



**TESTING**

CERT #803.01, 803.02, 803.05, 803.06

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

**FOR THE**

**SONIC APPLICATOR (PBL5001), CHARGER BASE (PBL5143)  
& AC/DC ADAPTER (PBL3100-479)**

**FCC PART 15 SUBPART B SECTIONS 15.107 AND 15.109 CLASS B**

**TESTING**

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

**PREPARED FOR:**

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

**PREPARED BY:**

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

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

Date of test: July 24, 2009

**Report No.: FC09-127**

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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:** ANSI C63.4 (2003)

**PURPOSE OF TEST:** To perform testing of the Sonic Applicator (PBL5001), Charger Base (PBL5143) & AC/DC Adapter (PBL3100-479) Charger Base, PBL5143 with the requirements for FCC Part 15 Subpart B Sections 15.107 and 15.109 Class B devices.

## APPROVALS

**QUALITY ASSURANCE:**

A handwritten signature in black ink, appearing to read "Steve Behm".

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Steve Behm, Director of Engineering Services

**TEST PERSONNEL:**

A handwritten signature in black ink, appearing to read "Armando Del Angel".

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Armando Del Angel, Test Engineer

A handwritten signature in black ink, appearing to read "Donald Jones".

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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 15 Subpart B Section 15.107 Class B	Pass
Radiated Emissions	FCC Part 15 Subpart B Section 15.109 Class B	Pass

## CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

The following 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 (EUT) DESCRIPTION

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

## 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

### Sonic Applicator

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

## PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

## 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.

SAMPLE CALCULATIONS		
	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.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
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 15.107 Class B - AVE**

Work Order #: **89757**

Date: 7/24/2009

Test Type: **Conducted Emissions**

Time: 1:39:42 PM

Equipment: **Sonic Applicator**

Sequence#: 15

Manufacturer: Pacific Bioscience Laboratories, Inc.

Tested By: Armando Del Angel

Model: SAMK2

115V 60Hz

S/N: SA-EMC-3

### 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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3
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
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### Test Conditions / Notes:

Temp: 23°C  
Humidity: 43%  
Pressure: 102.5kPa

Testing Conducted Emissions per FCC 15.107 Class B  
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

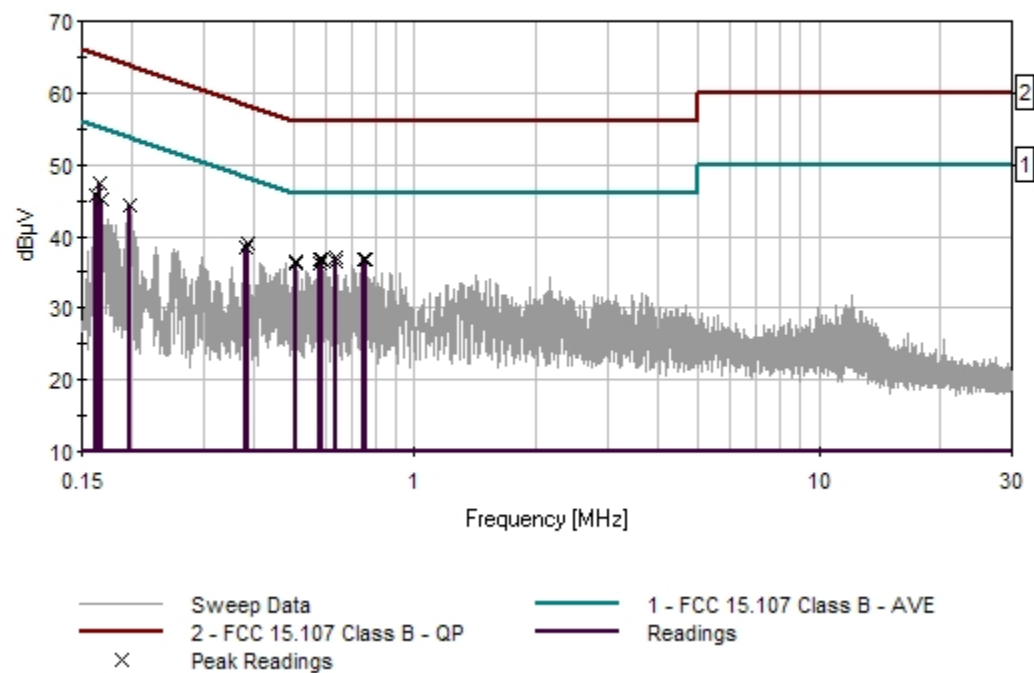
**Measurement Data:**

Reading listed by margin.

