



**FCC CFR47 PART 15 SUBPART B  
CERTIFICATION TEST REPORT**

**FOR**

**UHF NARROW BAND MULTI CHANNEL RECEIVER**

**MODEL NUMBER: CDP-RX-02E-R 457MHZ**

**FCC ID: V9X-CDP02ER457R**

**REPORT NUMBER: 08J11766-1**

**ISSUE DATE: MAY 15, 2008**

*Prepared for*  
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7557-1, HOTAKA, AZUMINO  
NAGANO, JAPAN 399-8303**

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**NVLAP LAB CODE 200065-0**

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/15/08	Initial Issue	T. Chan

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** CIRCUIT DESIGN, INC.  
7557-1, HOTAKA, AZUMINO  
NAGANO, JAPAN 399-8303

**EUT DESCRIPTION:** UHF NARROW BAND MULTI CHANNEL RECEIVER

**MODEL:** CDP-RX-02E-R 457MHZ

**SERIAL NUMBER:** 02166

**DATE TESTED:** APRIL 23, 2008

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART B	PASS

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All expressions of Pass/Fail in this report are opinions expressed by CCS based on interpretations of the test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

YOBİ ZHOU  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.  
CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a multi channel receiver.

#### GENERAL INFORMATION

POWER REQUIREMENTS	9VDC Battery
LIST OF ALL OSCILLATOR FREQUENCIES GREATER THAN OR EQUAL TO 9 kHz	21.25MHz (TCXO)

### 5.2. SOFTWARE AND FIRMWARE

The power switch is turned ON during the testing.

### 5.3. MODIFICATIONS

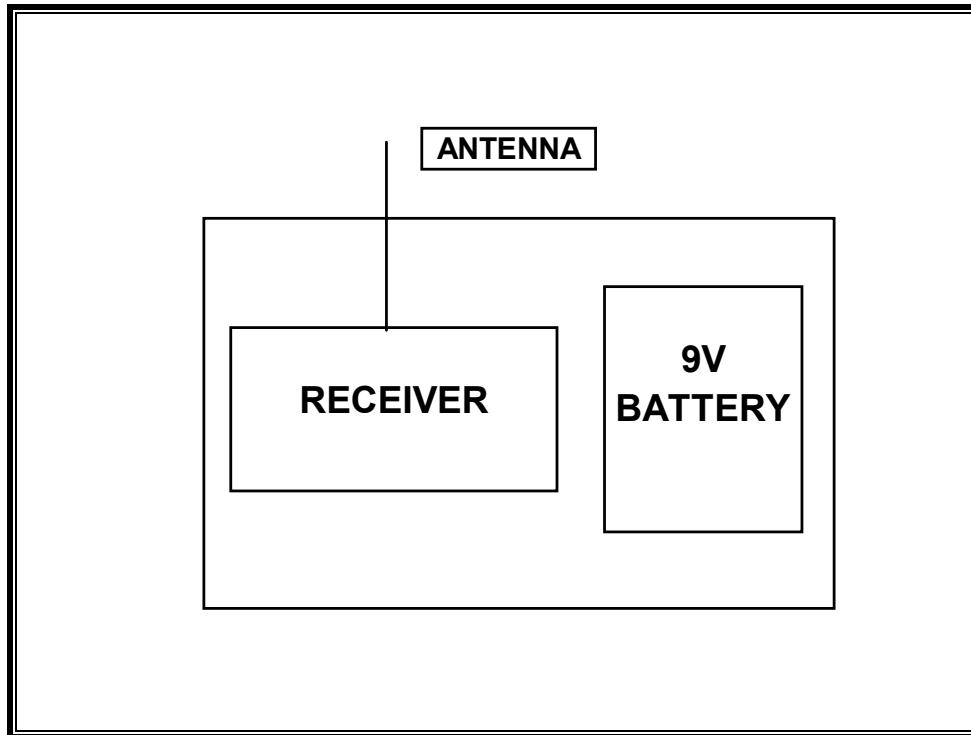
No modifications were made during testing.

