



**PACIFIC BIOSCIENCE LABORATORIES TEST REPORT**  
**FOR THE**  
**FACE BRUSH WITH CHARGING DOCK, PLUS P/N: 3031**

**CISPR 22 (1997) CLASS B**

**TESTING**

**DATE OF ISSUE: NOVEMBER 21, 2007**

**PREPARED FOR:**

Pacific BioScience Laboratories  
13222 SE 30<sup>th</sup> Street, A-1  
Bellevue, WA 98005

P.O. No.: 001677  
W.O. No.: 87039

**PREPARED BY:**

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Mariposa, CA 95338

Date of test: November 19, 2007

**Report No.: CI07-013**

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## TABLE OF CONTENTS

Administrative Information .....	3
Approvals .....	3
Site File Registration Numbers .....	3
Equipment Under Test (EUT) Description .....	4
Equipment Under Test .....	4
Peripheral Devices .....	4
Summary of Results .....	4
Conditions During Testing .....	4
Report of Emissions Measurements .....	5
Testing Parameters .....	5
Conducted Emissions .....	7
Radiated Emissions .....	12

## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** November 19, 2007

**DATE OF RECEIPT:** November 19, 2007

**REPRESENTATIVE:** Ken Pilcher

**MANUFACTURER:**

Pacific BioScience Laboratories  
13222 SE 30<sup>th</sup> Street, A-1  
Bellevue, WA 98005

**TEST LOCATION:**

CKC Laboratories, Inc.  
14797 NE 95th  
Redmond, WA 98052

**TEST METHOD:** ANSI C63.4 (2003)

**PURPOSE OF TEST:** To perform the testing of the Face Brush with Charging Dock, Plus P/N: 3031 with the requirements for CISPR 22 Class B devices.

## APPROVALS

**QUALITY ASSURANCE:**

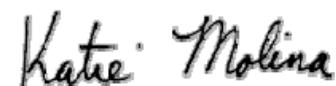


Steve Behm, Director of Engineering Services

**TEST PERSONNEL:**



Ryan Rutledge, EMC Test Technologist



Katie Molina, Senior EMC Engineer/Lab Manager

## SITE FILE REGISTRATION NUMBERS

Location	Japan	Canada	FCC
Bothell	R-2296 & C-2506	IC 4653	318736

## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit and that the part number 3031 is a three power setting “MD” version of the Clarisonic Plus model. The power settings are low, normal, and high. Part number 3030 is a two power setting “Classic” version of the Clarisonic Plus model. The 3030 is electrically and mechanically identical to the 3031, except the software only allows operation in low and normal power settings. The two models have the same power and duty cycles for the low and normal power settings. The following model has been tested by CKC Laboratories: **3031**

The manufacturer states since the 3030 product is a subset of the 3031 product, testing of part number 3031 demonstrates acceptability of the 3030 to the same requirements.

## EQUIPMENT UNDER TEST

### Face Brush

Manuf: Pacific BioScience Laboratories, Inc.  
Model: Plus P/N: 3031  
Serial: NA

### Face Brush Charger

Manuf: Pacific BioScience Laboratories, Inc.  
Model: Base P/N: 3029  
Serial: NA

### AC Adapter

Manuf: Hon-Kwang  
Model: HK-J102-A12  
Serial: NA

## PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

## SUMMARY OF RESULTS

Test	Specification	Results
Radiated Emissions	CISPR 22 (1997) to ANSI C63.4 (2003) Class B	Pass
Mains Conducted Emissions	CISPR 22 (1997) to ANSI C63.4 (2003) Class B	Pass

## CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

## 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 dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ 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.

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 were 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

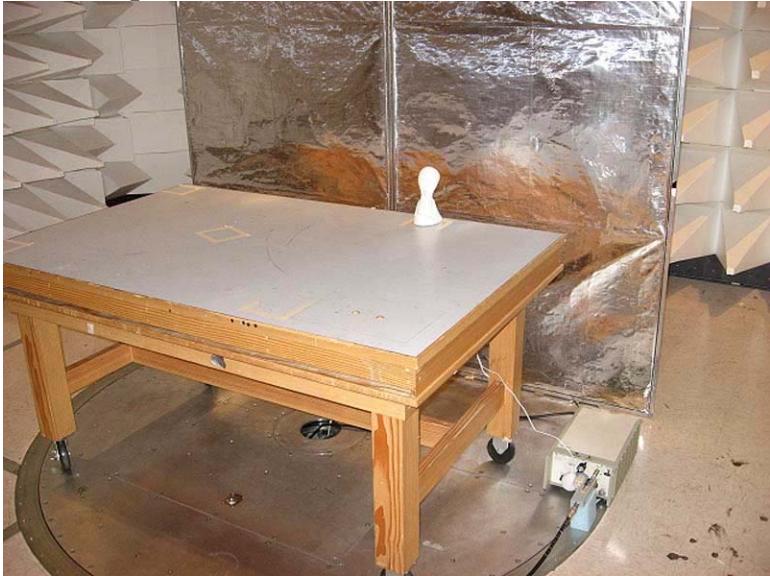
When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

### Average

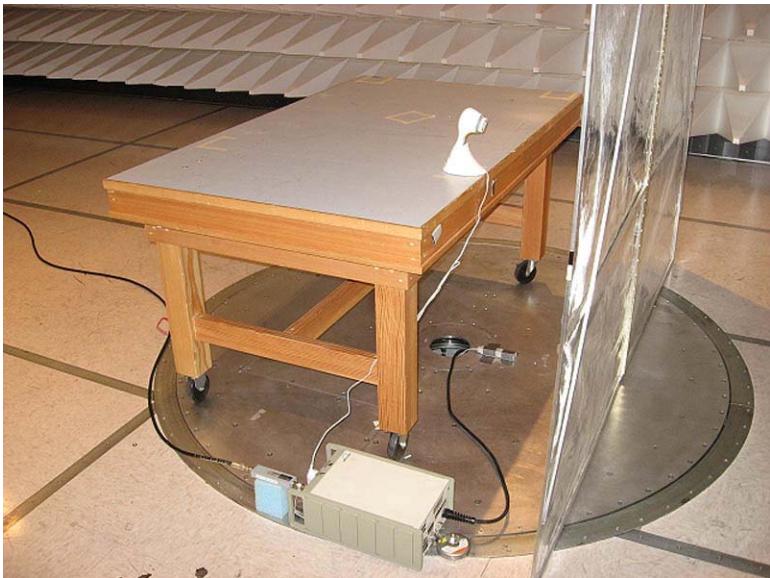
For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear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