Test Lead: Neutral

#	Freq MHz	Rdng dB $\mu$ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	165.271k	36.5	+0.0 +0.5	+0.0 +0.1	+0.1	+10.1	+0.0	47.3	55.2	-7.9	Neutr
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 15.107 Class B - AVE 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 15.107 Class B - AVE**  
 Work Order #: **89757**  
 Test Type: **Conducted Emissions**  
 Equipment: **Sonic Applicator**  
 Manufacturer: Pacific Bioscience Laboratories, Inc.  
 Model: SAMK2  
 S/N: SA-EMC-3

Date: 7/24/2009  
 Time: 1:42:33 PM  
 Sequence#: 16  
 Tested By: Armando Del Angel  
 115V 60Hz

**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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3
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
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**Test Conditions / Notes:**

Temp: 23°C Humidity: 43% Pressure: 102.5kPa  Testing Conducted Emissions per FCC 15.107 Class B 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.
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**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

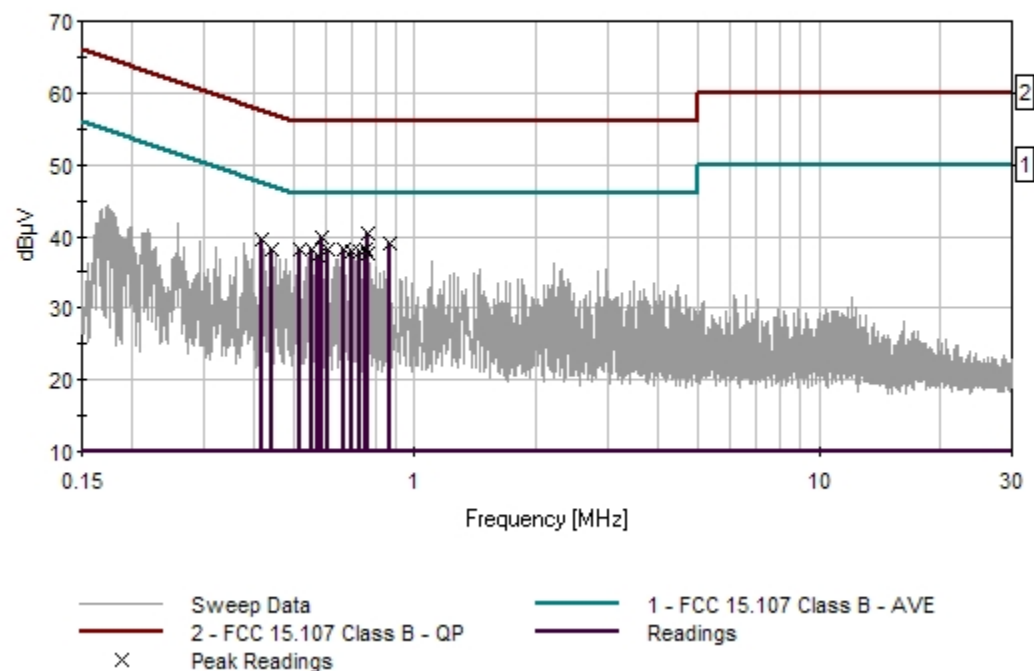
**Measurement Data:**

Reading listed by margin.

