



TESTING  
CERT #803.01, 803.02, 803.05, 803.06

**PACIFIC BIOSCIENCE LABORATORIES, INC. TEST REPORT**

**FOR THE**

**CHARGER BASE (PBL5143) & AC/DC ADAPTER (PBL3100-479)**

**FCC PART 18 SUBPART C SECTIONS 18.305 AND 18.307**

**TESTING**

**DATE OF ISSUE: AUGUST 14, 2009**

**PREPARED FOR:**

Pacific BioScience Laboratories, Inc.  
13222 SE 30th St.  
Bellevue, WA 98005

P.O. No.: 6419  
W.O. No.: 89757

**PREPARED BY:**

Mary Ellen Clayton  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

Date of test: July 24, 2009

**Report No.: FC09-126**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** July 24, 2009

**DATE OF RECEIPT:** July 24, 2009

**REPRESENTATIVE:** Ryan Rutledge

**MANUFACTURER:**

Pacific BioScience Laboratories, Inc.  
13222 SE 30th St.  
Bellevue, WA 98005

**TEST LOCATION:**

CKC Laboratories, Inc.  
22116 23rd Drive S.E., Suite A  
Bothell, WA 98021-4413

**TEST METHOD:** MP-5 (1987)

**PURPOSE OF TEST:** To perform the testing of the Charger Base (PBL5143) & AC/DC Adapter (PBL3100-479) with the requirements for FCC Part 18 Subpart C Sections 18.305 and 18.307 devices.

### APPROVALS

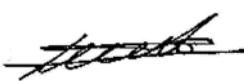
**QUALITY ASSURANCE:**



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Steve Behm, Director of Engineering Services

**TEST PERSONNEL:**



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Armando Del Angel, Test Engineer

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Donald Jones, Senior EMC Engineer / Lab  
Manager

### SITE FILE REGISTRATION NUMBERS

Location	Japan	Canada	FCC
Bothell	R-2296, C-2506 & T-1489	3082C-1	318736

## SUMMARY OF RESULTS

Test	Specification	Results
Conducted Emissions	FCC Part 18.305, MP-5 (1987)	Pass
Radiated Emissions	FCC Part 18.307, MP-5 (1987)	Pass

## CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

The following peripheral model was tested by CKC Laboratories: **Sonic Applicator, SAMK2**

Since the time of testing the manufacturer has chosen to use the following model name in its place. Any differences between the names does not affect their EMC characteristics and therefore meets the level of testing equivalent to the tested model name shown on the data sheets: **Sonic Applicator, PBL5001**

## EQUIPMENT UNDER TEST

### Charger Base

Manuf: Pacific Bioscience Laboratories, Inc.  
 Model: PBL5143  
 Serial: SACM28

### AC/DC Adapter

Manuf: Pacific Bioscience Laboratories, Inc.  
 Model: PBL3100-479  
 Serial: SAWW28

## PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

### Sonic Applicator

Manuf: Pacific Bioscience Laboratories, Inc.  
 Model: PBL5001  
 Serial: NA  
 FCC ID: SD2SAMK4

## MEASUREMENT UNCERTAINTIES

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ . Compliance is deemed to occur provided measurements are below the specified limits.

## REPORT OF EMISSIONS MEASUREMENTS

### TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

### CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in  $\text{dB}\mu\text{V}/\text{m}$ , the spectrum analyzer reading in  $\text{dB}\mu\text{V}$  was corrected by using the following formula. This reading was then compared to the applicable specification limit.

<b>SAMPLE CALCULATIONS</b>	
Meter reading	(dB $\mu$ V)
+ Antenna Factor	(dB)
+ Cable Loss	(dB)
- Distance Correction	(dB)
- Preamplifier Gain	(dB)
= Corrected Reading	(dB $\mu$ V/m)

## TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

<b>MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

## SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

### Peak

In this mode, the spectrum analyzer/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

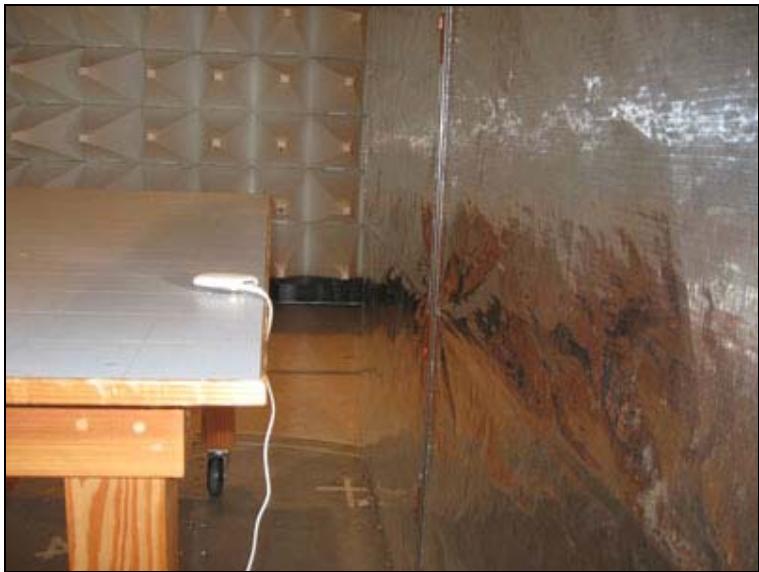
### Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

## CONDUCTED EMISSIONS

### Test Setup Photos





**Test Data Sheets**

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC 18.307 AVE Consumer Devices**  
 Work Order #: **89757** Date: 7/24/2009  
 Test Type: **Conducted Emissions** Time: 1:39:42 PM  
 Equipment: **Charger Base** Sequence#: 15  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143 115V 60Hz  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
EMCO LISN	9606-1049	06/02/2009	06/02/2011	AN01492
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N
Sonic Applicator	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3

**Test Conditions / Notes:**

Temp: 23°C  
 Humidity: 43%  
 Pressure: 102.5kPa  
 Testing Conducted Emissions per FCC 18.307  
 Frequency range investigated was 9kHz-30MHz  
 EUT is located in the back edge of the test table.  
 EUT is a sonic applicator's charger base.  
 EUT is connected to AC voltage.  
 EUT is charging a sonic applicator.

