

TEST REPORT

Report No.: SZ09090079-1

PROCARE INTERNATIONAL CO.

Application
For
Certification

(Original Grant)

(FCC ID: POSEF-6209S)

Transmitter

Prepared and Checked by:



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Approved by:



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Date: September 22, 2009

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TRF No.: FCCIC_C_a

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INTERTEK TESTING SERVICES

GENERAL INFORMATION

PROCARE INTERNATIONAL CO.

MODEL: EF6209C

FCC ID: POSEF-6209S

Grantee:	PROCARE INTERNATIONAL CO.
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Manufacturer:	N/A
Manufacturer Address:	N/A
Brand Name:	N/A
Model:	EF6209C
Additonal Model:	N/A
Type of EUT:	Transmitter
Description of EUT:	FM Transmitter
Serial Number:	N/A
FCC ID :	POSEF-6209S
Date of Sample Submitted:	September 07, 2009
Date of Test:	September 22, 2009
Report No.:	SZ09090079-1
Report Date:	September 22, 2009
Environmental Conidtions:	Temperature: +10 to 40℃ Humidity: 10 to 90%

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SUMMARY OF TEST RESULT

**PROCARE INTERNATIONAL CO.
MODEL: EF6209C**

FCC ID: POSEF-6209S

TEST SPECIFICATION	REFERENCE	RESULTS
Maximum Peak Output Power	15.247(b), (c) / RSS-210 A8.4	N/A
Hopping Channel Carrier Frequencies Separation	15.247(e) / RSS-210 A8.1	N/A
20dB Bandwidth of the Hopping Channel	15.247(a) / RSS-210 A8.1	N/A
Number of Hopping Frequencies	15.247(e) / RSS-210 A8.1	N/A
Average Time of Occupancy of Hopping Frequency	15.247(e) / RSS-210 A8.1	N/A
Antennas Conducted Spurious Emissions	15.247(d) / RSS-210 A8.5	N/A
Radiated Spurious Emissions	15.247(d) / RSS-210 A8.5	N/A
RF Exposure Compliance	15.247(i) / RSS-Gen 5.5	N/A
Transmitter Power Line Conducted Emissions	15.207 / RSS-Gen 7.2.2	N/A
Transmitter Field Strength	15.227 / RSS-310 3.8	N/A
Transmitter Field Strength	15.229 / RSS-210 A2.7	N/A
Transmitter Field Strength, Bandwidth and Timing Requirement	15.231(a) / RSS-210 A1.1.1	N/A
Transmitter Field Strength, Bandwidth and Timing Requirement	15.231(e) / RSS-210 A1.1.5	N/A
Transmitter Field Strength and Bandwidth Requirement	15.239 / RSS-210 A2.8	Pass
Transmitter Field Strength and Bandwidth Requirement	15.249 / RSS-210 A2.9	N/A
Transmitter Field Strength and Bandwidth Requirement	15.235 / RSS-310 3.9	N/A
Receiver / Digital Device Radiated Emissions	15.109 / ICES-003	N/A
Digital Device Conducted Emissions	15.107 / ICES-003	N/A

Note: 1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the provisions of this section.
2. Pursuant to FCC part 15 Section 15.215(c), the 20 dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

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1.0 **General Description**

1.1 Product Description

The equipment under test (EUT) is a FM Transmitter for music Player. The main function is used to transmit the music stored in music Player, which can be received by a FM radio. It is powered by 2 AAA batteries for battery operation mode and also can be powered by car charger and Input AC120V, 60Hz output DC 3V adapter. The operation frequency is from 88.1 to 107.9MHz.

Antenna Type: Integral antenna.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This is a single application for certification of a transmitter.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurement was performed according to the procedures in ANSI C63.4 (2003). Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

1.4 Test Facility

The Semi-Anechoic chamber and conducted measurement facility used to collect the radiated data and conducted data is **Interterk Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC.

2.0 **System Test Configuration**

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The EUT were powered by 2 new AAA batteries for battery operation mode and powered by car charger and powered by Input AC120V, 60Hz output DC 3V adapter during test.