Test Lead: Line

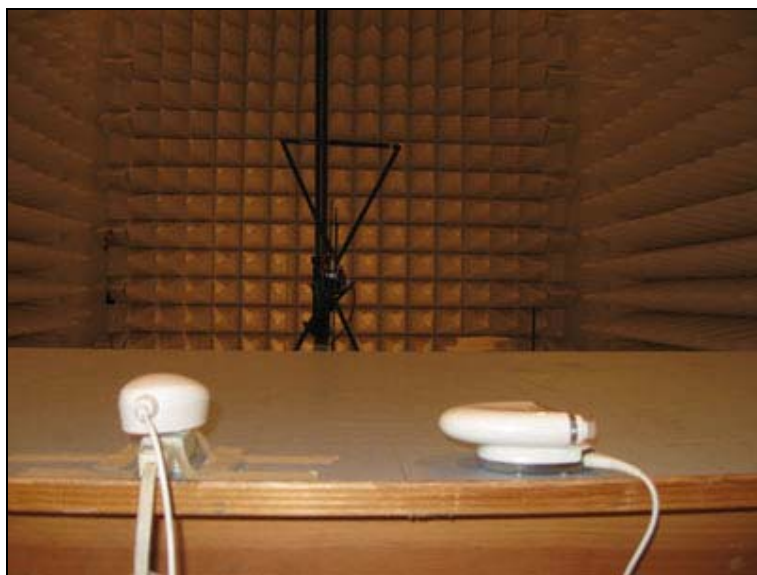
#	Freq MHz	Rdng dB $\mu$ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	762.307k	29.6	+0.1 +0.2	+0.1 +0.1	+0.1	+10.1	+0.0	40.3	46.0	-5.7	Line
2	590.687k	29.4	+0.1 +0.2	+0.0 +0.1	+0.1	+10.1	+0.0	40.0	46.0	-6.0	Line
3	864.844k	28.3	+0.1 +0.2	+0.1 +0.1	+0.1	+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 15.107 Class B - AVE Test Lead: Line 115V 60Hz Sequence#: 16 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: **15.109 CLASS B**

Work Order #: **89757**

Date: 7/24/2009

Test Type: **Radiated Scan**

Time: 09:37:37

Equipment: **Sonic Applicator**

Sequence#: 1

Manufacturer: Pacific Bioscience Laboratories, Inc.

Tested By: Armando Del Angel

Model: SAMK2

S/N: SA-EMC-3

### 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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3
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
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### Test Conditions / Notes:

Temp: 23°C  
Humidity: 43%  
Pressure: 102.5kPa

Testing Radiated Emissions per FCC 15.109 Class B  
Frequency range investigated was 30-1000MHz.

EUT is located in the back edge of the test table.  
EUT is a sonic applicator.  
EUT is attached to a charger base.  
EUT is in charging mode.



**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:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	71.793M	44.7	+6.6 +0.5	+0.3 -29.2	+0.5	+0.1	+0.0 360	23.5	40.0	-16.5	Verti 130
2	920.092M	27.6	+23.4 +2.0	+0.9 -29.3	+2.0	+0.5	+0.0 360	27.1	46.0	-18.9	Verti 130
3	889.581M	27.7	+23.0 +2.0	+0.9 -29.3	+1.8	+0.5	+0.0 360	26.6	46.0	-19.4	Verti 130
4	78.490M	39.6	+7.3 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 360	19.2	40.0	-20.8	Verti 130
5	54.180M	40.0	+7.1 +0.4	+0.2 -29.1	+0.4	+0.1	+0.0 360	19.1	40.0	-20.9	Verti 130
6	49.530M	37.2	+9.3 +0.4	+0.2 -29.1	+0.4	+0.1	+0.0 360	18.5	40.0	-21.5	Verti 130
7	59.960M	41.3	+4.6 +0.4	+0.2 -29.1	+0.4	+0.1	+0.0 360	17.9	40.0	-22.1	Verti 130
8	143.580M	36.4	+11.6 +0.8	+0.4 -28.9	+0.7	+0.2	+0.0 34	21.2	43.5	-22.3	Verti 130
9	85.990M	36.0	+8.3 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 360	16.6	40.0	-23.4	Verti 130
10	165.560M	35.0	+10.2 +0.9	+0.4 -28.8	+0.8	+0.2	+0.0	18.7	43.5	-24.8	Verti 130

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

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **15.109 CLASS B**  
 Work Order #: **89757**  
 Test Type: **Radiated Scan**  
 Equipment: **Sonic Applicator**  
 Manufacturer: Pacific Bioscience Laboratories, Inc.  
 Model: SAMK2  
 S/N: SA-EMC-3

Date: 7/24/2009  
 Time: 09:50:22  
 Sequence#: 2  
 Tested By: Armando Del Angel

**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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-3
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
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**Test Conditions / Notes:**

