



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

Prepared by
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NVLAP[®]

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:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



YOBI 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

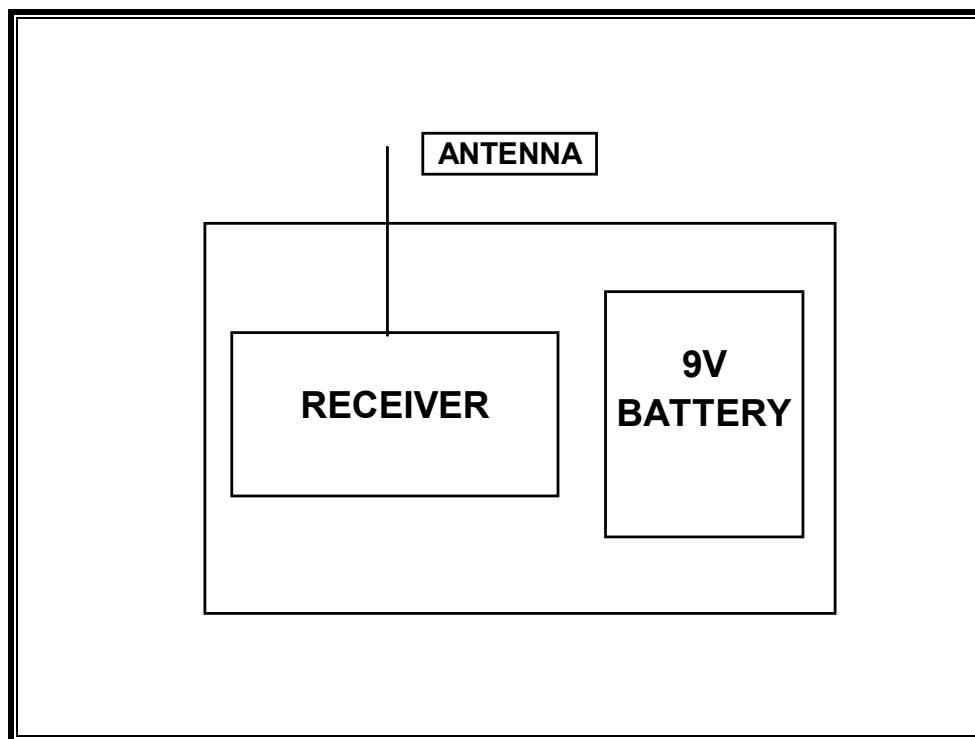
No modifications were made during testing.

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:

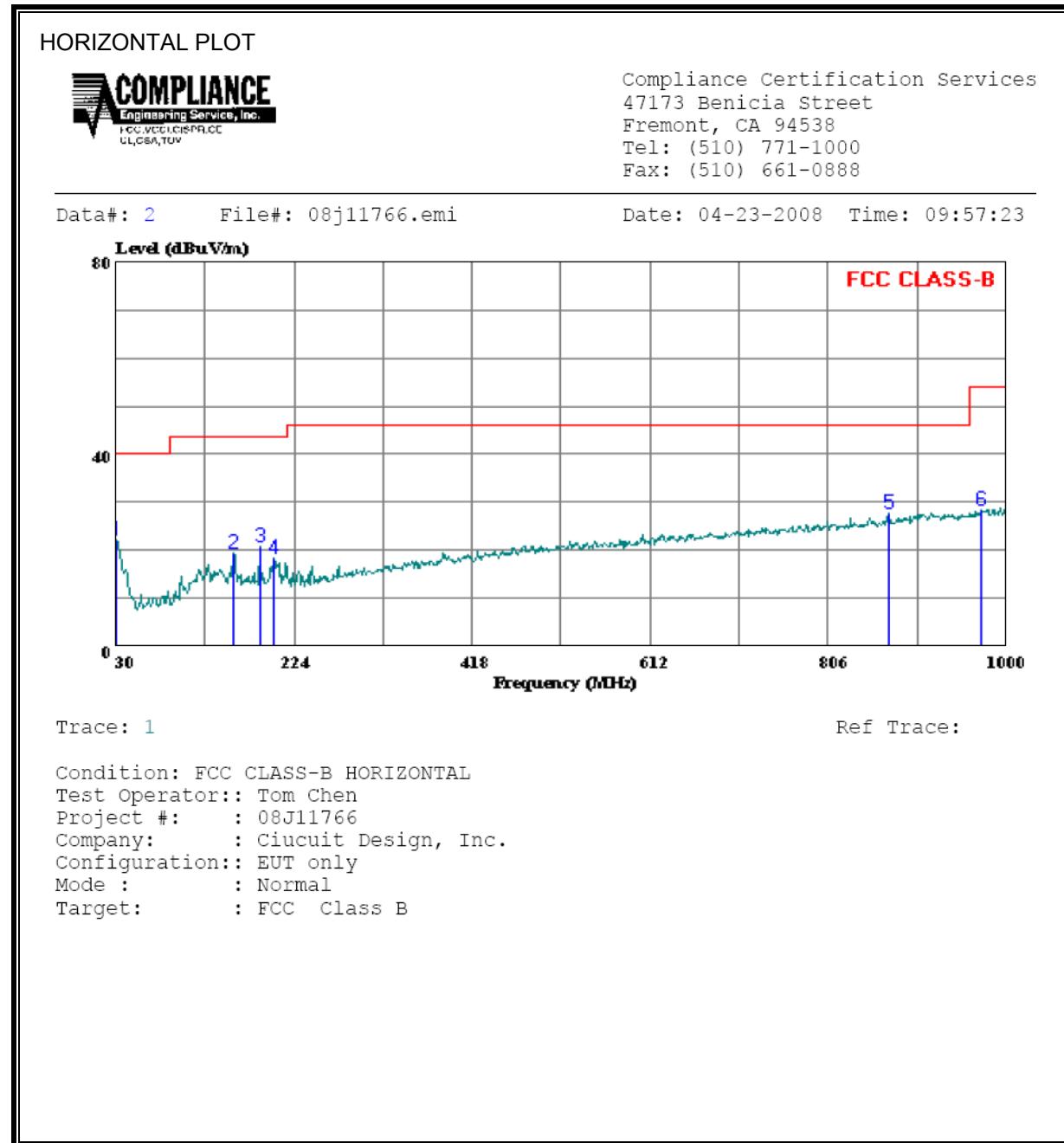
Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

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	Limit	Over	Line	Limit	Remark
	Level	Factor						
	MHz	dBuV						
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	

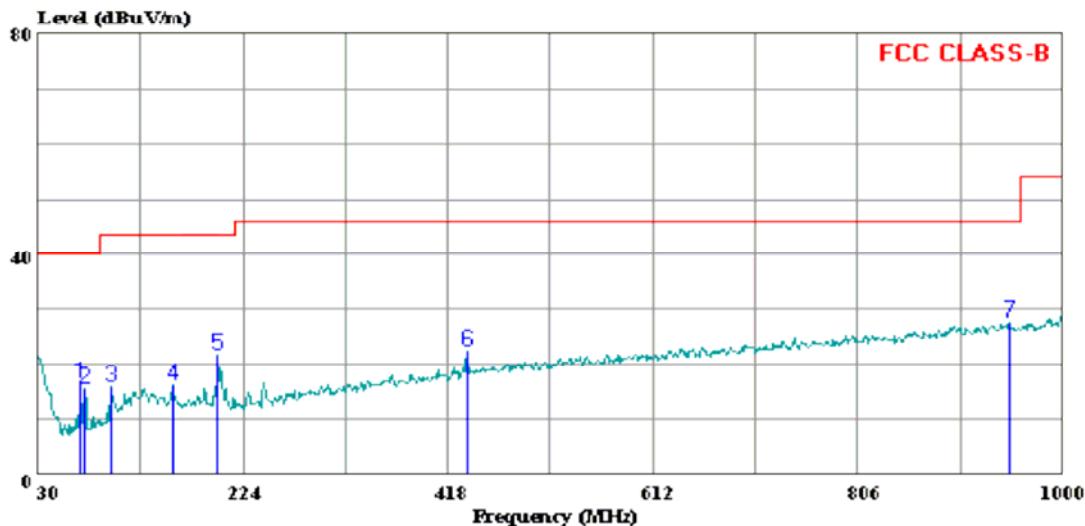
SPURIOUS EMISSION 30 TO 1000 MHz (VERTICAL)

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	Limit	Over	Line	Limit	Remark
	Level	Factor						
	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