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the centre of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emission at and above 30 MHz, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data report in Exhibit 3.0.

The unit was operated in the center of the turntable for battery operation mode and the rear of unit shall be flushed with the rear of the table for car charger and adaptor powered mode.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered up, it transmits the RF signal continuously.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by PROCARE INTERNATIONAL CO. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

2.5 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

2.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
Adapter	Ketiaowang	CD432K
iPod Player	Apple	A1136
D.C. Power Supply	Guwei	SPS-3610

Note: The above equipment is provided by Intertek.

3.0 **Emission Results**

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG - AV$$

where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB
 AV = Average Factor in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

$$FS = RR + LF$$

where FS = Field Strength in dB μ V/m
 $RR = RA - AG - AV$ in dB μ V
 $LF = CF + AF$ in dB

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$RA = 52.0$ dB μ V/m	
$AF = 7.4$ dB	$RR = 18.0$ dB μ V
$CF = 1.6$ dB	$LF = 9.0$ dB
$AG = 29.0$ dB	
$AV = 5.0$ dB	
$FS = RR + LF$	
$FS = 18 + 9 = 27$ dB μ V/m	

Level in μ V/m = Common Antilogarithm $[(27 \text{ dB}\mu\text{V/m})/20] = 22.4 \mu\text{V/m}$

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission at 107.900 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 3.5 dB

INTERTEK TESTING SERVICES

Applicant: PROCARE INTERNATIONAL CO.
Model: EF6209C
Mode: TX (Power by Car Charger)

Date of Test: September 22, 2009

Table 1

Radiated Emissions

Channel L

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	35.335	33.5	20.0	15.6	29.1	40.0	-10.9
Horizontal	88.100	51.9	20.0	9.5	41.4	48.0	-6.6
Horizontal	176.200	47.1	20.0	11.0	38.1	43.5	-5.4
Horizontal	264.300	40.1	20.0	13.1	33.2	46.0	-12.8
Horizontal	352.400	34.3	20.0	15.7	30.0	46.0	-16.0
Horizontal	440.500	32.4	20.0	18.4	30.8	46.0	-15.2

Channel M

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	34.850	32.4	20.0	15.6	28.0	40.0	-12.0
Horizontal	98.000	51.2	20.0	10.1	41.3	48.0	-6.7
Horizontal	196.000	48.1	20.0	11.4	39.5	43.5	-4.0
Horizontal	294.000	38.8	20.0	13.1	31.9	46.0	-14.1
Horizontal	392.000	36.4	20.0	15.0	31.4	46.0	-14.6
Horizontal	490.000	32.9	20.0	19.9	32.8	46.0	-13.2

Channel H

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	34.850	31.9	20.0	15.6	27.5	40.0	-12.5
Horizontal	107.900	55.0	20.0	9.5	44.5	48.0	-3.5
Horizontal	215.800	48.6	20.0	11.0	39.6	43.5	-3.9
Horizontal	323.700	39.9	20.0	13.1	33.0	46.0	-13.0
Horizontal	431.600	35.5	20.0	15.7	31.2	46.0	-14.8

NOTES: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative sign in the column shows value below limit.

4. Horn antenna is used for the emissions over 1000MHz.

3.4 Conducted Emission Configuration Photograph

Worst Case Radiated Emission at 29.486 MHz

For electronic filing, the worst case conducted emission configuration photographs are saved with filename: conducted photos.pdf.