**Transducer Legend:**

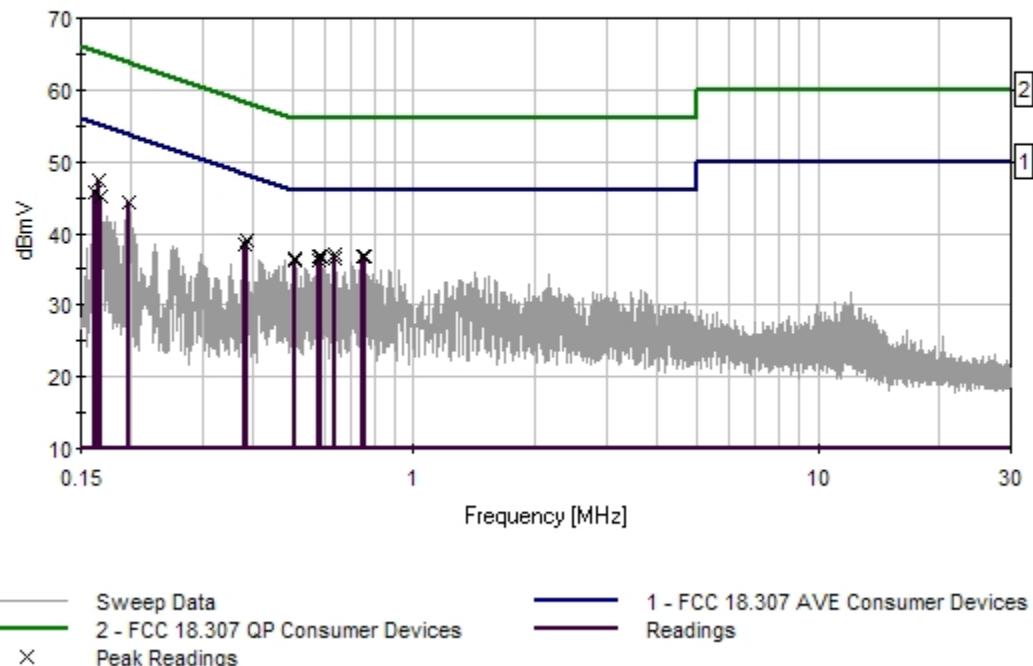
T1=CAB-ANP05360	T2=CAB-ANP05366
T3=CAB-ANP03121-042809	T4=ATT-ANP5503-032108
T5=FIL-AN02611-072108	T6=CDN-AN01492-060209 - Neutral

**Measurement Data:** Reading listed by margin. **Test Lead:** Neutral

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6			Table	dBmV	dBmV	dB	Ant
	MHz	dB $\mu$ V	dB	dB	dB	dB	Table	dBmV	dBmV	dB	Ant
1	165.271k	36.5	+0.0	+0.0	+0.1	+10.1	+0.0	47.3	55.2	-7.9	Neutr
			+0.5	+0.1							

2	638.682k	26.7	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	37.2	46.0	-8.8	Neutr
3	384.888k	28.7	+0.1 +0.1	+0.0 +0.0	+0.1	+10.1	+0.0	39.1	48.2	-9.1	Neutr
4	585.596k	26.3	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	36.8	46.0	-9.2	Neutr
5	755.763k	26.2	+0.1 +0.2	+0.1 +0.0	+0.1	+10.1	+0.0	36.8	46.0	-9.2	Neutr
6	579.052k	26.2	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	36.7	46.0	-9.3	Neutr
7	751.399k	26.1	+0.1 +0.2	+0.1 +0.0	+0.1	+10.1	+0.0	36.7	46.0	-9.3	Neutr
8	640.864k	26.1	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	36.6	46.0	-9.4	Neutr
9	163.090k	35.0	+0.0 +0.5	+0.0 +0.1	+0.1	+10.1	+0.0	45.8	55.3	-9.5	Neutr
10	197.996k	33.7	+0.0 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	44.2	53.7	-9.5	Neutr
11	509.967k	26.0	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	36.5	46.0	-9.5	Neutr
12	583.415k	25.8	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	36.3	46.0	-9.7	Neutr
13	381.252k	28.1	+0.1 +0.1	+0.0 +0.0	+0.1	+10.1	+0.0	38.5	48.3	-9.8	Neutr
14	167.453k	34.5	+0.0 +0.4	+0.0 +0.1	+0.1	+10.1	+0.0	45.2	55.1	-9.9	Neutr
15	507.785k	25.6	+0.1 +0.2	+0.0 +0.0	+0.1	+10.1	+0.0	36.1	46.0	-9.9	Neutr

CKC Laboratories Date: 7/24/2009 Time: 1:39:42 PM Pacific Bioscience Laboratories, Inc WO#: 89757  
FCC 18.307 AVE Consumer Devices Test Lead: Neutral 115V 60Hz Sequence#: 15 Polarity: Neutral  
Notes:



Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC 18.307 AVE Consumer Devices**  
 Work Order #: **89757** Date: **7/24/2009**  
 Test Type: **Conducted Emissions** Time: **1:42:33 PM**  
 Equipment: **Charger Base** Sequence#: **16**  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143 **115V 60Hz**  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
EMCO LISN	9606-1049	06/02/2009	06/02/2011	AN01492
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N
Sonic Applicator	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3

**Test Conditions / Notes:**

Temp: 23°C  
 Humidity: 43%  
 Pressure: 102.5kPa  
 Testing Conducted Emissions per FCC 18.307  
 Frequency range investigated was 9kHz-30MHz  
 EUT is located in the back edge of the test table.  
 EUT is a sonic applicator's charger base.  
 EUT is connected to AC voltage.  
 EUT is charging a sonic applicator.

