SGS-CSTC Standards Technical Services Ltd.

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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

FCC TEST REPORT

Application No. : 03.09.1648E

Applicant : Ningbo Sanow Electronics Co.,Ltd.

FCC ID : RJX93FMT07

Fundamental Frequency : 106.7MHz, 106.9 MHz, 107.1 MHz, 107.3 MHz, 107.5 MHz , 107.7 MHz, 107.9 MHz

Equipment under Test (EUT):

Name : FM Transmitter

Model : FMT-7

Standards : FCC PART 15, SUBPART C : 2002

Date of Receipt : 10 September 2003

Date of Test : 21 to 22 September 2003

Date of Issue : 08 October 2003

Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

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

2 Contents

3 General Information

3.1 Client Information

Applicant: Ningbo Sanow Electronics Co.,Ltd.

Address of Applicant: Luotuo Industrial Park ,Zhenhai District Ningbo , China.

3.2 Details of E.U.T.

Product Name: FM Transmitter

Model: FMT-7

Power Supply: 12V DC (1 x Rechargeable Battery)

Power Cord: N/A-

3.3 Description of Support Units

The EUT was tested as an independent unit: a FM Stereo Transmitter which can operate on from 106.7MHz to 107.9MHz by changing the position of the frequency select switch. Test with a Sony CD Player as the sound source for the transmitter.

3.4 Test Location

All tests were performed at:-

SGS-CSTC Standards Technical Services 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

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3.5 Other Information Requested by the Customer

None.

3.6 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: 2000611-0. 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 Test Results

4.1 Test Instruments

Test Equipment	Manufacturer	Model	Asset No.	Cal. Due Date
Temperature, Humidity & Barometer	Oregon Scientific	BA-888	EMC0003	30-06-2004
3m Semi- Anechoic Chamber	Frankonia	N/A	EMC0501	04-11-2003
EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	EMC0506	17-11-2003
Bilog Type Antenna	Schaffner Chase	CBL6143	EMC0519	01-12-2003
Coaxial cable	SGS	N/A	EMC0514	30-06-2004

4.2 E.U.T. Operation

Operating Environment:

Temperature: 24.0 °C
Humidity: 56 % RH
Atmospheric Pressure: 1012 mbar

EUT Operation:

Test the EUT in transmitting mode with a Sony CD Player as the sound source. Pre-test in the fundamental frequency at: 106.7MHz, 106.9 MHz, 107.1 MHz, 107.3 MHz, 107.5 MHz , 107.7 MHz, 107.9 MHz.
Complicance test in the fundamental frequency at: 106.7MHz, 107.3 MHz & 107.9 MHz since the results almost same and no worst case be found.

4.3 Test Procedure & Measurement Data

4.3.1 Radiated Emissions

Test Requirement:	FCC Part15 C
Test Method:	Based on FCC Part15 C Section 15.239
Test Date:	21 September 2003
Measurement Distance:	3m (Semi-Anechoic Chamber)
Requirements:	Carrier frequency will not exceed 48.0dBuV/m at 3m. Out of band emissions shall not exceed: 40.0 dBμV/m between 30MHz & 88MHz 43.5 dBμV/m between 88MHz & 216MHz 46.0 dBμV/m between 216MHz & 960MHz 54.0 dBμV/m above 960MHz
Detector:	Peak Scan (120kHz resolution bandwidth for 30MHz to 1000MHz 1MHz resolution bandwidth for 1000MHz to 1300MHz)

Test Procedure: The procedure uesd was ANSI Standard C63.4-2000. The receive was scanned from 30MHz to 1300MHz.When an emission was found,the table was roated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes.The worst case emissions were reported.