3.5 conducted Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 17.2 dB

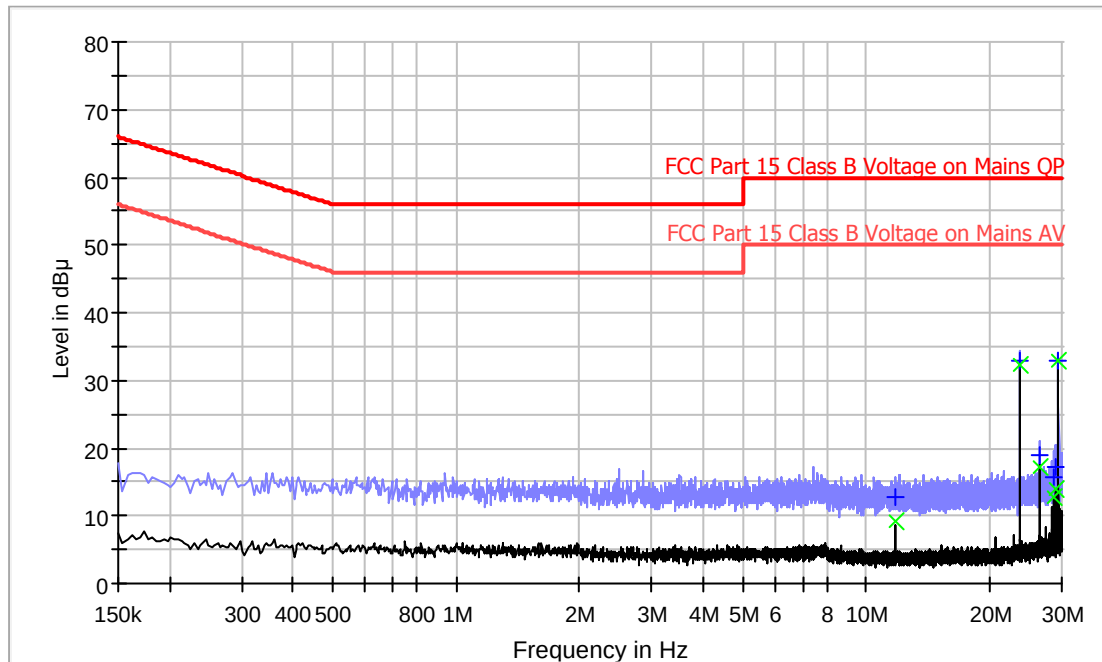
INTERTEK TESTING SERVICES

Applicant: PROCARE INTERNATIONAL CO.
Model: EF6209C
Mode: TX (Power by Adapter)

Date of Test: September 22, 2009

Conducted Emissions

Live Line



Result Table-QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
11.794000	12.7	L1	9.9	47.3	60.0
23.590000	32.8	L1	10.1	27.2	60.0
26.538000	19.0	L1	10.1	41.0	60.0
28.554000	15.6	L1	10.2	44.4	60.0
28.994000	17.2	L1	10.2	42.8	60.0
29.486000	33.0	L1	10.2	27.0	60.0

Result Table-AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
11.794000	9.3	L1	9.9	40.7	50.0
23.590000	32.2	L1	10.1	17.8	50.0
26.538000	17.3	L1	10.1	32.7	50.0
28.554000	12.9	L1	10.2	37.1	50.0
28.994000	14.1	L1	10.2	35.9	50.0
29.486000	32.8	L1	10.2	17.2	50.0