Temp: 23°C Humidity: 43% Pressure: 102.5kPa  Testing Radiated Emissions per FCC 15.109 Class B Frequency range investigated was 30-1000MHz.  EUT is located in the back edge of the test table. EUT is a sonic applicator. EUT is attached to a charger base. EUT is in charging mode.
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**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:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 T6 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	888.260M	27.8	+23.0 +2.0	+0.9 -29.3	+1.8	+0.5	+0.0 360	26.7	46.0	-19.3	Horiz 130
2	878.410M	27.5	+23.0 +2.0	+0.9 -29.3	+1.8	+0.5	+0.0 360	26.4	46.0	-19.6	Horiz 130
3	894.146M	27.3	+23.1 +2.0	+0.9 -29.3	+1.8	+0.5	+0.0 360	26.3	46.0	-19.7	Horiz 130
4	73.620M	32.2	+6.8 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 184	11.3	40.0	-28.7	Horiz 251
5	87.640M	30.5	+8.5 +0.5	+0.3 -29.2	+0.5	+0.1	+0.0 184	11.2	40.0	-28.8	Horiz 251
6	80.010M	29.7	+7.5 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 184	9.5	40.0	-30.5	Horiz 251
7	100.420M	29.5	+10.2 +0.6	+0.3 -29.1	+0.6	+0.1	+0.0 184	12.2	43.5	-31.3	Horiz 251
8	68.330M	29.6	+6.1 +0.5	+0.3 -29.2	+0.5	+0.1	+0.0 184	7.9	40.0	-32.1	Horiz 251
9	91.380M	30.2	+9.0 +0.5	+0.3 -29.2	+0.5	+0.1	+0.0 184	11.4	43.5	-32.1	Horiz 251
10	95.750M	29.3	+9.6 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 184	11.2	43.5	-32.3	Horiz 251

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

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **15.109 CLASS B**  
 Work Order #: **89757**  
 Test Type: **Radiated Scan**  
 Equipment: **Sonic Applicator**  
 Manufacturer: Pacific Bioscience Laboratories, Inc.  
 Model: SAMK2  
 S/N: SA-EMC-1

Date: 7/24/2009  
 Time: 10:35:32  
 Sequence#: 5  
 Tested By: Armando Del Angel

**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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-1

**Support Devices:**

Function	Manufacturer	Model #	S/N
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**Test Conditions / Notes:**

Temp: 23°C Humidity: 43% Pressure: 102.5kPa  Testing Radiated Emissions per FCC 15.109 Class B Frequency range investigated was 30-1000MHz.  EUT is located in the back edge of the test table. EUT is a sonic applicator. EUT is in operational mode with a 1% duty Cycle.
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**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:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	927.419M	27.0	+23.5 +2.0	+0.9 -29.2	+2.0	+0.5	+0.0 360	26.7	46.0	-19.3	Verti 130
2	929.461M	27.0	+23.5 +2.0	+0.9 -29.2	+2.0	+0.5	+0.0 360	26.7	46.0	-19.3	Verti 130

3	938.704M	26.7	+23.6 +2.0	+0.9 -29.2	+2.0	+0.5	+0.0 360	26.5	46.0	-19.5	Verti 130
4	939.580M	26.7	+23.6 +2.0	+0.9 -29.2	+2.0	+0.5	+0.0 360	26.5	46.0	-19.5	Verti 130
5	910.242M	27.2	+23.2 +2.0	+0.9 -29.3	+1.9	+0.5	+0.0 360	26.4	46.0	-19.6	Verti 130
6	935.347M	26.6	+23.6 +2.0	+0.9 -29.2	+2.0	+0.5	+0.0 360	26.4	46.0	-19.6	Verti 130
7	33.710M	28.9	+19.3 +0.3	+0.2 -29.1	+0.3	+0.1	+0.0 360	20.0	40.0	-20.0	Verti 109
8	85.860M	30.9	+8.3 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 360	11.5	40.0	-28.5	Verti 109
9	47.640M	28.9	+10.4 +0.4	+0.2 -29.1	+0.4	+0.1	+0.0 360	11.3	40.0	-28.7	Verti 109
10	95.380M	29.5	+9.6 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0 360	11.4	43.5	-32.1	Verti 109

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

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **15.109 CLASS B**  
 Work Order #: **89757**  
 Test Type: **Radiated Scan**  
 Equipment: **Sonic Applicator**  
 Manufacturer: Pacific Bioscience Laboratories, Inc.  
 Model: SAMK2  
 S/N: SA-EMC-1

