EMC
TEST REPORT

Report No.: EME-031372
Model No.: PC-7207
Issued Date: Jan. 16, 2004

Applicant: **Procare International Co.**
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Taipei, Taiwan

Test By: **Intertek Testing Services Taiwan Ltd.**
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Summary of Tests

FM Stereo Transmitter -Model: PC-7207
FCC ID: POSPC-7207

Test	Reference	Results
Bandwidth of fundamental frequency	15.239(a)	Complies
Field strength of fundamental frequency	15.239(b)	Complies
Radiated emission	15.239(c), 15.209	Complies

1. General information

1.1 Identification of the EUT

Applicant:	Procare International Co.
Product:	FM Stereo Transmitter
Model No.:	PC-7207
FCC ID.:	POSPC-7207
Frequency Range:	88.1 to 88.7MHz
Channel Number:	4 channels
Frequency of Each Channel:	88.1, 88.3, 88.5, 88.7MHz
Type of Modulation:	FM
Power Supply:	3Vdc
Power Cord:	N/A
Sample Received:	Dec. 18, 2003
Test Date(s):	Dec. 25, 2003

1.2 Additional information about the EUT

It is an ideal accessory for iPod. User can use user's portable audio device to enjoy favorite music through any FM stereo receiver. Plug the FM stereo transmitter into the headphone jack of portable audio source including CD, MD players or MP3; or PDA. Tune the frequency of the car or home stereo to FM 88.1, 88.3, 88.5, 88.7 MHz. User will hear the music playing in the stereo.

We verified that DX-AC101 and EF-6208 are identical to PC-7207 (EUT), and the difference model for difference brand serve as marketing strategy.

For more detail features, please refer to User's manual as file name "Installation guide.pdf"

1.3 Antenna description

The EUT uses a permanently connected antenna.

Antenna Gain: 0dBi
Antenna Type: PCB Printed
Connector Type: N/A

1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.	FCC ID
USB flash disk	VION	S320	N/A	FCC DoC

2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Paragraph 15.239.

The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of this frequency band were all meet limit requirement, thus we evaluate the EUT pass the specified test.

2.2 Operation mode

The EUT was continuously transmit during the test.

2.3 Test equipment

Equipment	Brand	Frequency range	Model No.	Series No.	Last Cal.Date
EMI Test Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	825788/014	June 6, 2003
EMI Test Receiver	Rohde & Schwarz	20Hz~26.5GHz	ESMI	825428/005	June 24, 2003
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	100137	July 19, 2003
Horn Antenna	EMCO	1GHz~18GHz	3115	9906-5890	Oct. 15, 2003
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	VULB 9160-3133	Feb. 21, 2003
Turn Table	HDGmbH	N/A	DS 420S	420/669/01	N/A
Antenna Tower	HDGmbH	N/A	MA 240	240/573	N/A

Note: The above equipments are within the valid calibration period.