**Transducer Legend:**

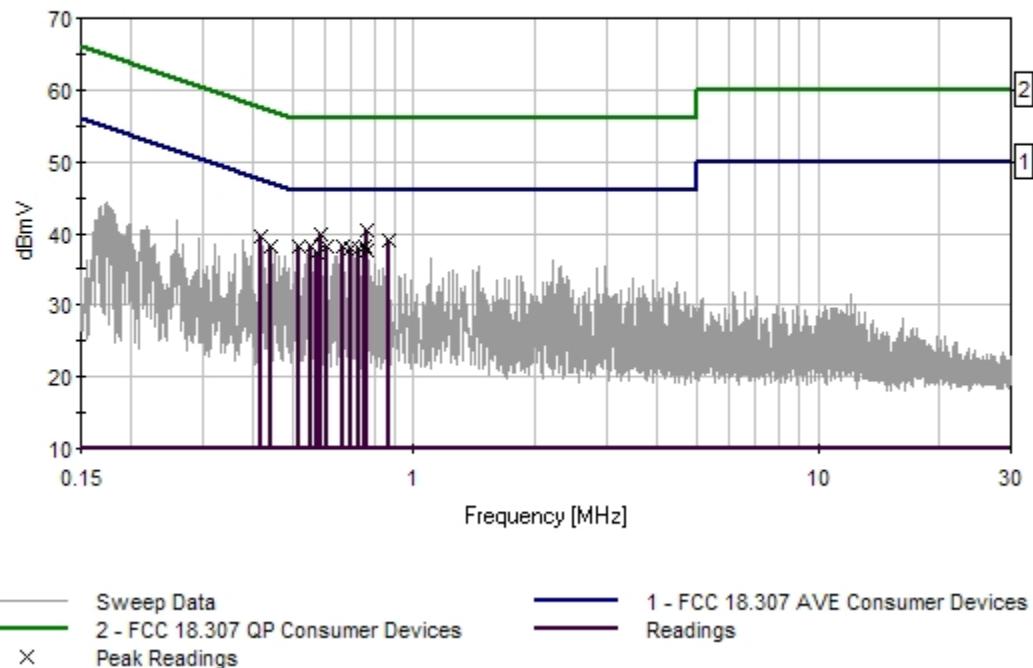
T1=CAB-ANP05360	T2=CAB-ANP05366
T3=CAB-ANP03121-042809	T4=ATT-ANP5503-032108
T5=FIL-AN02611-072108	T6=CDN-AN01492-060209 - Line

**Measurement Data:**

#	Freq MHz	Reading listed by margin.				Test Lead: Line					
		Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBmV	Spec dBmV	Margin dB	Polar Ant
		T5 dB	T6 dB								
1	762.307k	29.6	+0.1	+0.1	+0.1	+10.1	+0.0	40.3	46.0	-5.7	Line
			+0.2	+0.1							

2	590.687k	29.4	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	40.0	46.0	-6.0	Line
3	864.844k	28.3	+0.1 +0.2	+0.1 +0.1	+0.1	+10.1	+0.0	39.0	46.0	-7.0	Line
4	555.054k	27.7	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.3	46.0	-7.7	Line
5	516.512k	27.6	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.2	46.0	-7.8	Line
6	605.958k	27.6	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.2	46.0	-7.8	Line
7	420.521k	29.0	+0.1 +0.1	+0.0 +0.1	+0.1	+10.1	+0.0	39.5	47.4	-7.9	Line
8	667.044k	27.5	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.1	46.0	-7.9	Line
9	757.944k	27.4	+0.1 +0.2	+0.1 +0.1	+0.1	+10.1	+0.0	38.1	46.0	-7.9	Line
10	733.219k	27.3	+0.1 +0.2	+0.1 +0.1	+0.1	+10.1	+0.0	38.0	46.0	-8.0	Line
11	699.041k	27.2	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	37.8	46.0	-8.2	Line
12	766.671k	26.9	+0.1 +0.2	+0.1 +0.1	+0.1	+10.1	+0.0	37.6	46.0	-8.4	Line
13	577.597k	26.8	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	37.4	46.0	-8.6	Line
14	573.961k	26.7	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	37.3	46.0	-8.7	Line
15	443.791k	27.6	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.2	47.0	-8.8	Line

CKC Laboratories Date: 7/24/2009 Time: 1:42:33 PM Pacific Bioscience Laboratories, Inc WO#: 89757  
FCC 18.307 AVE Consumer Devices Test Lead: Line 115V 60Hz Sequence#: 16 Polarity: Line  
Notes:



Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Pacific BioScience Laboratories, Inc.**  
 Specification: **FCC 18.307 AVE Consumer Devices**  
 Work Order #: **89757** Date: **7/24/2009**  
 Test Type: **Conducted Emissions** Time: **1:34:25 PM**  
 Equipment: **Charger Base** Sequence#: **14**  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143 **115V 60Hz**  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
EMCO LISN	9606-1049	06/02/2009	06/02/2011	AN01492
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Temp: 23°C
Humidity: 43%
Pressure: 102.5kPa
Testing Conducted Emissions per FCC 18.307
Frequency range investigated was 9kHz-30MHz
EUT is located in the back edge of the test table.
EUT is a sonic applicator's charger base.
EUT is connected to AC voltage.