## CONDUCTED EMISSIONS

### Test Setup Photos



Mains Conducted Emissions - Front View



Mains Conducted Emissions - Side View

## Test Data Sheets

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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B COND [AVE]**  
 Work Order #: **87039** Date: 11/19/2007  
 Test Type: **Conducted Emissions** Time: 11:17:24  
 Equipment: **Face Brush** Sequence #: 15  
 Manufacturer: Pacific BioScience Laboratories Tested By: Ryan Rutledge  
 Model: Plus P/N: 3031 120V 60Hz  
 S/N: none

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
TTE High Pass Filter	S/N: G7752	07/17/2006	07/17/2008	AN02611
10dB BNC Attenuator	S/N: 7	05/01/2006	05/01/2008	ANP05506
EMCO 3816/2NM	S/N: 9606-1049	06/01/2007	06/01/2009	AN01492
LISN				

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none
Face Brush Charger	Pacific BioScience Laboratories	Base P/N: 3029	none
AC adapter	Hon-Kwang	HK-J102-A12	none

### Support Devices:

Function	Manufacturer	Model #	S/N

### Test Conditions / Notes:

Charging Plus Handle

### Transducer Legend:

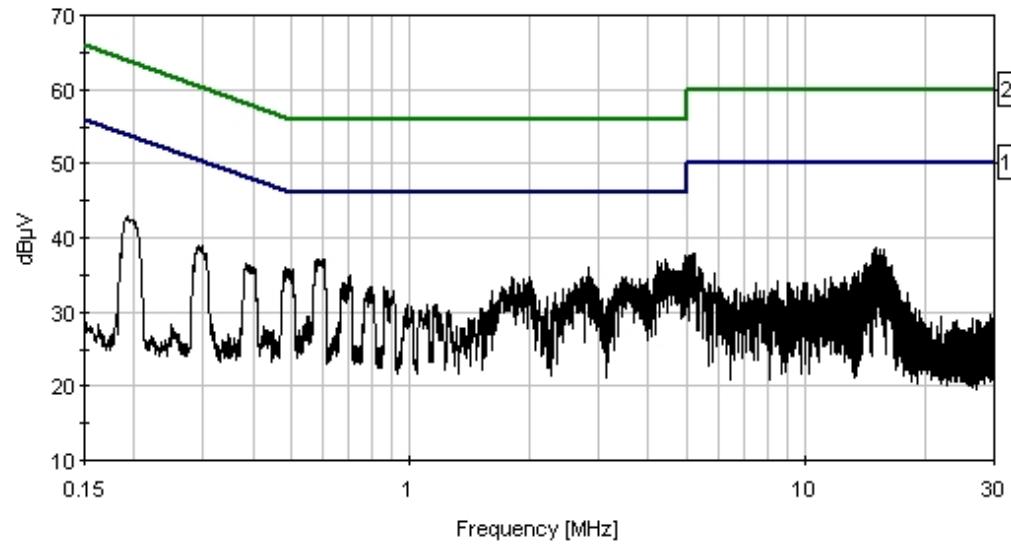
T1=ATT-ANP05506-050106	T2=CAB-ANP05444-042607 - CPC3 Cable Set
T3=CAB-ANP05360-110906	T4=CDN-AN01492-060107 - Line
T5=FIL-AN02611-071706	

### Measurement Data:

#	Freq	Rdng	Reading listed by margin.				Dist	Corr	Spec	Margin	Polar
			T1	T2	T3	T4					
			T5								
			MHz	dB $\mu$ V	dB	dB	dB	Table	dB $\mu$ V	dB $\mu$ V	dB
1	4.970M	26.9	+10.0 +0.1	+0.2	+0.1	+0.2	+0.0	37.5	46.0	-8.5	Line
2	588.142k	26.6	+10.0 +0.2	+0.1	+0.1	+0.1	+0.0	37.1	46.0	-8.9	Line
3	4.443M	26.6	+10.0 +0.1	+0.2	+0.1	+0.1	+0.0	37.1	46.0	-8.9	Line
4	4.243M	26.4	+10.0 +0.1	+0.2	+0.1	+0.1	+0.0	36.9	46.0	-9.1	Line

5	4.428M	26.2	+10.0 +0.1	+0.2	+0.1	+0.1	+0.0	36.7	46.0	-9.3	Line
6	4.311M	26.0	+10.0 +0.1	+0.2	+0.1	+0.1	+0.0	36.5	46.0	-9.5	Line
7	4.875M	25.9	+10.0 +0.1	+0.2	+0.1	+0.2	+0.0	36.5	46.0	-9.5	Line
8	4.987M	25.7	+10.0 +0.1	+0.2	+0.1	+0.2	+0.0	36.3	46.0	-9.7	Line
9	4.477M	25.4	+10.0 +0.1	+0.2	+0.1	+0.2	+0.0	36.0	46.0	-10.0	Line
10	4.947M	25.4	+10.0 +0.1	+0.2	+0.1	+0.2	+0.0	36.0	46.0	-10.0	Line

CKC Laboratories Date: 11/19/2007 Time: 11:17:24 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B COND [AVE] Test Lead: Line 120V 60Hz Sequence#: 15 Polarity: Line  
 Notes: Charging Plus handle



— Sweep Data  
 — 1 - CISPR 22:1997 CLASS B COND [AVE]  
 — 2 - CISPR 22:1997 CLASS B COND [QP]