The following measurements were performed on the EUT on 21 September 2003:

1.Test the EUT in transmitting mode. (Fundamental frequency at: 106.710MHz)

Intentional emission

Test Frequency (MHz)	Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
106.710	44.1	46.2	68.0	23.9	21.8

Test Frequency (MHz)	Average (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
106.710	43.2	44.9	48.0	4.8	3.1

Other emissions

Test Frequency (MHz)	Quasi-Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
213.420	32.0	40.2	43.5	11.5	3.3
320.130	24.9	26.5	46.0	21.1	19.5
426.840	31.2	32.0	46.0	14.8	14.0
533.550	24.5	23.5	46.0	21.5	22.5
640.260	21.8	23.1	46.0	24.2	22.9
746.970	23.6	26.8	46.0	22.4	19.2
853.680	27.2	27.8	46.0	18.8	18.2
960.390	28.4	28.5	46.0	17.6	17.5
1067.100	32.2	32.3	54.0	21.8	21.7

Test Results: The unit does meet the FCC Part 15 C requirements.

2.Test the EUT in transmitting mode. (Fundamental frequency at: 107.310MHz)

Intentional emission

Test Frequency (MHz)	Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
107.310	43.8	46.0	68.0	24.2	22.0

Test Frequency (MHz)	Average (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
107.310	41.9	44.2	48.0	6.1	3.8

Other emissions

Test Frequency (MHz)	Quasi-Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
214.620	35.9	39.6	43.5	7.6	3.9
321.930	26.5	26.6	46.0	19.5	19.4
429.240	31.5	31.8	46.0	14.5	14.2
536.550	24.1	22.6	46.0	21.9	23.4
643.860	23.0	24.6	46.0	23.0	21.4
751.170	26.3	24.0	46.0	19.7	22.0
858.480	28.6	26.5	46.0	17.4	19.5
965.790	28.0	27.2	46.0	18.0	18.8
1073.100	33.4	31.6	54.0	20.6	22.4

Test Results: The unit does meet the FCC Part 15 C requirements.

3.Test the EUT in transmitting mode. (Fundamental frequency at: 107.910MHz)

Intentional emission

Test Frequency (MHz)	Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
107.910	43.2	46.6	68.0	24.8	21.4

Test Frequency (MHz)	Average (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
107.910	42.0	45.0	48.0	6.0	3.0

Other emissions

Test Frequency (MHz)	Quasi-Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
215.820	33.9	34.5	43.5	9.6	9.0
323.730	26.3	27.0	46.0	19.7	19.0
431.640	30.8	30.5	46.0	15.2	15.5
539.550	24.0	25.2	46.0	22.0	20.8
647.460	22.5	24.1	46.0	23.5	21.9
755.370	25.4	25.2	46.0	20.6	20.8
863.280	27.6	27.5	46.0	18.4	18.5
971.190	28.2	27.3	46.0	17.8	18.7
1079.100	31.8	30.9	54.0	22.2	23.1

Test Results: The unit does meet the FCC Part 15 C requirements.