Date: 7/24/2009  
 Time: 10:44:29  
 Sequence#: 6  
 Tested By: Armando Del Angel

**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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-1

**Support Devices:**

Function	Manufacturer	Model #	S/N
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**Test Conditions / Notes:**

Temp: 23°C Humidity: 43% Pressure: 102.5kPa  Testing Radiated Emissions per FCC 15.109 Class B Frequency range investigated was 30-1000MHz.  EUT is located in the back edge of the test table. EUT is a sonic applicator. EUT is in operational mode with a 1% duty Cycle.
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**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:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	831.276M	27.7	+22.7 +2.0	+0.8 -29.4	+1.8	+0.5	+0.0 360	26.1	46.0	-19.9	Horiz 150

2	30.042M	27.4	+20.4 +0.3	+0.2 -29.2	+0.3	+0.1	+0.0 360	19.5	40.0	-20.5	Horiz 150
3	33.746M	27.6	+19.3 +0.3	+0.2 -29.1	+0.3	+0.1	+0.0 360	18.7	40.0	-21.3	Horiz 150
4	770.558M	27.3	+21.9 +1.9	+0.8 -29.6	+1.7	+0.5	+0.0 360	24.5	46.0	-21.5	Horiz 150
5	747.206M	27.5	+21.5 +1.9	+0.8 -29.6	+1.7	+0.5	+0.0 360	24.3	46.0	-21.7	Horiz 150
6	761.801M	27.0	+21.8 +1.9	+0.8 -29.6	+1.7	+0.5	+0.0 360	24.1	46.0	-21.9	Horiz 150
7	587.239M	28.8	+20.0 +1.9	+0.7 -29.6	+1.6	+0.4	+0.0 360	23.8	46.0	-22.2	Horiz 150
8	584.320M	28.6	+19.9 +1.9	+0.7 -29.6	+1.6	+0.4	+0.0 360	23.5	46.0	-22.5	Horiz 150
9	596.580M	28.4	+20.1 +1.9	+0.7 -29.6	+1.6	+0.4	+0.0 360	23.5	46.0	-22.5	Horiz 150
10	661.968M	27.9	+20.4 +1.8	+0.7 -29.7	+1.6	+0.4	+0.0 360	23.1	46.0	-22.9	Horiz 150
11	48.190M	29.0	+10.1 +0.4	+0.2 -29.1	+0.4	+0.1	+0.0	11.1	40.0	-28.9	Horiz 180
12	113.980M	29.2	+11.3 +0.6	+0.3 -29.0	+0.6	+0.2	+0.0	13.2	43.5	-30.3	Horiz 180
13	130.130M	28.4	+11.7 +0.7	+0.4 -29.0	+0.7	+0.2	+0.0	13.1	43.5	-30.4	Horiz 180
14	86.610M	28.7	+8.4 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0	9.4	40.0	-30.6	Horiz 180
15	68.590M	28.5	+6.2 +0.5	+0.3 -29.2	+0.5	+0.1	+0.0 80	6.9	40.0	-33.1	Horiz 180

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

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **15.109 CLASS B**  
 Work Order #: **89757**  
 Test Type: **Radiated Scan**  
 Equipment: **Sonic Applicator**  
 Manufacturer: Pacific Bioscience Laboratories, Inc.  
 Model: SAMK2  
 S/N: SA-EMC-1

Date: 7/24/2009  
 Time: 10:37:49  
 Sequence#: 3  
 Tested By: Armando Del Angel

**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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-1

**Support Devices:**

Function	Manufacturer	Model #	S/N
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**Test Conditions / Notes:**

Temp: 23°C Humidity: 43% Pressure: 102.5kPa  Testing Radiated Emissions per FCC 15.109 Class B Frequency range investigated was 30-1000MHz.  EUT is located in the back edge of the test table. EUT is a sonic applicator. EUT is in operational mode with a 30% duty Cycle.
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**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:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	901.233M	27.1	+23.1 +2.0	+0.9 -29.3	+1.9	+0.5	+0.0 360	26.2	46.0	-19.8	Verti 130