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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B COND [AVE]**  
 Work Order #: **87039** Date: **11/19/2007**  
 Test Type: **Conducted Emissions** Time: **11:22:46**  
 Equipment: **Face Brush** Sequence #: **16**  
 Manufacturer: Pacific BioScience Laboratories Tested By: **Ryan Rutledge**  
 Model: Plus P/N: 3031 **120V 60Hz**  
 S/N: none

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
TTE High Pass Filter	S/N: G7752	07/17/2006	07/17/2008	AN02611
10dB BNC Attenuator	S/N: 7	05/01/2006	05/01/2008	ANP05506
EMCO 3816/2NM	S/N: 9606-1049	06/01/2007	06/01/2009	AN01492
LISN				

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none
Face Brush Charger	Pacific BioScience Laboratories	Base P/N: 3029	none
AC adapter	Hon-Kwang	HK-J102-A12	none

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Charging Plus Handle

**Transducer Legend:**

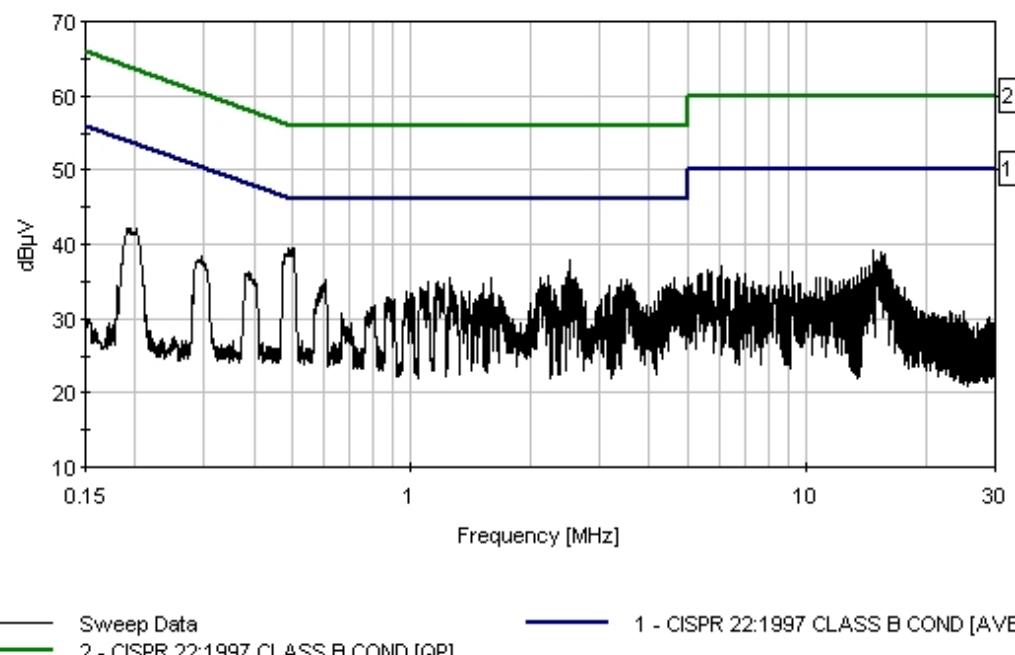
T1=ATT-ANP05506-050106	T2=CAB-ANP05444-042607 - CPC3 Cable Set
T3=CAB-ANP05360-110906	T4=CDN-AN01492-060107 - Neutral
T5=FIL-AN02611-071706	

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dB $\mu$ V	dB	dB	dB	dB	Table	dB $\mu$ V	dB $\mu$ V	dB	Ant
1	501.604k	28.7	+10.0 +0.3	+0.1	+0.1	+0.2	+0.0	39.4	46.0	-6.6	Neutr
2	2.525M	27.2	+10.0 +0.2	+0.2	+0.1	+0.2	+0.0	37.9	46.0	-8.1	Neutr
3	2.497M	25.7	+10.0 +0.2	+0.2	+0.1	+0.2	+0.0	36.4	46.0	-9.6	Neutr
4	2.213M	25.1	+10.0 +0.2	+0.2	+0.1	+0.2	+0.0	35.8	46.0	-10.2	Neutr
5	2.121M	24.9	+10.0 +0.2	+0.2	+0.1	+0.2	+0.0	35.6	46.0	-10.4	Neutr

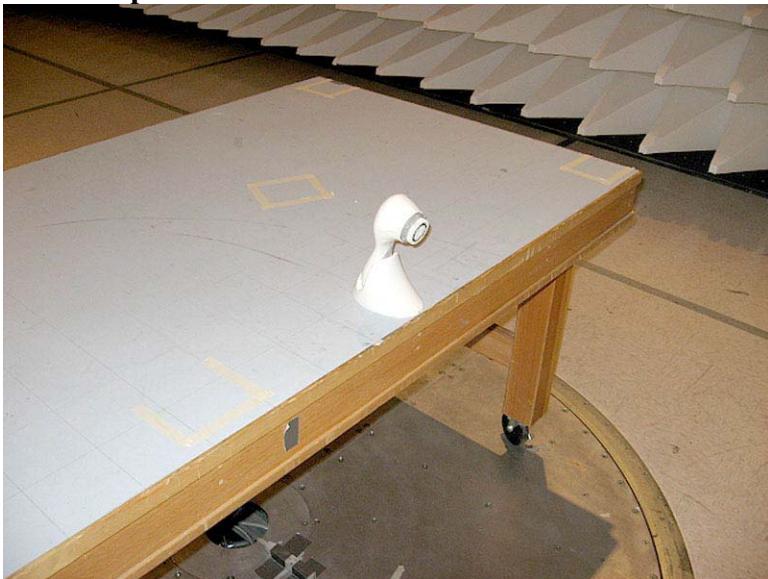
6	2.470M	24.9	+10.0 +0.2	+0.2	+0.1	+0.2	+0.0	35.6	46.0	-10.4	Neutr
7	4.647M	24.9	+10.0 +0.1	+0.2	+0.1	+0.3	+0.0	35.6	46.0	-10.4	Neutr
8	1.258M	24.8	+10.0 +0.2	+0.1	+0.1	+0.2	+0.0	35.4	46.0	-10.6	Neutr
9	1.596M	24.8	+10.0 +0.2	+0.1	+0.1	+0.2	+0.0	35.4	46.0	-10.6	Neutr
10	2.608M	24.7	+10.0 +0.2	+0.2	+0.1	+0.2	+0.0	35.4	46.0	-10.6	Neutr