4.3.2 Occupied Bandwidth

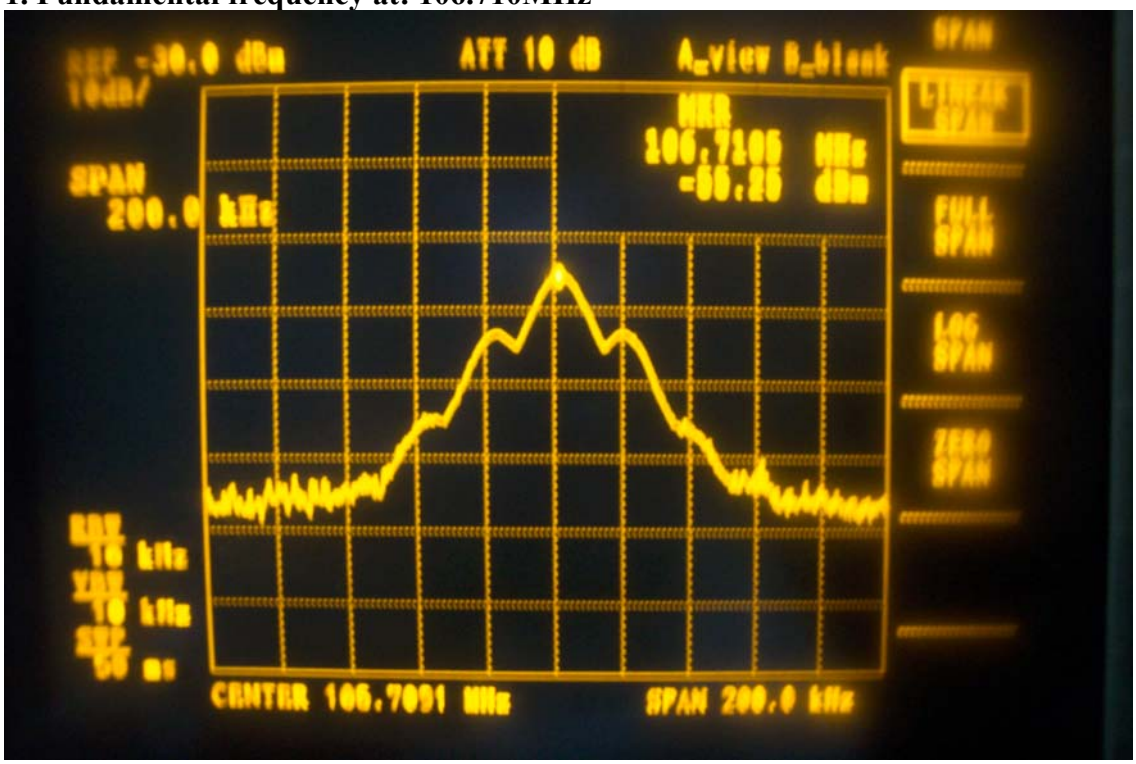
Test Requirement: FCC Part15 C
Test Method: Based on FCC Part15 C Section 15.239:
Operation within the band 49.82 – 49.90 MHz
Test Date: 22 September 2003

Requirements: Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz. The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in Section 15.209.

Method of measurement: The useful radiated emission from the EUT was detected by the spectrum analyer with peak detector. The vertical Scale is set to – 10dB per division. The horizontal scale is set to 5KHz per division.

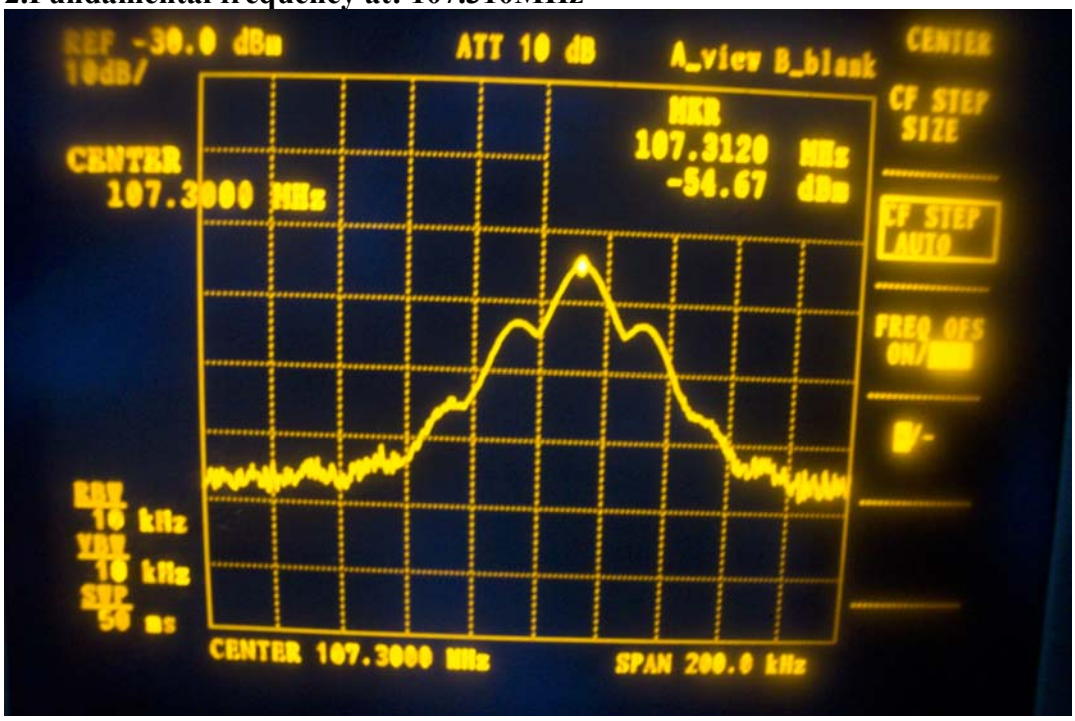
The graph as below, represents the emissions take for this device.