**Transducer Legend:**

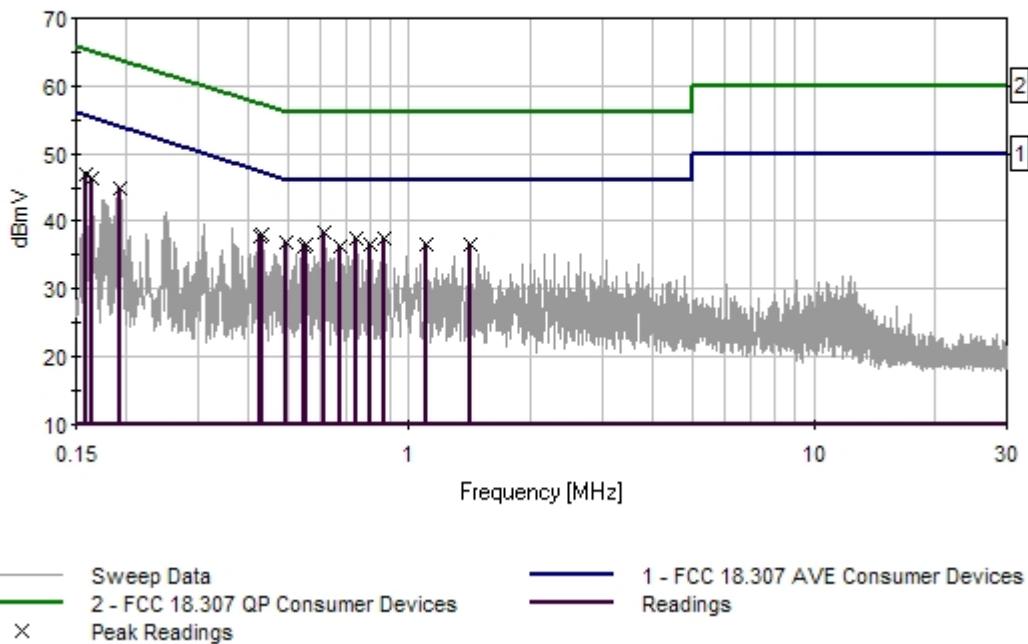
T1=CAB-ANP05360	T2=CAB-ANP05366
T3=CAB-ANP03121-042809	T4=ATT-ANP5503-032108
T5=FIL-AN02611-072108	T6=CDN-AN01492-060209 - Neutral

**Measurement Data:** Reading listed by margin. **Test Lead: Neutral**

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6			Table	dBmV	dBmV	dB	Ant
	MHz	dB $\mu$ V	dB	dB	dB	dB					
1	615.412k	28.0	+0.1	+0.0	+0.1	+10.1	+0.0	38.5	46.0	-7.5	Neutr
			+0.2	+0.0							
2	159.454k	36.0	+0.0	+0.0	+0.1	+10.1	+0.0	47.0	55.5	-8.5	Neutr
			+0.7	+0.1							

3	738.310k	26.9	+0.1 +0.2	+0.1 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	37.5	46.0	-8.5	Neutr
4	871.388k	26.8	+0.1 +0.2	+0.1 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	37.4	46.0	-8.6	Neutr
5	163.817k	35.6	+0.0 +0.5	+0.0 +0.1	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	46.4	55.3	-8.9	Neutr
6	193.632k	34.4	+0.0 +0.2	+0.0 +0.1	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	44.9	53.9	-9.0	Neutr
7	435.065k	27.6	+0.1 +0.2	+0.0 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	38.1	47.2	-9.1	Neutr
8	496.150k	26.4	+0.1 +0.2	+0.0 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.9	46.1	-9.2	Neutr
9	1.107M	26.1	+0.1 +0.2	+0.1 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.7	46.0	-9.3	Neutr
10	1.413M	26.1	+0.1 +0.2	+0.1 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.7	46.0	-9.3	Neutr
11	429.247k	27.5	+0.1 +0.1	+0.0 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	37.9	47.3	-9.4	Neutr
12	555.781k	26.0	+0.1 +0.2	+0.0 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.5	46.0	-9.5	Neutr
13	799.395k	25.9	+0.1 +0.2	+0.1 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.5	46.0	-9.5	Neutr
14	551.418k	25.9	+0.1 +0.2	+0.0 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.4	46.0	-9.6	Neutr
15	675.770k	25.9	+0.1 +0.2	+0.0 +0.0	+0.1 +0.1	+10.1 +10.1	+0.0 +0.0	36.4	46.0	-9.6	Neutr

CKC Laboratories Date: 7/24/2009 Time: 1:34:25 PM Pacific  
BioScience Laboratories, Inc. (Clarisonic) WO#: 89757  
FCC 18.307 AVE Consumer Devices Test Lead: Neutral 115V 60Hz Sequence#: 14 Polarity: Neutral  
Notes:



Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC 18.307 AVE Consumer Devices**  
 Work Order #: **89757** Date: **7/24/2009**  
 Test Type: **Conducted Emissions** Time: **1:31:35 PM**  
 Equipment: **Charger Base** Sequence#: **13**  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143 **115V 60Hz**  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
EMCO LISN	9606-1049	06/02/2009	06/02/2011	AN01492
Attenuator	9912	03/21/2008	03/21/2010	ANP05503
Filter	G7752	07/21/2008	07/21/2010	AN02611

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Temp: 23°C
Humidity: 43%
Pressure: 102.5kPa
Testing Conducted Emissions per FCC 18.307
Frequency range investigated was 9kHz-30MHz
EUT is located in the back edge of the test table.
EUT is a sonic applicator's charger base.
EUT is connected to AC voltage.