CKC Laboratories Date: 11/19/2007 Time: 11:22:46 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B COND [AVE] Test Lead: Neutral 120V 60Hz Sequence#: 16 Polarity: Neutral  
 Notes: Charging Plus handle

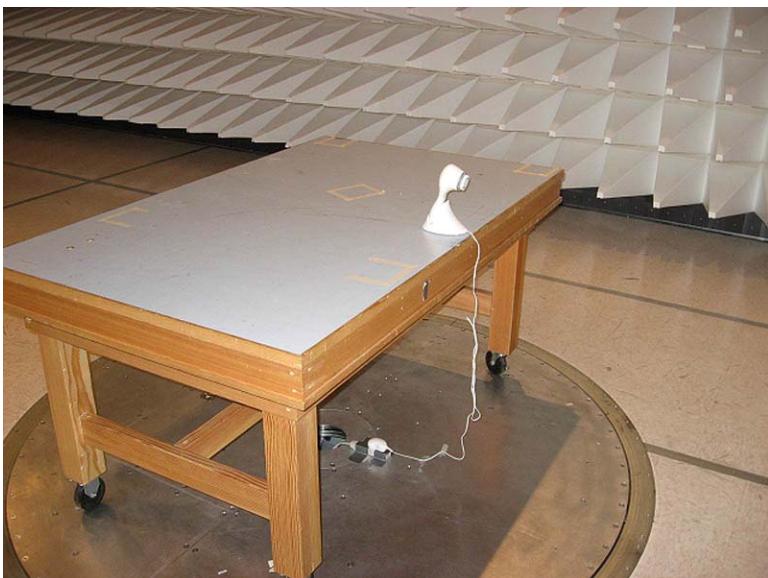


## RADIATED EMISSIONS

### Test Setup Photos



Radiated Emissions - Front View



Radiated Emissions - Side View

## Test Data Sheets

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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B RADIATED**  
 Work Order #: **87039** Date: 11/19/2007  
 Test Type: **Radiated Scan** Time: 09:05:05  
 Equipment: **Face Brush** Sequence#: 2  
 Manufacturer: Pacific BioScience Laboratories Tested By: Ryan Rutledge  
 Model: Plus P/N: 3031  
 S/N: none

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
HP 8447D PreAmp	S/N: 2944A08601	07/10/2006	07/10/2008	AN01517
Chase BILOG	S/N: 2458	01/31/2007	01/31/2009	AN01993

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none
Face Brush Charger	Pacific BioScience Laboratories	Base P/N: 3029	none
AC adapter	Hon-Kwang	HK-J102-A12	none

### Support Devices:

Function	Manufacturer	Model #	S/N
Charging Plus Handle			

### Test Conditions / Notes:

Charging Plus Handle
----------------------

### Transducer Legend:

T1=ANT AN01993 25-1000MHz	T2=AMP-AN01517-071006
T3=CAB-ANP05444-042607 - CPC3 Cable Set	T4=CAB-ANP05360-110906

### Measurement Data:

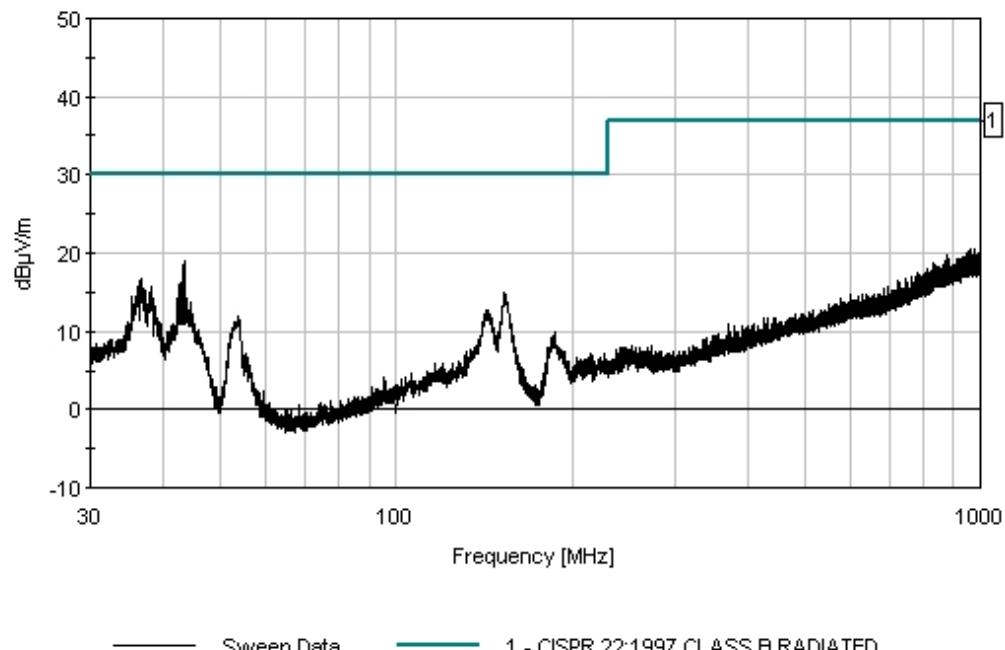
Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	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
1	43.177M	42.3	+12.7	-27.6	+0.7	+0.4	-10.0 360	18.5	30.0	-11.5	Horiz 100
2	36.655M	37.8	+15.6	-27.6	+0.6	+0.3	-10.0 360	16.7	30.0	-13.3	Horiz 100
3	42.711M	40.0	+12.8	-27.6	+0.7	+0.4	-10.0 360	16.3	30.0	-13.7	Horiz 100
4	36.189M	36.5	+15.9	-27.6	+0.6	+0.3	-10.0 360	15.7	30.0	-14.3	Horiz 100
5	38.119M	37.8	+14.5	-27.6	+0.6	+0.3	-10.0 360	15.6	30.0	-14.4	Horiz 100