1. Fundamental frequency at: 106.710MHz



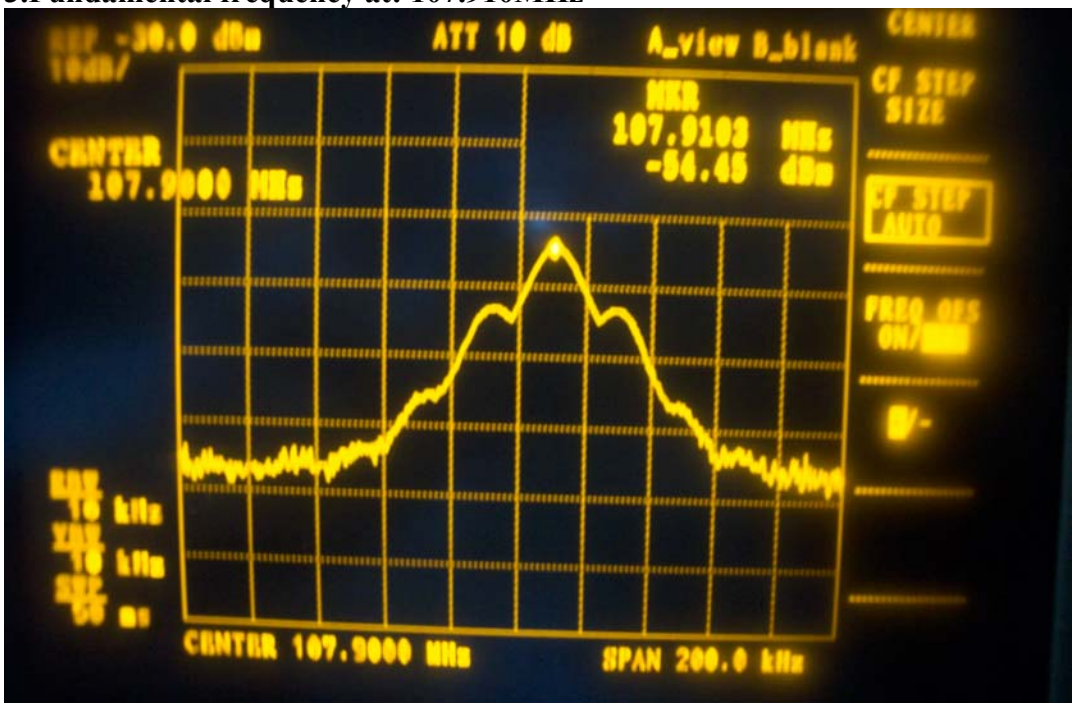
The results: The unit does meet the FCC Part 15 C requirements.

2.Fundamental frequency at: 107.310MHz



The results: The unit does meet the FCC Part 15 C requirements.

3.Fundamental frequency at: 107.910MHz



The results: The unit does meet the FCC Part 15 C requirements.