## 5.4. DESCRIPTION OF TEST SETUP

### TEST SETUP

The power switch is turned ON during the testing.

### SETUP DIAGRAM FOR TESTS



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Preamp, 1000MHz	Sonoma	310N	N02891	03/31/09
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	09/28/08
Spectrum Analyzer, 40 GHz	Agilent / HP	E4446A	C01069	10/08/09
Spectrum Analyzer, 40 GHz	Agilent / HP	8564E	C00951	12/05/08
Antenna, Horn, 18 GHz	EMCO	3115	C00945	04/22/09
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	08/03/08



## 7. RADIATED EMISSION TEST RESULTS

### 7.1. LIMITS AND PROCEDURE

#### TEST PROCEDURE

ANSI C63.4

The highest clock frequency generated or used in the EUT of RX mode is 457 MHz, therefore the frequency range was investigated from 30 MHz to 2000 MHz.

#### LIMIT

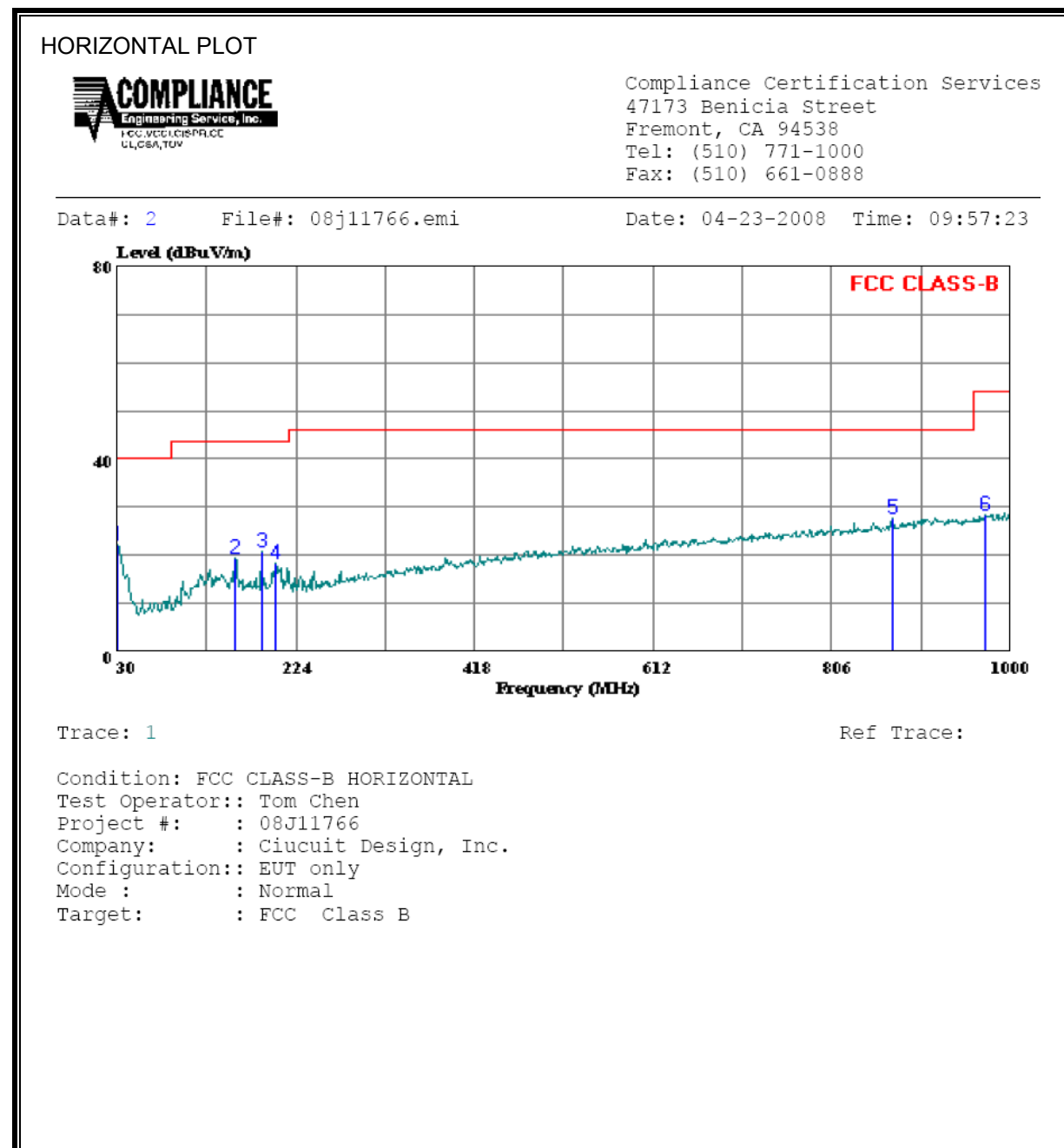
§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB $\mu$ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54
Note: The lower limit shall apply at the transition frequency.	