6	153.412M	39.6	+11.0	-27.4	+1.2	+0.6	-10.0	15.0	30.0	-15.0	Horiz
							360				100
7	35.357M	34.5	+16.5	-27.5	+0.6	+0.3	-10.0	14.4	30.0	-15.6	Horiz
							360				100
8	42.312M	37.8	+12.9	-27.7	+0.7	+0.4	-10.0	14.1	30.0	-15.9	Horiz
							360				100
9	44.607M	37.7	+12.6	-27.6	+0.7	+0.4	-10.0	13.8	30.0	-16.2	Horiz
							360				100
10	975.961M	29.1	+24.2	-27.7	+2.9	+2.0	-10.0	20.5	37.0	-16.5	Horiz
							360				100
11	958.715M	29.1	+24.1	-27.6	+2.8	+2.0	-10.0	20.4	37.0	-16.6	Horiz
							360				100
12	43.519M	34.9	+12.7	-27.6	+0.7	+0.4	-10.0	11.1	30.0	-18.9	Horiz
	QP						79				305
^	43.614M	45.5	+12.7	-27.6	+0.7	+0.4	-10.0	21.7	30.0	-8.3	Horiz
							79				305

CKC Laboratories Date: 11/19/2007 Time: 09:05:05 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B RADIATED Test Distance: 3 Meters Sequence#: 2 Polarity: Horiz  
 Notes: Charging Plus handle



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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B RADIATED**  
 Work Order #: **87039** Date: **11/19/2007**  
 Test Type: **Radiated Scan** Time: **08:54:25**  
 Equipment: **Face Brush** Sequence#: **1**  
 Manufacturer: Pacific BioScience Laboratories Tested By: **Ryan Rutledge**  
 Model: Plus P/N: 3031  
 S/N: none

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
HP 8447D PreAmp	S/N: 2944A08601	07/10/2006	07/10/2008	AN01517
Chase BILOG	S/N: 2458	01/31/2007	01/31/2009	AN01993

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none
Face Brush Charger	Pacific BioScience Laboratories	Base P/N: 3029	none
AC adapter	Hon-Kwang	HK-J102-A12	none

**Support Devices:**

Function	Manufacturer	Model #	S/N
Charging Plus Handle			

**Test Conditions / Notes:**

Charging Plus Handle
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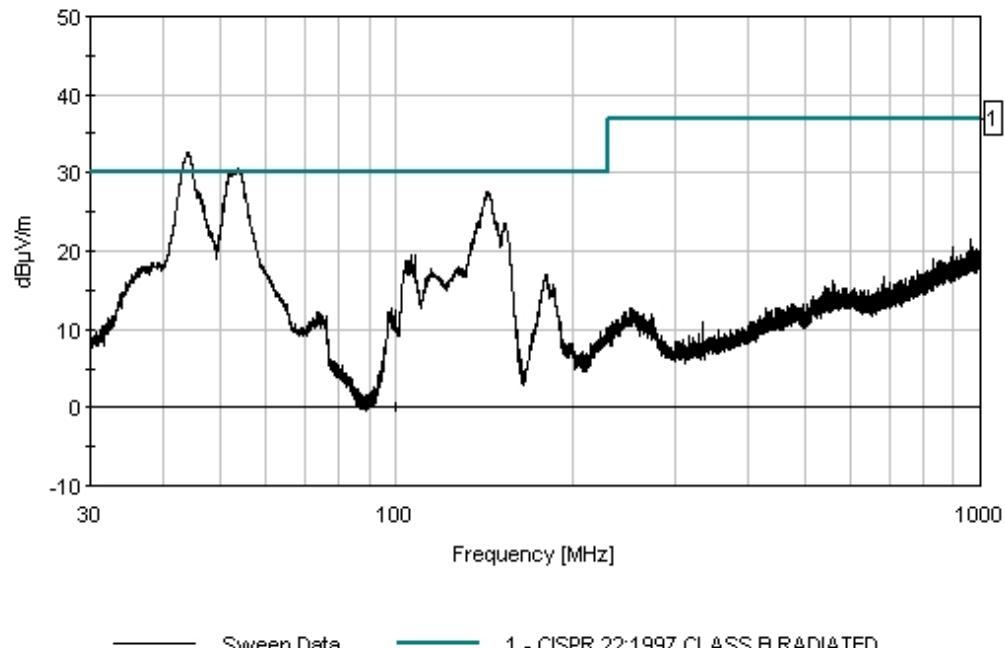
**Transducer Legend:**

T1=ANT AN01993 25-1000MHz	T2=AMP-AN01517-071006
T3=CAB-ANP05444-042607 - CPC3 Cable Set	T4=CAB-ANP05360-110906

**Measurement Data:** Reading listed by margin. **Test Distance: 3 Meters**

#	Freq MHz	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
1	43.749M QP	51.1	+12.7	-27.6	+0.7	+0.4	-10.0 196	27.3	30.0	-2.7	Vert 100
^	43.821M	56.7	+12.6	-27.6	+0.7	+0.4	-10.0 196	32.8	30.0	+2.8	Vert 100
3	53.595M QP	53.2	+7.4	-27.6	+0.8	+0.4	-10.0 360	24.2	30.0	-5.8	Vert 100
^	53.691M	59.6	+7.4	-27.6	+0.8	+0.4	-10.0 360	30.6	30.0	+0.6	Vert 100
5	143.068M QP	47.3	+11.5	-27.4	+1.1	+0.6	-10.0 157	23.1	30.0	-6.9	Vert 100
^	143.070M	51.8	+11.5	-27.4	+1.1	+0.6	-10.0 157	27.6	30.0	-2.4	Vert 100
7	153.472M QP	44.5	+11.0	-27.4	+1.2	+0.6	-10.0 156	19.9	30.0	-10.1	Vert 100