**Transducer Legend:**

T1=CAB-ANP05360	T2=CAB-ANP05366
T3=CAB-ANP03121-042809	T4=ATT-ANP5503-032108
T5=FIL-AN02611-072108	T6=CDN-AN01492-060209 - Line

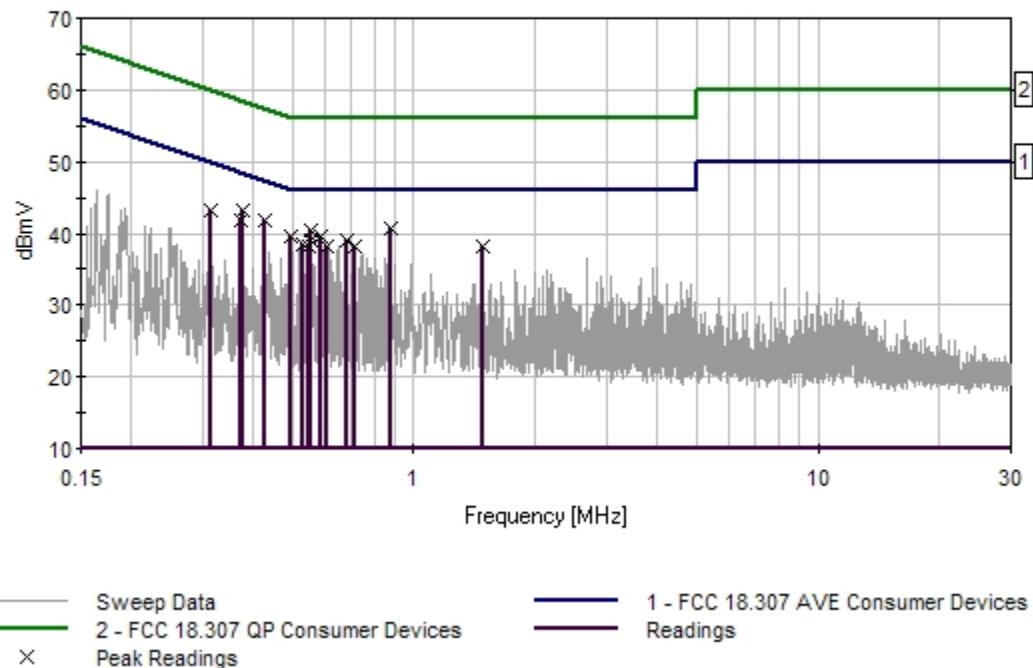
**Measurement Data:** Reading listed by margin.

Test Lead: Line

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6			Table	dBmV	dBmV	dB	Ant
	MHz	dB $\mu$ V	dB	dB	dB	dB					
1	375.434k	32.7	+0.1	+0.0	+0.1	+10.1	+0.0	43.2	48.4	-5.2	Line
			+0.1	+0.1							
2	874.297k	30.1	+0.1	+0.1	+0.1	+10.1	+0.0	40.8	46.0	-5.2	Line
			+0.2	+0.1							

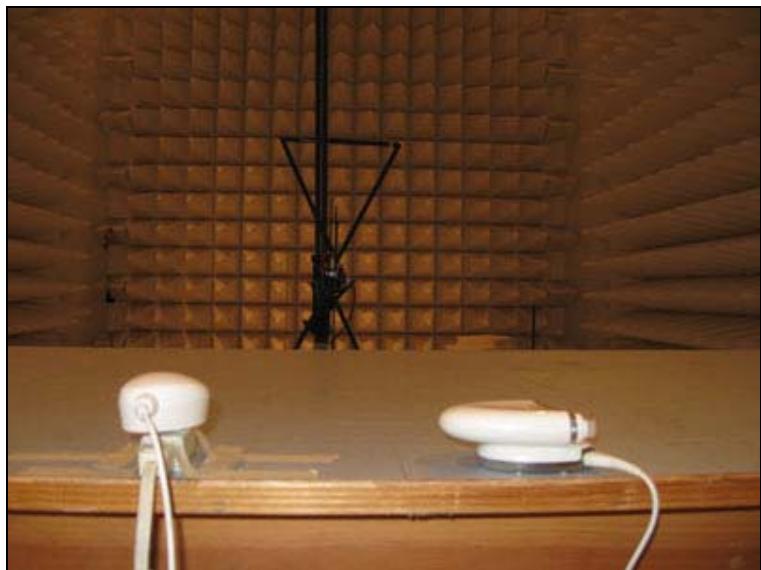
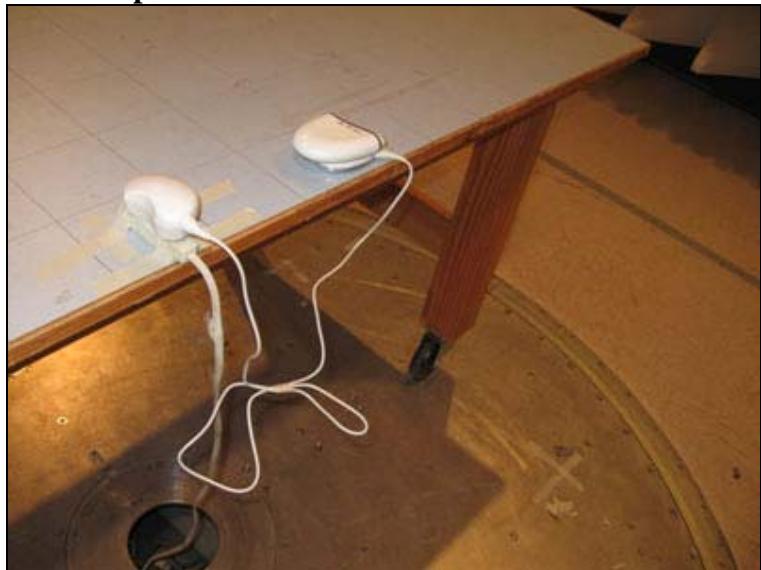
3	428.520k	31.4	+0.1 +0.1	+0.0 +0.1	+0.1	+10.1	+0.0	41.9	47.3	-5.4	Line
4	553.599k	29.8	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	40.4	46.0	-5.6	Line
5	589.232k	29.0	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	39.6	46.0	-6.4	Line
6	495.423k	29.0	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	39.6	46.1	-6.5	Line
7	373.252k	31.3	+0.1 +0.1	+0.0 +0.1	+0.1	+10.1	+0.0	41.8	48.4	-6.6	Line
8	312.894k	32.8	+0.0 +0.1	+0.0 +0.1	+0.1	+10.1	+0.0	43.2	49.9	-6.7	Line
9	556.508k	28.4	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	39.0	46.0	-7.0	Line
10	685.224k	28.3	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.9	46.0	-7.1	Line
11	531.783k	27.8	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.4	46.0	-7.6	Line
12	547.782k	27.7	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.3	46.0	-7.7	Line
13	612.503k	27.7	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	38.3	46.0	-7.7	Line
14	712.130k	27.6	+0.1 +0.2	+0.1 +0.1	+0.1	+10.1	+0.0	38.3	46.0	-7.7	Line
15	1.477M	27.6	+0.1 +0.1	+0.1 +0.1	+0.1	+10.1	+0.0	38.2	46.0	-7.8	Line

