCC Test Report

Application No.: 03.07.1285E

Applicant: Taizhou Jiaojiang Wansheng Electronic Co., Ltd.

Equipment Under Test (EUT):

EUT Name: RF Modulator

Item No.: WS-007, WS-077, WS-777, WS-009, WS-099, WS-999, RF007, TV-326,
PI-326, RF-007, AN-CONVINT, SV-RF-008. ♣

FCC ID: RELWS-007



Please refer to section 2 of this report for details.

Standards: FCC PART 15 SUBPART B

Date of Receipt: 24 July 2003

Date of Test: 24 July 2003

Date of Issue: 25 July 2003

Test Result :	PASS*
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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.
This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2002	ANSI 63.4 : 2002	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2002	ANSI 63.4 : 2002	Class B	PASS

Remark:

Model numbers: WS-007, WS-077, WS-777, WS-009, WS-099, WS-999, RF007, TV-326, PI-326, RF-007, AN-CONVINT, SV-RF-008.

They are referring the same product with sample pcb layout and component with only difference in the outer appearance.



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4 General Information

4.1 Client Information

Applicant: Taizhou Jiaojiang Wansheng Electronic Co., Ltd.
Address of Applicant: Jiepai industrial park, Taizhou Economic Development Zone, Zhejiang, China.

4.2 General Description of E.U.T.

EUT Name: RF Modulator
Item No.: WS-007, WS-077, WS-777, WS-009, WS-099, WS-999, RF007, TV-326, PI-326, RF-007, AN-CONVINT, SV-RF-008 ♣
Serial No.: Not supplied by client
♣ Please refer to section 2 of this report for details.

4.3 Details of E.U.T.

Power Supply: 120V AC 60Hz
Power Cord: 1.8m x 2 wires unscreened AC cable
Signal Cable: 1.0m screened 75ohm RF output cable (to TV)
1.0m screened 75ohm RF input cable with 75ohm terminal (to Antenna input port)
1.0m x 3 wires screened A/V cable to PS One.
1.0m screened S-terminal cable (to S-terminal input port).

4.4 Description of Support Units

The EUT has been tested with a Television set and a PS One.

Description	Manufacturer	Model No.	Attached Cable
Television Set	TCL	1460A	1.8m x 2 wires unscreened AC cable
PS One	SONY	SCPH102	1.8m x 2 wires unscreened DC cabel (from AC/DC adaptor).

4.5 Standards Applicable for Testing

The customer requested FCC tests for a digital camera.
The standard used was FCC PART 15, SUBPART B, CLASS B (2002)

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 February 2, 2003.
- **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-FINKO**
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, SGS-CSTC is an authorized test laboratory for the DoC process.

4.8 Deviation from Standards

None.

4.9 Abnormalities from Standard Conditions

None.

5 Equipment Used during Test

Conducted Emission Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due date
1	CE Variac	GZ Debao Factory	TS/DGC ₂ -5	N/A	N/A	N/A
2	LISN	SCHAFFNER CHASE	MNZ050D11	1421	06-09-2002	05-09-2003
3	Shielding Room	Frankonia	12 x 4 x 4 m ³	N/A	N/A	N/A
4	EMI Receiver	ROHDE & SCHWARZ	ESCS30	100086	18-11-2002	17-11-2003
5	Coaxial Cable	SGS	2m	N/A	02-06-2003	01-06-2004

Radiated Emission Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due date
1	3m Semi- Anechoic Chamber	Frankonia	N/A	N/A	05-11-2002	04-11-2003
2	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	02-12-2003	01-12-2003
3	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100085	18-11-2002	17-11-2003
4	EMI Test Software	ROHDE & SCHWARZ	ES-K1	N/A	N/A	N/A
5	Coaxial cable	SGS	N/A	N/A	05-11-2002	04-11-2003

General Equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due date
1	Temperature, Humidity & Barometer	OREGON SCIENTIFIC	BA-888	EMC0001 to EMC0004	26-07-2002	25-07-2003
2	DMM	FLUKE	73	70681569 or 70671122	09-08-2002	08-08-2003

6 Test Results

6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement: FCC Part15 B
Test Method: Based on ANSI 63.4
Test Date: 24 July 2003
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: 58% RH Atmospheric Pressure: 1008 Mbar

EUT Operation: Pre-test was performed in on mode on channel 3 and channel 4, compliance test was performed at channel 4 as no worse case was found.