^	153.433M	49.1	+11.0	-27.4	+1.2	+0.6	-10.0	24.5	30.0	-5.5	Vert
							156				100
9	106.080M	44.8	+10.7	-27.6	+1.1	+0.6	-10.0	19.6	30.0	-10.4	Vert
							360				100
10	107.793M	44.5	+10.8	-27.6	+1.1	+0.6	-10.0	19.4	30.0	-10.6	Vert
							360				100
11	114.754M	42.2	+11.3	-27.5	+1.1	+0.6	-10.0	17.7	30.0	-12.3	Vert
							360				100
12	179.649M	43.3	+9.0	-27.2	+1.2	+0.7	-10.0	17.0	30.0	-13.0	Vert
							360				100
13	33.793M	34.6	+16.4	-27.5	+0.6	+0.3	-10.0	14.4	30.0	-15.6	Vert
							360				100
14	961.537M	30.1	+24.1	-27.6	+2.8	+2.0	-10.0	21.4	37.0	-15.6	Vert
							360				100
15	899.035M	30.3	+23.4	-27.9	+2.7	+1.9	-10.0	20.4	37.0	-16.6	Vert
							360				100

 CKC Laboratories Date: 11/19/2007 Time: 08:54:25 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B RADIATED Test Distance: 3 Meters Sequence#: 1 Polarity: Vert  
 Notes: Charging Plus handle


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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B RADIATED**  
 Work Order #: **87039** Date: 11/19/2007  
 Test Type: **Radiated Scan** Time: 09:36:00  
 Equipment: **Face Brush** Sequence #: 6  
 Manufacturer: Pacific BioScience Laboratories Tested By: Ryan Rutledge  
 Model: Plus P/N: 3031  
 S/N: none

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
HP 8447D PreAmp	S/N: 2944A08601	07/10/2006	07/10/2008	AN01517
Chase BILOG	S/N: 2458	01/31/2007	01/31/2009	AN01993

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Plus handle on low speed, standing upright

**Transducer Legend:**

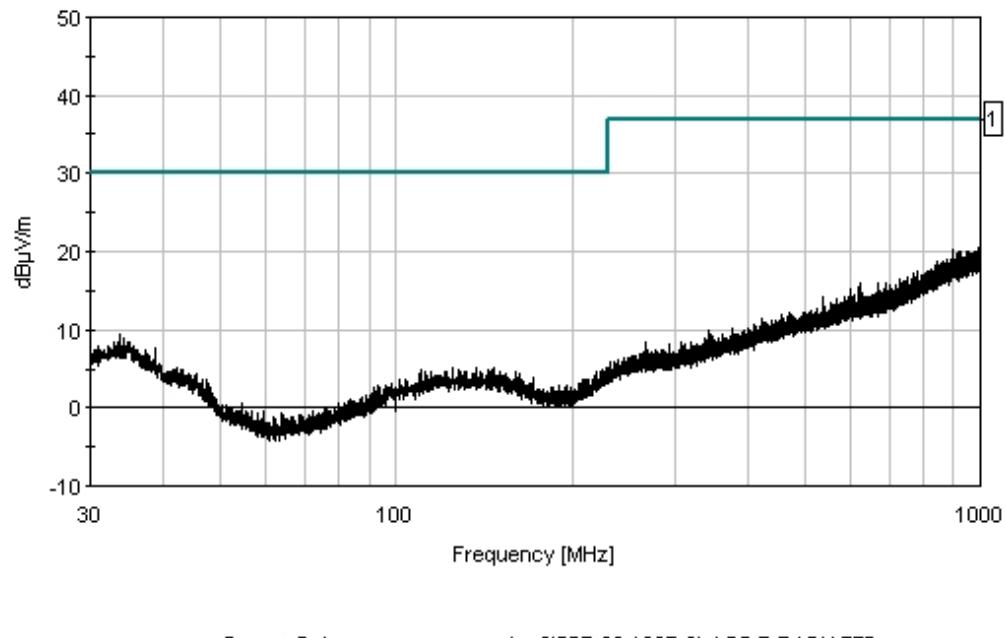
T1=ANT AN01993 25-1000MHz	T2=AMP-AN01517-071006
T3=CAB-ANP05444-042607 - CPC3 Cable Set	T4=CAB-ANP05360-110906

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	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
1	990.593M	29.0	+24.4	-27.8	+2.9	+2.0	-10.0	20.5	37.0	-16.5	Horiz
2	898.826M	30.1	+23.4	-27.9	+2.7	+1.9	-10.0	20.2	37.0	-16.8	Horiz
3	33.727M	29.6	+16.4	-27.5	+0.6	+0.3	-10.0 360	9.4	30.0	-20.6	Horiz 100
4	38.651M	30.3	+14.1	-27.6	+0.6	+0.3	-10.0 360	7.7	30.0	-22.3	Horiz 100
5	125.141M	29.5	+11.7	-27.5	+1.0	+0.5	-10.0 360	5.2	30.0	-24.8	Horiz 100
6	110.470M	29.7	+11.0	-27.6	+1.1	+0.6	-10.0 360	4.8	30.0	-25.2	Horiz 100

7	160.694M	29.5	+10.5	-27.3	+1.2	+0.7	-10.0	4.6	30.0	-25.4	Horiz
							360				100
8	171.724M	29.6	+9.5	-27.2	+1.2	+0.7	-10.0	3.8	30.0	-26.2	Horiz
							360				100
9	54.423M	29.7	+7.2	-27.6	+0.8	+0.4	-10.0	0.5	30.0	-29.5	Horiz
							360				100
10	71.859M	29.5	+6.5	-27.7	+0.8	+0.6	-10.0	-0.3	30.0	-30.3	Horiz
							360				100

CKC Laboratories Date: 11/19/2007 Time: 09:36:00 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B RADIATED Test Distance: 3 Meters Sequence#: 6 Polarity: Horiz  
 Notes: Plus handle on low speed, standing upright



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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B RADIATED**  
 Work Order #: **87039** Date: 11/19/2007  
 Test Type: **Radiated Scan** Time: 09:28:48  
 Equipment: **Face Brush** Sequence #: 5  
 Manufacturer: Pacific BioScience Laboratories Tested By: Ryan Rutledge  
 Model: Plus P/N: 3031  
 S/N: none