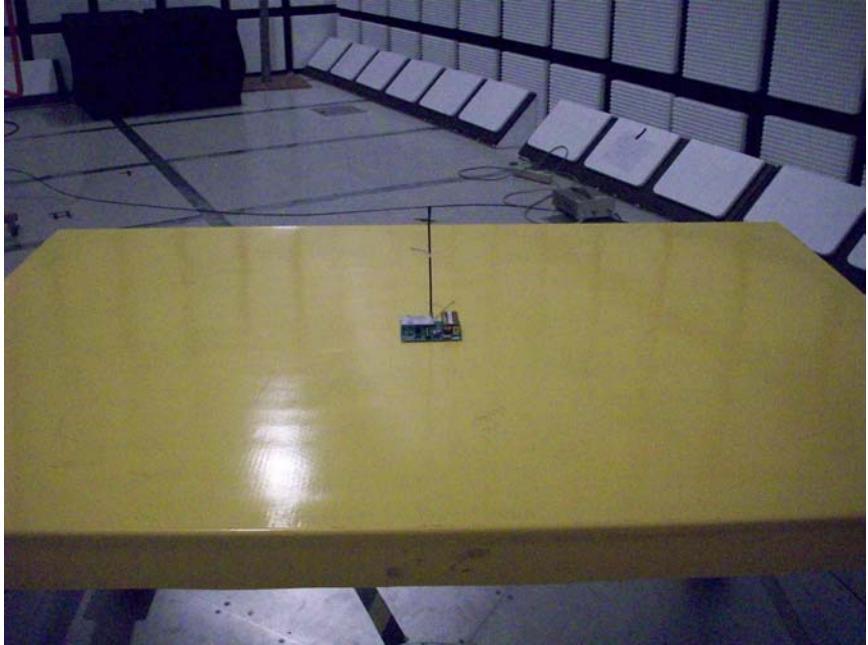
High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																																																														
Company: Circuit Design, Inc. Project #: 08J11766 Date: 04.23.2008 Test Engineer: Y.Z. Configuration: Rx On Mode: EUT Only																																																														
<u>Test Equipment:</u>																																																														
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 <table border="1"> <tr> <td>2 foot cable</td> <td>3 foot cable</td> <td>12 foot cable</td> <td>HPF</td> <td>Reject Filter</td> <td colspan="10"> <u>Peak Measurements</u> RBW=VBW=1MHz <u>Average Measurements</u> RBW=1MHz, VBW=10Hz </td> </tr> <tr> <td></td> <td></td> <td>A-5m Chamber</td> <td></td> <td></td> <td colspan="10"></td> </tr> </table>															2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter	<u>Peak Measurements</u> RBW=VBW=1MHz <u>Average Measurements</u> RBW=1MHz, VBW=10Hz												A-5m Chamber																														
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<table border="1"> <thead> <tr> <th>f GHz</th> <th>Dist (m)</th> <th>Read Pk dBuV</th> <th>Read Avg dBuV</th> <th>AF dB/m</th> <th>CL dB</th> <th>Amp dB</th> <th>D Corr dB</th> <th>Flr dB</th> <th>Peak dBuV/m</th> <th>Avg dBuV/m</th> <th>Pk Lim dBuV/m</th> <th>Avg Lim dBuV/m</th> <th>Pk Mar dB</th> <th>Avg Mar dB</th> <th>Notes (V/H)</th> </tr> </thead> <tbody> <tr> <td>1.353</td> <td>3.0</td> <td>35.7</td> <td>22.1</td> <td>26.7</td> <td>3.5</td> <td>-39.0</td> <td>0.0</td> <td>0.0</td> <td>26.9</td> <td>13.3</td> <td>74</td> <td>54</td> <td>-47.1</td> <td>-40.7</td> <td>V</td> </tr> <tr> <td>1.107</td> <td>3.0</td> <td>37.8</td> <td>21.3</td> <td>26.0</td> <td>3.1</td> <td>-39.3</td> <td>0.0</td> <td>0.0</td> <td>27.6</td> <td>11.1</td> <td>74</td> <td>54</td> <td>-46.4</td> <td>-42.9</td> <td>H</td> </tr> </tbody> </table>															f GHz	Dist (m)	Read Pk dBuV	Read Avg dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Flr 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
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8. SETUP PHOTOS

RADIATED EMISSION ABOVE 30 MHz



RADIATED EMISSIONS ABOVE 30 MHZ (BACK)

**END OF REPORT**