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 24 July 2003:

Freq. (MHz)	Line	Trans. (dB)	QP Level (dBuV)	Limit (dBuV)	Margin (dB)	AV Level (dBuV)	Limit (dBuV)	Margin (dB)
0.169	Live	1.8	38.7	65.0	26.3	13.8	55.0	41.2
0.893	Live	0.5	21.9	56.0	34.1	15.4	46.0	30.6
3.950	Live	0.5	30.9	56.0	25.1	24.1	46.0	21.9
4.443	Live	0.5	40.3	56.0	15.7	37.2	46.0	8.8
5.366	Live	0.5	28.8	60.0	31.2	22.7	50.0	27.3
14.874	Live	0.6	35.8	60.0	24.2	30.0	50.0	20.0
0.183	Neutral	1.6	39.3	64.3	25.0	19.1	54.3	35.2
0.700	Neutral	0.6	25.9	56.0	30.1	14.5	46.0	31.5
2.082	Neutral	0.5	26.6	56.0	29.4	7.5	46.0	38.5
4.433	Neutral	0.5	23.2	56.0	32.8	9.9	46.0	36.1
9.922	Neutral	0.6	27.2	60.0	32.8	12.3	50.0	37.7
14.365	Neutral	0.6	26.2	60.0	33.8	8.7	50.0	41.3

Transducer = Insertion Loss of LISN + Cable Loss.

6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	FCC Part15 B
Test Method:	Based on ANSI 63.4
Test Date:	24 July 2003
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz 54.0 dB μ 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: 24.0 °C Humidity: 58% RH Atmospheric Pressure: 1008 mbar

EUT Operation: Test the EUT in On mode on channel 3 and channel 4.

6.2.2 Measurement Data

An initial pre-scan was performed in peak detection mode. Quasi-Peak was performed at the frequencies with maximized peak emission were detected.

The following quasi-peak measurements were performed on the EUT on 24 July 2003:

Channel 3

Frequency (MHz)	Antenna Polarization	Transducer (dB/m)	Receiver QP Reading (dBuV)	Emission Level (dBuV/m)	Limit dBuV/m)	Margin (dB)	Antenna Height (m)	Turntable Angle (°)
67.730	Vertical	10.6	17.7	28.3	40.0	11.7	1.00	187
107.563	Vertical	12.8	17.6	30.4	43.5	13.1	1.00	159
203.200	Vertical	14.1	19.0	33.1	43.5	10.4	1.00	180
237.070	Vertical	14.3	12.3	26.6	46.0	19.4	1.00	165
406.405	Vertical	19.1	15.1	34.2	46.0	11.8	1.00	157
711.218	Vertical	24.2	10.6	34.8	46.0	11.2	1.00	169
77.143	Horizontal	9.5	12.8	22.3	40.0	17.7	2.00	120
130.625	Horizontal	15.4	7.4	22.8	43.5	20.7	2.30	85
173.013	Horizontal	12.4	12.9	25.3	43.5	18.2	3.16	198
203.2	Horizontal	14.2	10.5	24.7	43.5	18.8	1.81	166
474.148	Horizontal	20.1	9.8	29.9	46.0	16.1	2.40	162
846.690	Horizontal	24.4	17.1	41.5	46.0	4.5	1.08	180

1. All readings are Quasi-Peak values.

2. Transducer = Antenna Factor + Cable Loss.

3. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

Channel 4

Frequency (MHz)	Antenna Polarization	Transducer (dB/m)	Receiver QP Reading (dBuV)	Emission Level (dBuV/m)	Limit dBuV/m)	Margin (dB)	Antenna Height (m)	Turntable Angle (°)
67.730	Vertical	10.6	18.0	28.6	40.0	11.4	1.00	181
107.563	Vertical	12.8	17.6	30.4	43.5	13.1	1.00	159
203.198	Vertical	14.1	18.7	32.8	43.5	10.7	1.00	186
338.678	Vertical	16.9	18.5	35.4	46.0	10.6	1.00	203
406.408	Vertical	19.1	16.7	35.8	46.0	10.2	1.00	169
711.218	Vertical	24.1	12.7	36.8	46.0	9.2	1.00	165
32.206	Horizontal	22.1	-3.2	18.9	40.0	21.1	2.00	0
203.200	Horizontal	14.2	11.6	25.8	43.5	17.7	2.68	175
237.063	Horizontal	14.8	13.0	27.8	46.0	18.2	1.68	186
474.145	Horizontal	20.1	6.7	26.8	46.0	19.2	1.84	213
570.621	Horizontal	22.1	-0.4	21.7	46.0	24.3	2.00	0
846.683	Horizontal	24.4	15.4	39.8	46.0	6.2	1.35	158

1. All readings are Quasi-Peak values.

2. Transducer = Antenna Factor + Cable Loss.

3. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.