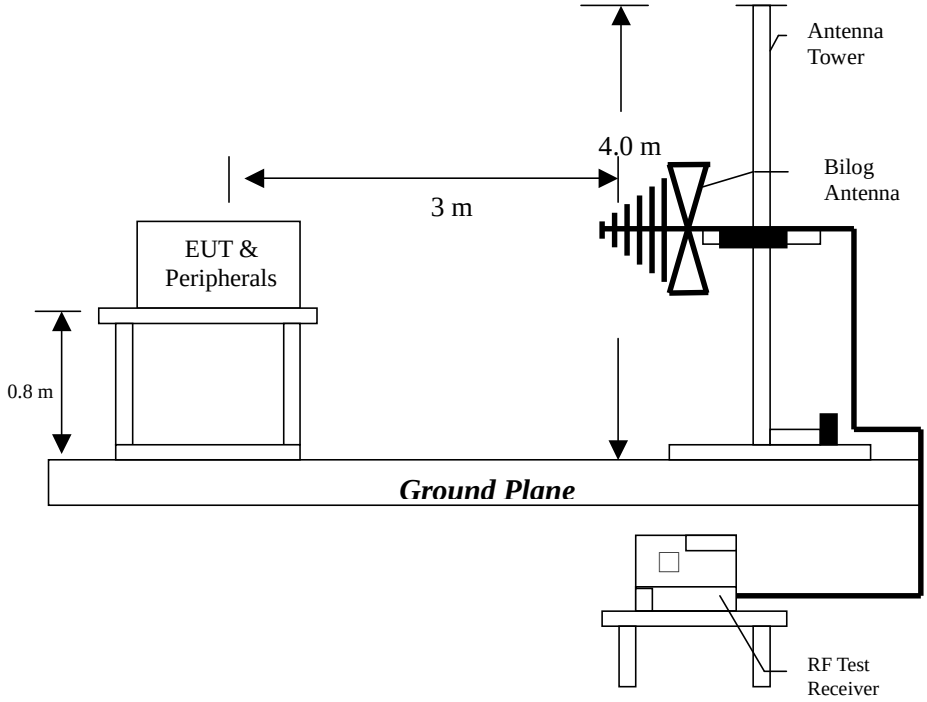
3. Radiated emission test FCC 15.239 (b)/(c)

3.1 Operating environment

Temperature:	22	℃	(10-40℃)
Relative Humidity:	52	%	(10-90%)
Atmospheric Pressure	1023	hPa	(860-1060hPa)

3.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emissions were invested cover the frequency range from 30MHz to 1000MHz using a receiver RBW of 120kHz record QP reading, and the frequency over 1GHz using a spectrum analyzer RBW of 1MHz and 10Hz VBW record Average reading. (15.209 paragraph), the Peak reading (1MHz RBW/VBW) recorded also on the report.
The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

The EUT configuration please refer to the "Spurious set-up photo.pdf".

3.3 Emission limit

3.3.1 Fundamental and harmonics emission limits

Frequency (MHz)	Field Strength of Fundamental	
	(uV/m@3m)	(dBuV/m@3m)
88-108	250	48

The emission limit above is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emissions apply.

3.3.2 General radiated emission limits

Frequency MHz	15.209 Limits (dB μ V/m@3m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Remark:
1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring antenna and the closed point of any part of the device or system

Uncertainty was calculated in accordance with NAMAS NIS 81.
Expanded uncertainty (k=2) of radiated emission measurement is ±4.98 dB.

3.4 Radiated emission test data

3.4.1 Fundamental Radiated Emission Data

EUT : PC-7207
Test Condition : Tx at 88.3MHz

Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
88.37000	PK	V	9.41	33.32	42.73	68.00	-25.27	325	205
88.37000	AV	V	9.41	24.88	34.29	48.00	-13.71	325	205
88.36000	PK	H	9.41	40.86	50.27	68.00	-17.73	259	119
88.36000	AV	H	9.41	33.16	42.57	48.00	-5.43	259	119

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss

3.4.2 Harmonic Radiated Emission Data

The radiated emissions at

Frequency(MHz)	Margin
264.91000	-2.12

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : PC-7207
Test Condition : Tx at 88.3MHz