CKC Laboratories Date: 7/24/2009 Time: 1:31:35 PM Pacific Bioscience Laboratories, Inc WO#: 89757  
FCC 18.307 AVE Consumer Devices Test Lead: Line 115V 60Hz Sequence#: 13 Polarity: Line  
Notes:



## RADIATED EMISSIONS

### Test Setup Photos



### Test Data Sheets

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC PART 18.305 9kHz-30MHz**  
 Work Order #: **89757** Date: 7/24/2009  
 Test Type: **Radiated Scan** Time: 11:59:20 AM  
 Equipment: **Charger Base** Sequence#: 11  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143  
 S/N: SACM28

#### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Mag Loop	2156	06/04/2008	06/04/2010	AN00052

#### Equipment Under Test (\* = EUT):

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

#### Support Devices:

Function	Manufacturer	Model #	S/N
Sonic Applicator	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3

#### Test Conditions / Notes:

Temp: 23°C.  
 Humidity: 43%.  
 Pressure: 102.5kPa.  
 Testing Radiated Emissions per FCC 18.305.  
 Frequency range investigated was 9kHz to 30MHz.  
 EUT is located in the back edge of the test table.  
 EUT is a sonic applicator's charger base.  
 EUT is connected to AC voltage.  
 The Sonic Adapter was tested as part of the total EUT system.

#### Transducer Legend:

T1=CAB-ANP03121-042809	T2=CAB-ANP05360
T3=CAB-ANP05361	T4=CAB-ANP05366
T5=AMP-AN01517-070808	T6=ANT- AN00052-06042008

#### Measurement Data:

#	Freq MHz	Rdng dB $\mu$ V	Reading listed by margin.				Test Distance: 3 Meters			
			T1	T2	T3	T4	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB
			T5	T6	dB	dB	dB	dB $\mu$ V/m	dB $\mu$ V/m	Ant
1	61.431k	85.3	+0.1	+0.0	+0.1	+0.0	-80.0	-9.3	23.5	-32.8
					-24.9	+10.1				180de 100

2	10.000k	44.4	+0.1	+0.0	+0.1	+0.0	-80.0	-13.9	23.5	-37.4	180de
			+4.9	+16.6							100
3	160.454k	74.4	+0.1	+0.0	+0.1	+0.0	-80.0	-23.1	23.5	-46.6	180de
			-27.7	+10.0							100
4	150.000k	73.8	+0.1	+0.0	+0.1	+0.0	-80.0	-23.6	23.5	-47.1	180de
			-27.6	+10.0							100
5	27.841k	63.1	+0.1	+0.0	+0.1	+0.0	-80.0	-23.9	23.5	-47.4	180de
			-18.9	+11.7							100
6	216.903k	71.5	+0.1	+0.0	+0.1	+0.0	-80.0	-26.8	23.5	-50.3	180de
			-28.5	+10.0							100
7	302.621k	70.6	+0.1	+0.0	+0.1	+0.0	-80.0	-28.0	23.5	-51.5	180de
			-28.7	+9.9							100
8	42.057k	63.9	+0.1	+0.0	+0.1	+0.0	-80.0	-28.2	23.5	-51.7	180de
			-22.9	+10.6							100
9	342.345k	69.3	+0.1	+0.1	+0.1	+0.0	-80.0	-29.3	23.5	-52.8	180de
			-28.8	+9.9							100
10	486.603k	67.8	+0.1	+0.1	+0.1	+0.0	-80.0	-30.9	23.5	-54.4	180de
			-28.9	+9.9							100
11	71.048k	63.4	+0.1	+0.0	+0.1	+0.0	-80.0	-31.8	23.5	-55.3	180de
			-25.5	+10.1							100
12	76.206k	63.4	+0.1	+0.0	+0.1	+0.0	-80.0	-32.1	23.5	-55.6	180de
			-25.7	+10.0							100
13	85.544k	63.1	+0.1	+0.0	+0.1	+0.0	-80.0	-32.8	23.5	-56.3	180de
			-26.1	+10.0							100
14	524.236k	66.0	+0.1	+0.1	+0.1	+0.0	-80.0	-32.8	23.5	-56.3	180de
			-29.0	+9.9							100
15	93.489k	62.8	+0.1	+0.0	+0.1	+0.0	-80.0	-33.4	23.5	-56.9	180de
			-26.4	+10.0							100

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC PART 18.305 9kHz-30MHz**  
 Work Order #: **89757** Date: 7/24/2009  
 Test Type: **Radiated Scan** Time: 12:06:02 PM  
 Equipment: **Charger Base** Sequence#: 12  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121
Mag Loop	2156	06/04/2008	06/04/2010	AN00052

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N
Sonic Applicator	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3

**Test Conditions / Notes:**

Temp: 23°C.  
 Humidity: 43%.  
 Pressure: 102.5kPa.  
 Testing Radiated Emissions per FCC 18.305.  
 Frequency range investigated was 9kHz-30MHz.  
 EUT is located in the back edge of the test table.  
 EUT is a sonic applicator's charger base.  
 EUT is connected to AC voltage.  
 The Sonic Adapter was tested as part of the total EUT system.