#### RESULTS

## 7.2. RADIATED EMISSIONS

### SPURIOUS EMISSION 30 TO 1000 MHz (HORIZONTAL)



HORIZONTAL DATA

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.970	31.23	-9.13	22.10	40.00	-17.90	Peak
2	157.070	36.83	-17.61	19.22	43.50	-24.28	Peak
3	186.170	39.33	-18.49	20.84	43.50	-22.66	Peak
4	202.660	35.50	-17.32	18.19	43.50	-25.32	Peak
5	871.960	33.17	-5.42	27.74	46.00	-18.26	Peak
6	971.870	32.17	-3.61	28.56	54.00	-25.44	Peak

**SPURIOUS EMISSION 30 TO 1000 MHz (VERTICAL)**

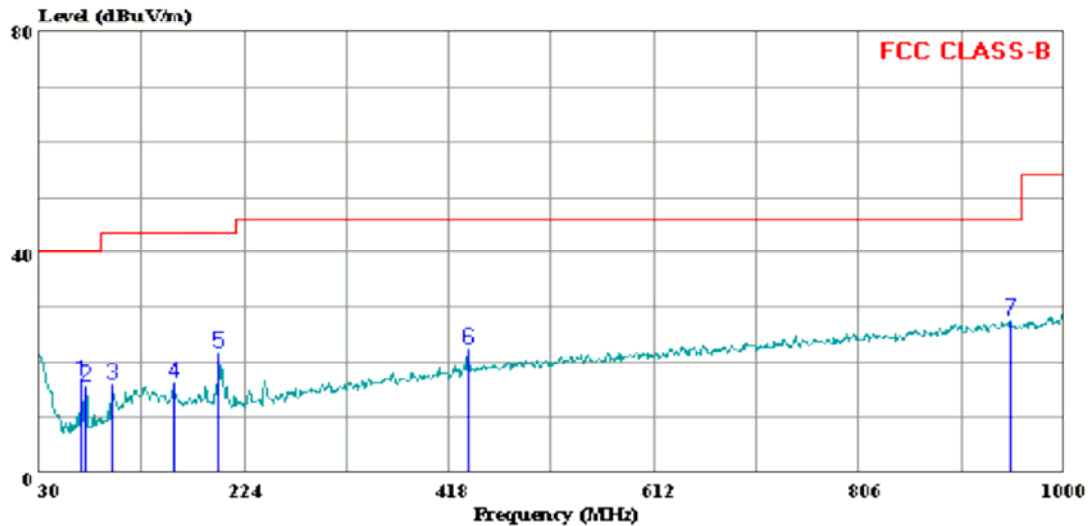
VERTICAL PLOT



Compliance Certification Services  
47173 Benicia Street  
Fremont, CA 94538  
Tel: (510) 771-1000  
Fax: (510) 661-0888

Data#: 4 File#: 08j11766.emi

Date: 04-23-2008 Time: 10:06:53



Trace: 3

Ref Trace:

Condition: FCC CLASS-B VERTICAL  
Test Operator:: Y.Z.  
Project #: : 08J11766  
Company: : Ciucuit Design, Inc.  
Configuration: EUT only  
Mode : : Normal  
Target: : FCC Class B