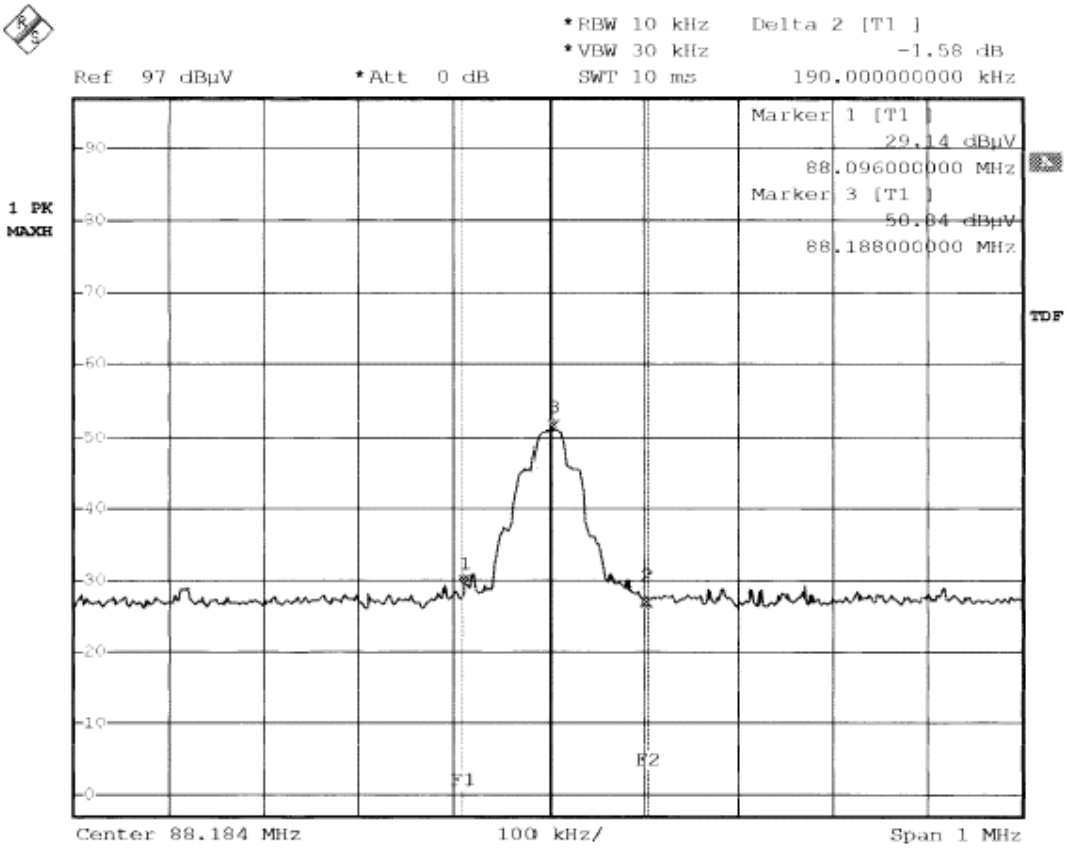
Frequency (MHz)	Spectrum Analyzer Detector	Antenna Polariz. (H/V)	Correction Factor (dB/m)	Reading (dBuV)	Corrected Level (dBuV/m)	Limit @ 3 m (dBuV)	Margin (dB)	Antenna high (cm)	Turn Table angle (degree)
95.96000	QP	V	10.44	4.16	14.60	43.50	-28.90	137	204
107.98000	QP	V	10.92	5.53	16.45	43.50	-27.05	100	187
176.47000	QP	V	14.29	7.29	21.58	43.50	-21.92	225	249
264.85000	QP	V	13.38	17.88	31.26	46.00	-14.74	154	42
353.53000	QP	V	15.56	3.93	19.49	46.00	-26.51	293	41
528.70000	QP	V	19.15	1.42	20.57	46.00	-25.43	300	256
176.63000	QP	H	14.29	17.83	32.12	43.50	-11.38	230	307
264.91000	QP	H	13.38	30.50	43.88	46.00	-2.12	100	323
353.20000	QP	H	15.56	14.60	30.16	46.00	-15.84	100	320
441.30000	QP	H	17.86	4.95	22.81	46.00	-23.19	100	79
529.63000	QP	H	19.15	9.29	28.44	46.00	-17.56	162	72
566.84000	QP	H	19.99	10.51	30.50	46.00	-15.50	182	72

Remark:
1.Corrected Level = Reading Level + Correction Factor
2.Correction Factor = Antenna Factor + Cable Loss

4. Bandwidth of fundamental frequency FCC 15.239(a)

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operation frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

Please see the plot below.



Comment A: Radiated spurious tx at low channel[