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
HP 8447D PreAmp	S/N: 2944A08601	07/10/2006	07/10/2008	AN01517
Chase BILOG	S/N: 2458	01/31/2007	01/31/2009	AN01993

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Plus handle on low speed, standing upright

**Transducer Legend:**

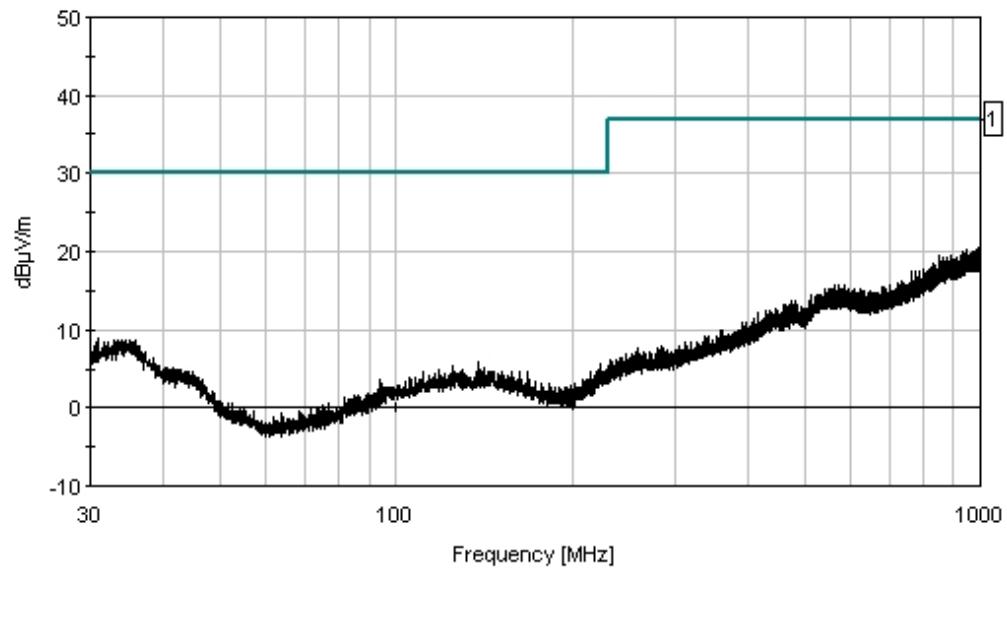
T1=ANT AN01993 25-1000MHz	T2=AMP-AN01517-071006
T3=CAB-ANP05444-042607 - CPC3 Cable Set	T4=CAB-ANP05360-110906

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	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
1	991.848M	28.9	+24.4	-27.8	+2.9	+2.0	-10.0	20.4	37.0	-16.6	Vert
2	949.831M	29.1	+24.0	-27.6	+2.8	+2.0	-10.0	20.3	37.0	-16.7	Vert
3	30.998M	30.0	+15.5	-27.5	+0.6	+0.3	-10.0	8.9	30.0	-21.1	Vert 100
4	138.099M	30.0	+11.6	-27.4	+1.1	+0.5	-10.0	5.8	30.0	-24.2	Vert 100
5	223.447M	29.6	+10.9	-27.0	+1.3	+0.8	-10.0	5.6	30.0	-24.4	Vert 100
6	125.034M	29.7	+11.7	-27.5	+1.0	+0.5	-10.0	5.4	30.0	-24.6	Vert 100

7	167.655M	30.2	+9.9	-27.3	+1.2	+0.7	-10.0	4.7	30.0	-25.3	Vert 100
8	214.666M	29.6	+10.2	-27.2	+1.3	+0.8	-10.0	4.7	30.0	-25.3	Vert 100
9	93.954M	30.1	+9.4	-27.5	+0.9	+0.7	-10.0	3.6	30.0	-26.4	Vert 100
10	74.854M	29.7	+6.9	-27.7	+0.9	+0.6	-10.0	0.4	30.0	-29.6	Vert 100

CKC Laboratories Date: 11/19/2007 Time: 09:28:48 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B RADIATED Test Distance: 3 Meters Sequence#: 5 Polarity: Vert  
 Notes: Plus handle on low speed, standing upright



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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B RADIATED**  
 Work Order #: **87039** Date: 11/19/2007  
 Test Type: **Radiated Scan** Time: 10:36:31  
 Equipment: **Face Brush** Sequence #: 12  
 Manufacturer: Pacific BioScience Laboratories Tested By: Ryan Rutledge  
 Model: Plus P/N: 3031  
 S/N: none

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
HP 8447D PreAmp	S/N: 2944A08601	07/10/2006	07/10/2008	AN01517
Chase BILOG	S/N: 2458	01/31/2007	01/31/2009	AN01993

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Plus handle on high speed, standing upright