2	917.089M	26.8	+23.3 +2.0	+0.9 -29.3	+1.9	+0.5	+0.0 360	26.1	46.0	-19.9	Verti 130
3	922.134M	26.6	+23.4 +2.0	+0.9 -29.3	+2.0	+0.5	+0.0 360	26.1	46.0	-19.9	Verti 130
4	818.350M	27.7	+22.6 +2.0	+0.8 -29.4	+1.9	+0.4	+0.0 360	26.0	46.0	-20.0	Verti 130
5	847.059M	27.5	+22.8 +2.0	+0.8 -29.3	+1.7	+0.5	+0.0 360	26.0	46.0	-20.0	Verti 130
6	909.041M	26.8	+23.2 +2.0	+0.9 -29.3	+1.9	+0.5	+0.0 360	26.0	46.0	-20.0	Verti 130
7	858.951M	27.3	+22.9 +2.0	+0.8 -29.3	+1.7	+0.5	+0.0 360	25.9	46.0	-20.1	Verti 130
8	398.465M	29.6	+16.2 +1.4	+0.6 -29.0	+1.3	+0.3	+0.0 360	20.4	46.0	-25.6	Verti 109
9	85.880M	30.8	+8.3 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0	11.4	40.0	-28.6	Verti 99
10	56.510M	30.1	+6.0 +0.4	+0.2 -29.1	+0.4	+0.1	+0.0 155	8.1	40.0	-31.9	Verti 99
11	95.390M	29.3	+9.6 +0.5	+0.3 -29.1	+0.5	+0.1	+0.0	11.2	43.5	-32.3	Verti 99

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

Customer: **Pacific Bioscience Laboratories, Inc**  
 Specification: **15.109 CLASS B**  
 Work Order #: **89757**  
 Test Type: **Radiated Scan**  
 Equipment: **Sonic Applicator**  
 Manufacturer: Pacific Bioscience Laboratories, Inc.  
 Model: SAMK2  
 S/N: SA-EMC-1

Date: 7/24/2009  
 Time: 10:23:29  
 Sequence#: 4  
 Tested By: Armando Del Angel

**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
Sonic Applicator*	Pacific Bioscience Laboratories, Inc.	SAMK2	SA-EMC-1

**Support Devices:**

Function	Manufacturer	Model #	S/N
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**Test Conditions / Notes:**

Temp: 23°C Humidity: 43% Pressure: 102.5kPa  Testing Radiated Emissions per FCC 15.109 Class B Frequency range investigated was 30-1000MHz.  EUT is located in the back edge of the test table. EUT is a sonic applicator. EUT is in operational mode with a 30% duty Cycle.
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**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:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	927.900M	27.1	+23.5 +2.0	+0.9 -29.2	+2.0	+0.5	+0.0 360	26.8	46.0	-19.2	Horiz 130

2	833.846M	28.0	+22.7 +2.0	+0.8 -29.4	+1.8	+0.5	+0.0 360	26.4	46.0	-19.6	Horiz 130
3	878.650M	27.4	+23.0 +2.0	+0.9 -29.3	+1.8	+0.5	+0.0 360	26.3	46.0	-19.7	Horiz 130
4	903.996M	27.0	+23.2 +2.0	+0.9 -29.3	+1.9	+0.5	+0.0 360	26.2	46.0	-19.8	Horiz 130
5	911.203M	26.9	+23.3 +2.0	+0.9 -29.3	+1.9	+0.5	+0.0 360	26.2	46.0	-19.8	Horiz 130
6	884.656M	27.0	+23.0 +2.0	+0.9 -29.3	+1.8	+0.5	+0.0 360	25.9	46.0	-20.1	Horiz 130
7	158.790M	27.9	+10.8 +0.8	+0.4 -28.9	+0.8	+0.2	+0.0	12.0	43.5	-31.5	Horiz 175
8	108.570M	27.7	+10.9 +0.6	+0.3 -29.1	+0.6	+0.2	+0.0	11.2	43.5	-32.3	Horiz 175
9	229.800M	28.1	+11.3 +1.0	+0.5 -28.6	+1.0	+0.2	+0.0	13.5	46.0	-32.5	Horiz 175
10	68.070M	28.5	+6.1 +0.5	+0.3 -29.2	+0.5	+0.1	+0.0 108	6.8	40.0	-33.2	Horiz 175