**Transducer Legend:**

T1=CAB-ANP03121-042809	T2=CAB-ANP05360
T3=CAB-ANP05361	T4=CAB-ANP05366
T5=AMP-AN01517-070808	T6=ANT- AN00052-06042008

**Measurement Data:**

#	Freq MHz	Reading listed by margin.				Test Distance: 3 Meters					
		Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
		T5 dB	T6 dB								
1	61.292k	81.2	+0.1	+0.0	+0.1	+0.0	-80.0	-13.4	23.5	-36.9	90deg 100
			-24.9	+10.1							

2	10.000k	43.2	+0.1 +4.9	+0.0 +16.6	+0.1	+0.0	-80.0	-15.1	23.5	-38.6	90deg 100
3	164.635k	75.3	+0.1 -27.8	+0.0 +10.0	+0.1	+0.0	-80.0	-22.3	23.5	-45.8	90deg 100
4	179.270k	74.3	+0.1 -28.0	+0.0 +10.0	+0.1	+0.0	-80.0	-23.5	23.5	-47.0	90deg 100
5	208.540k	73.0	+0.1 -28.4	+0.0 +10.0	+0.1	+0.0	-80.0	-25.2	23.5	-48.7	90deg 100
6	254.535k	72.4	+0.1 -28.6	+0.0 +9.9	+0.1	+0.0	-80.0	-26.1	23.5	-49.6	90deg 100
7	271.261k	72.2	+0.1 -28.6	+0.0 +9.9	+0.1	+0.0	-80.0	-26.3	23.5	-49.8	90deg 100
8	34.392k	62.8	+0.1 -21.3	+0.0 +11.0	+0.1	+0.0	-80.0	-27.3	23.5	-50.8	90deg 100
9	327.710k	71.1	+0.1 -28.7	+0.1 +9.9	+0.1	+0.0	-80.0	-27.4	23.5	-50.9	90deg 100
10	44.984k	65.0	+0.1 -23.4	+0.0 +10.5	+0.1	+0.0	-80.0	-27.7	23.5	-51.2	90deg 100
11	306.803k	70.3	+0.1 -28.7	+0.0 +9.9	+0.1	+0.0	-80.0	-28.3	23.5	-51.8	90deg 100
12	386.249k	69.6	+0.1 -28.8	+0.1 +9.8	+0.1	+0.0	-80.0	-29.1	23.5	-52.6	90deg 100
13	371.614k	69.2	+0.1 -28.8	+0.1 +9.8	+0.1	+0.0	-80.0	-29.5	23.5	-53.0	90deg 100
14	451.061k	67.9	+0.1 -28.9	+0.1 +9.9	+0.1	+0.0	-80.0	-30.8	23.5	-54.3	90deg 100
15	534.689k	67.8	+0.1 -29.0	+0.1 +9.9	+0.1	+0.0	-80.0	-31.0	23.5	-54.5	90deg 100

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC 18.305 non-ISM Frequency**  
 Work Order #: **89757** Date: 7/24/2009  
 Test Type: **Radiated Scan** Time: 11:37:05 AM  
 Equipment: **Charger Base** Sequence#: 9  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Antenna	2453	12/22/2008	12/22/2010	AN01994
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N
Sonic Applicator	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3

**Test Conditions / Notes:**

Temp: 23°C.  
 Humidity: 43%.  
 Pressure: 102.5kPa.  
 Testing Radiated Emissions per FCC 18.305.  
 Frequency range investigated was 30-1000MHz.  
 EUT is located in the back edge of the test table.  
 EUT is a sonic applicator's charger base.  
 EUT is connected to AC voltage.  
 The Sonic Adapter was tested as part of the total EUT system.

**Transducer Legend:**

T1=ANT AN01994 25-1000MHz	T2=CAB-ANP03121-042809
T3=CAB-ANP05360	T4=CAB-ANP05361
T5=CAB-ANP05366	T6=AMP-AN01517-070808

**Measurement Data:**

#	Freq MHz	Reading listed by margin.				Test Distance: 3 Meters				
		Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Polar Ant
		T5 dB	T6 dB							
1	988.324M	26.3	+24.3	+0.9	+2.0	+0.5	-40.0	-12.8	23.5	-36.3
			+2.2	-29.0			360			Verti 125