**Transducer Legend:**

T1=ANT AN01993 25-1000MHz	T2=AMP-AN01517-071006
T3=CAB-ANP05444-042607 - CPC3 Cable Set	T4=CAB-ANP05360-110906

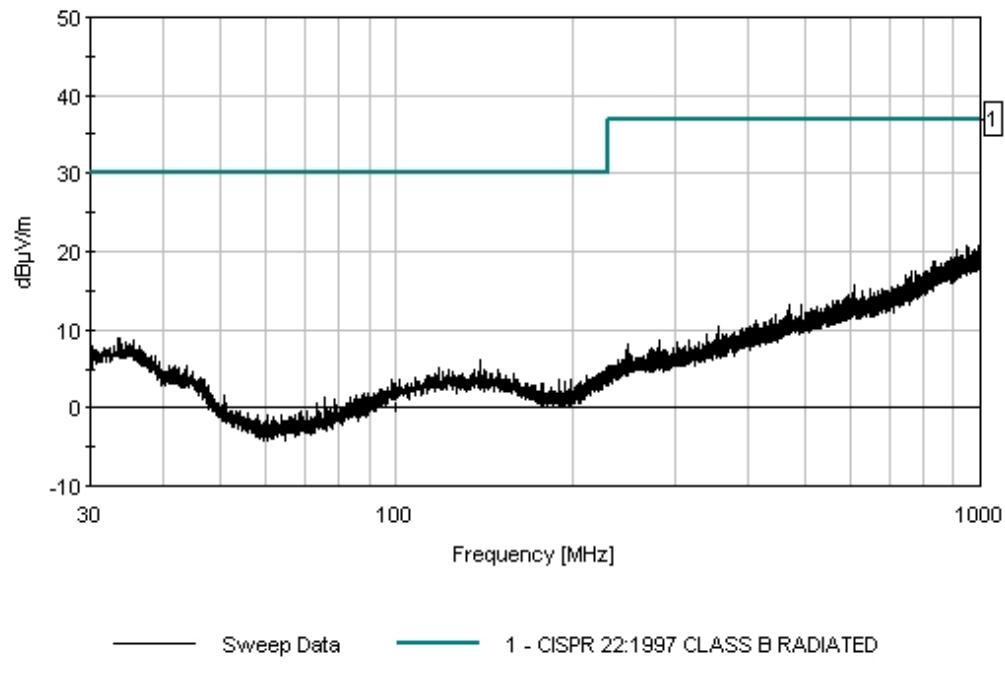
**Measurement Data:** Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	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
1	946.800M	29.6	+23.9	-27.6	+2.8	+2.0	-10.0	20.7	37.0	-16.3	Horiz
2	994.043M	29.2	+24.4	-27.8	+2.9	+2.0	-10.0	20.7	37.0	-16.3	Horiz
3	138.956M	30.4	+11.6	-27.4	+1.1	+0.5	-10.0	6.2	30.0	-23.8	Horiz
4	198.496M	29.9	+9.0	-27.4	+1.2	+0.8	-10.0	3.5	30.0	-26.5	Horiz
5	190.464M	29.8	+9.0	-27.3	+1.2	+0.8	-10.0	3.5	30.0	-26.5	Horiz
6	194.748M	29.8	+9.0	-27.4	+1.2	+0.8	-10.0	3.4	30.0	-26.6	Horiz

7	50.963M	29.9	+8.2	-27.7	+0.8	+0.4	-10.0	1.6	30.0	-28.4	Horiz
8	75.619M	30.7	+6.9	-27.7	+0.9	+0.6	-10.0	1.4	30.0	-28.6	Horiz
9	78.414M	30.0	+7.2	-27.6	+1.0	+0.6	-10.0	1.2	30.0	-28.8	Horiz
10	72.991M	30.3	+6.6	-27.7	+0.9	+0.6	-10.0	0.7	30.0	-29.3	Horiz

CKC Laboratories Date: 11/19/2007 Time: 10:36:31 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B RADIATED Test Distance: 3 Meters Sequence#: 12 Polarity: Horiz  
 Notes: Plus handle on high speed, standing upright



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

Customer: **Pacific BioScience Laboratories**  
 Specification: **CISPR 22:1997 CLASS B RADIATED**  
 Work Order #: **87039** Date: 11/19/2007  
 Test Type: **Radiated Scan** Time: 10:29:46  
 Equipment: **Face Brush** Sequence #: 11  
 Manufacturer: Pacific BioScience Laboratories Tested By: Ryan Rutledge  
 Model: Plus P/N: 3031  
 S/N: none

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A	S/N: US44300437	05/27/2006	05/27/2008	AN02673
Bothell 5m Cable Set	S/N: P05444	04/26/2007	04/26/2009	ANP05444
20' RG-214 Coax	S/N: 16	11/09/2006	11/09/2008	ANP05360
HP 8447D PreAmp	S/N: 2944A08601	07/10/2006	07/10/2008	AN01517
Chase BILOG	S/N: 2458	01/31/2007	01/31/2009	AN01993

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

Function	Manufacturer	Model #	S/N
Face Brush*	Pacific BioScience Laboratories	Plus P/N: 3031	none

**Support Devices:**

Function	Manufacturer	Model #	S/N

**Test Conditions / Notes:**

Plus handle on high speed, standing upright

**Transducer Legend:**

T1=ANT AN01993 25-1000MHz	T2=AMP-AN01517-071006
T3=CAB-ANP05444-042607 - CPC3 Cable Set	T4=CAB-ANP05360-110906

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	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
1	951.504M	29.1	+24.0	-27.6	+2.8	+2.0	-10.0	20.3	37.0	-16.7	Vert
2	982.336M	28.4	+24.3	-27.7	+2.9	+2.0	-10.0	19.9	37.0	-17.1	Vert
3	212.739M	30.1	+10.1	-27.2	+1.3	+0.8	-10.0 360	5.1	30.0	-24.9	Vert 100
4	204.064M	30.1	+9.3	-27.3	+1.2	+0.8	-10.0 360	4.1	30.0	-25.9	Vert 100
5	199.353M	30.3	+9.0	-27.4	+1.2	+0.8	-10.0 360	3.9	30.0	-26.1	Vert 100
6	197.853M	30.0	+9.0	-27.4	+1.2	+0.8	-10.0 360	3.6	30.0	-26.4	Vert 100

7	179.006M	29.9	+9.0	-27.2	+1.2	+0.7	-10.0	3.6	30.0	-26.4	Vert
							360				100
8	48.268M	30.1	+9.8	-27.7	+0.8	+0.4	-10.0	3.4	30.0	-26.6	Vert
							360				100
9	84.337M	30.3	+8.1	-27.5	+1.0	+0.7	-10.0	2.6	30.0	-27.4	Vert
							360				100
10	82.707M	29.9	+7.8	-27.5	+1.0	+0.7	-10.0	1.9	30.0	-28.1	Vert
							360				100

CKC Laboratories Date: 11/19/2007 Time: 10:29:46 Pacific BioScience Laboratories WO#: 87039  
 CISPR 22:1997 CLASS B RADIATED Test Distance: 3 Meters Sequence#: 11 Polarity: Vert  
 Notes: Plus handle on high speed, standing upright