VERTICAL DATA

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	69.770	39.33	-22.65	16.68	40.00	-23.32	Peak
2	74.620	38.33	-22.66	15.68	40.00	-24.32	Peak
3	98.870	37.00	-20.98	16.02	43.50	-27.48	Peak
4	157.070	33.83	-17.61	16.22	43.50	-27.28	Peak
5	199.750	38.83	-16.96	21.87	43.50	-21.63	Peak
6	435.460	35.00	-12.62	22.38	46.00	-23.62	Peak
7	949.560	31.67	-4.01	27.65	46.00	-18.35	Peak

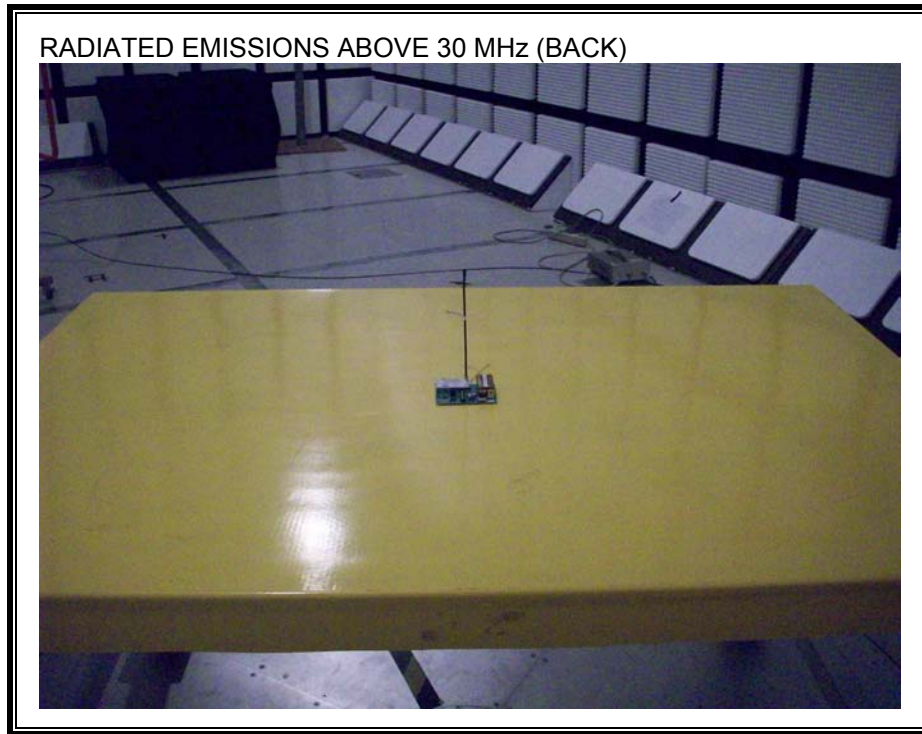
# SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Measurement															
Compliance Certification Services, Fremont 5m Chamber															
Company: Circuit Design, Inc.															
Project #: 08J11766															
Date: 04.23.2008															
Test Engineer: Y.Z.															
Configuration: Rx On															
Mode: EUT Only															
Test Equipment:															
Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit							
T73; S/N: 6717 @3m		T144 Miteq 3008A00931						FCC 15.209							
Hi Frequency Cables															
2 foot cable		3 foot cable		12 foot cable		HPF		Reject Filter		Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz					
				A5m Chamber											
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Ftr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.353	3.0	35.7	22.1	26.7	3.5	-39.0	0.0	0.0	26.9	13.3	74	54	-47.1	-40.7	V
1.107	3.0	37.8	21.3	26.0	3.1	-39.3	0.0	0.0	27.6	11.1	74	54	-46.4	-42.9	H
No other emissions were detected up to 2GHz.															
Rev. 4.12.7															
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit		
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit		
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit		
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit		
CL	Cable Loss					HPF	High Pass Filter								

## 8. SETUP PHOTOS

### RADIATED EMISSION ABOVE 30 MHz





**END OF REPORT**