2	994.162M	26.4	+24.3 +2.1	+0.9 -29.0	+2.0	+0.5	-40.0 360	-12.8	23.5	-36.3	Verti 125
3	995.329M	26.2	+24.3 +2.1	+0.9 -29.0	+2.1	+0.5	-40.0 360	-12.9	23.5	-36.4	Verti 125
4	909.508M	26.5	+23.2 +2.0	+0.9 -29.3	+1.9	+0.5	-40.0 360	-14.3	23.5	-37.8	Verti 125
5	844.704M	27.1	+22.8 +2.0	+0.8 -29.3	+1.7	+0.5	-40.0 360	-14.4	23.5	-37.9	Verti 125
6	142.161M	39.0	+11.6 +0.8	+0.4 -28.9	+0.7	+0.2	-40.0 360	-16.2	23.5	-39.7	Verti 125
7	71.327M	44.3	+6.6 +0.5	+0.3 -29.2	+0.5	+0.1	-40.0 360	-16.9	23.5	-40.4	Verti 125
8	72.489M	44.0	+6.7 +0.5	+0.3 -29.1	+0.5	+0.1	-40.0 360	-17.0	23.5	-40.5	Verti 125
9	78.253M	41.0	+7.3 +0.5	+0.3 -29.1	+0.5	+0.1	-40.0 360	-19.4	23.5	-42.9	Verti 125
10	55.335M	41.7	+6.6 +0.4	+0.2 -29.1	+0.4	+0.1	-40.0 360	-19.7	23.5	-43.2	Verti 125
11	30.168M	28.2	+20.3 +0.3	+0.2 -29.2	+0.3	+0.1	-40.0 360	-19.8	23.5	-43.3	Verti 125
12	58.954M	43.0	+5.0 +0.4	+0.2 -29.1	+0.4	+0.1	-40.0 360	-20.0	23.5	-43.5	Verti 125
13	32.483M	28.5	+19.6 +0.3	+0.2 -29.1	+0.3	+0.1	-40.0 360	-20.1	23.5	-43.6	Verti 125
14	33.493M	28.6	+19.3 +0.3	+0.2 -29.1	+0.3	+0.1	-40.0 360	-20.3	23.5	-43.8	Verti 125
15	53.315M	40.1	+7.5 +0.4	+0.2 -29.1	+0.4	+0.1	-40.0 360	-20.4	23.5	-43.9	Verti 125

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **FCC 18.305 non-ISM Frequency**  
 Work Order #: **89757** Date: 7/24/2009  
 Test Type: **Radiated Scan** Time: 11:45:46  
 Equipment: **Charger Base** Sequence#: 10  
 Manufacturer: Pacific Bioscience Laboratories, Inc. Tested By: Armando Del Angel  
 Model: PBL5143  
 S/N: SACM28

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8447D Preamp	2944A08601	07/08/2008	07/08/2010	AN01517
Agilent E4440A	MY46186330	01/31/2008	01/31/2010	AN02872
Cable 6'	51	12/30/2008	12/30/2010	ANP05361
Antenna	2453	12/22/2008	12/22/2010	AN01994
Cable 30'	11	11/05/2008	11/05/2010	ANP05366
Cable 20'	16	11/10/2008	11/10/2010	ANP05360
High freq. Cable	N/A	04/28/2009	04/28/2011	AN03121

**Equipment Under Test (\* = EUT):**

Function	Manufacturer	Model #	S/N
Charger Base*	Pacific Bioscience Laboratories, Inc.	PBL5143	SACM28
AC/DC Adapter	Pacific Bioscience Laboratories, Inc.	PBL3100-479	SAWW28

**Support Devices:**

Function	Manufacturer	Model #	S/N
Sonic Applicator	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3

**Test Conditions / Notes:**

Temp: 23°C.  
 Humidity: 43%.  
 Pressure: 102.5kPa.  
 Testing Radiated Emissions per FCC 18.305.  
 Frequency range investigated was 30-1000MHz.  
 EUT is located in the back edge of the test table.  
 EUT is a sonic applicator's charger base.  
 EUT is connected to AC voltage.  
 The Sonic Adapter was tested as part of the total EUT system.

**Transducer Legend:**

T1=ANT AN01994 25-1000MHz	T2=CAB-ANP03121-042809
T3=CAB-ANP05360	T4=CAB-ANP05361
T5=CAB-ANP05366	T6=AMP-AN01517-070808

**Measurement Data:**

#	Freq MHz	Reading listed by margin.				Test Distance: 3 Meters				
		Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB
		T5 dB	T6 dB							
1	807.923M	27.9	+22.6	+0.8	+1.9	+0.4	-40.0	-13.9	23.5	-37.4
			+2.0	-29.5			360			Horiz 150

2	774.061M	28.0	+22.0 +1.9	+0.8 -29.6	+1.7	+0.5	-40.0 360	-14.7	23.5	-38.2	Horiz 150
3	720.350M	27.3	+20.9 +1.9	+0.8 -29.6	+1.7	+0.5	-40.0 360	-16.5	23.5	-40.0	Horiz 150
4	660.216M	27.9	+20.4 +1.8	+0.7 -29.7	+1.6	+0.4	-40.0 360	-16.9	23.5	-40.4	Horiz 150
5	618.765M	27.7	+20.3 +1.9	+0.7 -29.6	+1.6	+0.4	-40.0 360	-17.0	23.5	-40.5	Horiz 150
6	33.535M	28.8	+19.3 +0.3	+0.2 -29.1	+0.3	+0.1	-40.0 360	-20.1	23.5	-43.6	Horiz 150
7	30.126M	27.5	+20.4 +0.3	+0.2 -29.2	+0.3	+0.1	-40.0 360	-20.4	23.5	-43.9	Horiz 150
8	35.303M	28.0	+18.7 +0.3	+0.2 -29.1	+0.3	+0.1	-40.0 360	-21.5	23.5	-45.0	Horiz 150
9	35.892M	28.0	+18.2 +0.4	+0.2 -29.1	+0.4	+0.1	-40.0 360	-21.8	23.5	-45.3	Horiz 150
10	91.370M	32.8	+9.0 +0.5	+0.3 -29.2	+0.5	+0.1	-40.0	-26.0	23.5	-49.5	Horiz 175
11	95.960M	30.3	+9.7 +0.5	+0.3 -29.1	+0.5	+0.1	-40.0	-27.7	23.5	-51.2	Horiz 175
12	73.180M	31.0	+6.8 +0.5	+0.3 -29.1	+0.5	+0.1	-40.0	-29.9	23.5	-53.4	Horiz 175
13	78.620M	30.1	+7.4 +0.5	+0.3 -29.1	+0.5	+0.1	-40.0	-30.2	23.5	-53.7	Horiz 175
14	65.360M	27.0	+5.6 +0.4	+0.3 -29.2	+0.4	+0.1	-40.0	-35.4	23.5	-58.9	Horiz 175