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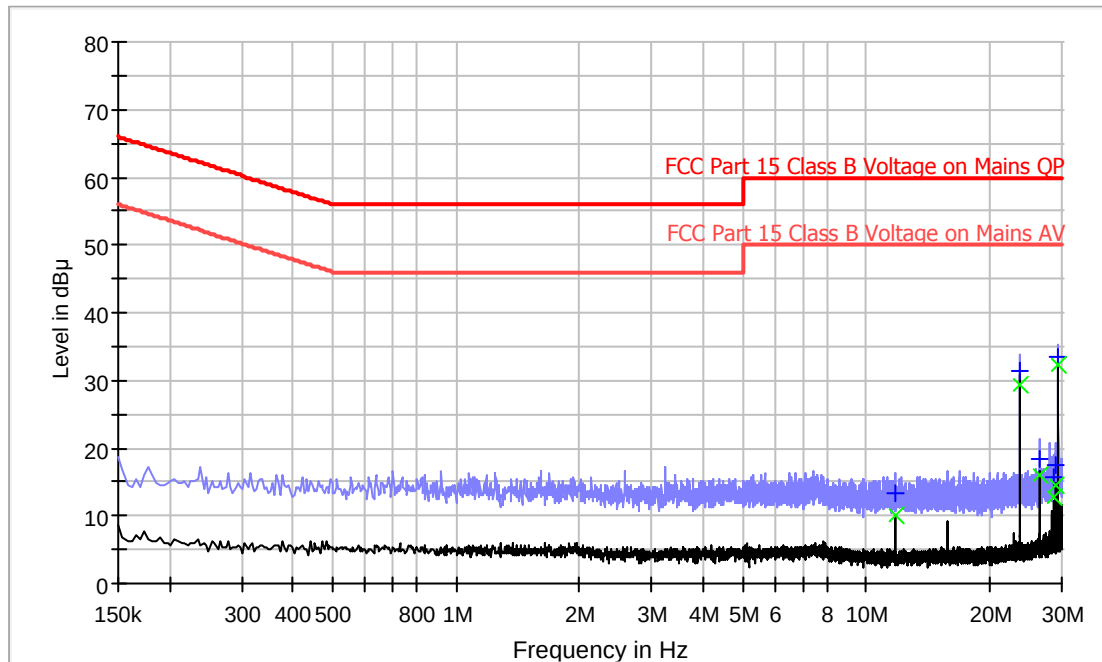
INTERTEK TESTING SERVICES

Applicant: PROCARE INTERNATIONAL CO.
Model: EF6209C
Mode: TX (With Adaptor)

Date of Test: September 22, 2009

Conducted Emissions

Neutral Line



Result Table-QP

Frequency (MHz)	QuasiPeak (dB μV)	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
11.794000	13.3	N	10.0	46.7	60.0
23.590000	31.3	N	10.2	28.7	60.0
26.538000	18.5	N	10.3	41.5	60.0
28.554000	15.7	N	10.3	44.4	60.0
28.994000	17.4	N	10.3	42.6	60.0
29.486000	33.4	N	10.3	26.6	60.0

Result Table-AV

Frequency (MHz)	Average (dB μV)	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
11.794000	10.2	N	10.0	39.8	50.0
23.590000	29.4	N	10.2	20.6	50.0
26.538000	16.0	N	10.3	34.0	50.0
28.554000	12.6	N	10.3	37.4	50.0
28.994000	14.4	N	10.3	35.6	50.0
29.486000	32.3	N	10.3	17.7	50.0

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4.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename: external photos.pdf and internal photos.pdf.

5.0 **Product Labelling**

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

6.0 **Technical Specifications**

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

7.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

8.0 **Miscellaneous Information**

This miscellaneous information includes details of the measured bandwidth, the test procedure and calculation of factors such as pulse desensitization and averaging factor.

8.1 **Measured Bandwidth**

For electronic filing, the plot on saved in bw.pdf shows the fundamental emission which is applied iPod Video as audio input source in maximum volume. From the plot, it shows the emission is within the 200 KHz band.

8.2 Discussion of Pulse Desensitization

Pulse Desensitization is not applicable for this device. Since the transmitter transmits the RF signal continuously.

8.3 Calculation of Average Factor

The average factor is not applicable for this device as the transmitted signal is a continuously signal.

8.4 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

INTERTEK TESTING SERVICES

8.4 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.4 - 2003.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.2). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

9.0 Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	12-May-08	12-Nov-09
SZ185-01	EMI Receiver	R&S	ESCI	100547	18-May-09	18-May-10
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	25-Oct-08	25-Oct-09
SZ062-02	RF Cable	RADIALL	RG 213U	--	29-Apr-09	29-Oct-09
SZ062-06	RF Cable	RADIALL	0.04-26.5GHz	--	17-Aug-09	17-Aug-10
SZ062-01	RF Cable	MIZU	RG58/AU	2M	29-Apr-09	29-Oct-09
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	28-Nov-08	28-Nov-09
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	01-Dec-08	01-Dec-09
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	01-Dec-08	01-Dec-09
SZ188-03	Shielding Room	ETS	RFD-100	4100	15-Sep-07	15-Sep-10