Model Flightcell DZM
Environmental Test Results

1068-2420-01

Rev A

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Record of Revisions

REV	DESCRIPTION	DATE	APPROVED
IR	INITIAL RELEASE E510	4/18/06	BAH
A	Added note regarding environmental test level E512	4/19/06	BAH

Table of Contents

1. Purpose

This document contains the environmental test results for the Flightcell DZM Communications Interface, which was tested to RTCA/DO-160D, Section 21, Emission of Radio Frequency Energy, Category M. Results were provided by the test facility in .pdf format and have been inserted into this document.

2. Test Results

Test results begin on the following page.

Note: The test results were delivered with a typographical error. The test results document indicates that the unit was tested to DO-160D, however upon further review the graphs contained within were found to correctly reflect testing to DO-160E. The typographical errors will be corrected by the test facility and will be incorporated into this document at that time.

April 13, 2006

Brent Hatcher
DAC International
6702 McNeil Drive
Austin, TX 78729

Dear Brent:

Thank you for the opportunity to perform environmental and electromagnetic interference qualification testing on the Project 1068 – Flightcell DZM. Enclosed is a copy of the RTCA Environmental and Electromagnetic Interference Test Report for the Project 1068 – Flightcell DZM. This report documents RTCA emission testing of these devices in the normal mode of operation.

We look forward to continuing to support DAC International in its product development efforts.

If you have any questions or comments about the report or the testing performed, please contact us.

Sincerely,

David J. Rahe
Reliability Department Manager

Michael Royer
EMC Department Manager

Enclosure

Certificate of Compliance

Applicant	DAC International 6702 McNeil Drive Austin, TX 78729
Model	Project 1068 - Flightcell FCDZ337R00DIM
Serial Number	B06000002
Test Dates	March 13th and 14th, 2006
Project Numbers	06394-10
Quotation Number	17310

The DAC International Project 1068 – Flightcell FCDZ337R00DIM was tested to the following sections of RTCA/DO-160D and found to be in compliance with the required criteria on the indicated test date.

Section 21	Emission of Radio Frequency Energy	Category M	9/16/05

I, Jeffrey Lenk, for Professional Testing (EMI), Inc., being familiar with the RTCA/DO-160D rules and test procedures, have reviewed the test setup, measured data and this report. I believe them to be true and accurate.

Michael A. Royer

Mike Royer
EMC Department Manager

DO-160D Electromagnetic and Environmental Test Report

Prepared for:

DAC INTERNATIONAL
6702 McNeil Drive
Austin, TX 78729

By

Professional Testing (EMI), Inc.
1601 FM 1460, Suite B
Round Rock, Texas 78664

April 13, 2006

TEST REPORT

DAC INTERNATIONAL

Project 1068-Flightcell FCDZ337R00DIM

Contents

Illustrations

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1.0 Introduction

1.1 Objective

The objective of the tests specified in this document is to determine if the DAC International Project 1068 – Flightcell DZM, hereafter referred to as the EUT, meets the requirements of applicable electromagnetic interference conditions for Airborne Equipment as addressed by RTCA/DO-160D Specification.

1.2 EUT Description

The EUT is the FCDZ337R00DIM Flightcell DZM. It is DZUS rack-mounted Communications Interface that fully integrates into an ICS to provide satellite and cell phone communications to all users of the ICS. The described article, produced by Flightcell International, Ltd in Nelson, New Zealand, will be FAA PMA'd by DAC International of Austin, Texas under an STC licensing agreement for use on KC-10 aircraft.

2.0 Overview

This document describes the results of testing of the EUT in accordance with (IAW) RTCA/DO-160D Specification. DAC International specified the sections of this document to be tested by Professional Testing (EMI) Inc. prior to the start of testing. Details of the exact equipment used for each test are provided in the test report. Pass/fail criteria for each test were based on normal operating performance of the EUT and performance guidelines set forth for each of the RTCA tests.

2.1 Test Facilities

Testing was performed at Professional Testing (EMI), Inc. located in Round Rock, Texas. For all tests, the basic test configuration information documented by RTCA/DO-160D was followed. This document was used for guidance in placement of the devices in the test environment, configuration of test and support cables and equipment, and for proper test performance.

2.2 Applicable Documents

Table 2.2 Applicable Documents

Designation	Document Title
RTCA/DO-160D, dated 12/09/04	Environmental Conditions and Test Procedures for Airborne Equipment
84183-02-QTP	Qualification Test Plan/Procedures for the DAC International Project 1068 - Flightcell DZM

2.3 Test Criteria

The EUT was tested in accordance with the portions of RTCA/DO-160D listed in Table 2.3. The Pass/Fail results are also listed in Table 2.3.

Table 2.3 Performance Requirements

Section 21	M	Emission of Radio Frequency Energy	PASS

3.0 Emission of Radio Frequency Energy

3.1.1 Emission of Radio Frequency Energy - Radiated

Testing of the DAC International Project 1068 - Flightcell DZM was performed to evaluate the radiated emission profile of this device. This portion of the test procedure was based on Section 21, Category M of RTCA/DO-160D. An antenna was placed 1 meter from the EUT and ambient data taken with the EUT turned off. The EUT was then cycled through various operating configurations to determine worst-case emissions. The electric fields from the EUT were recorded in the worst-case configuration. The radiated electric field emission profile of the EUT was within the Category M limits as specified by RTCA/DO-160D. All ambient signals were verified to be below the applicable limits prior to formal testing. The results are shown in Table 3.12.1. The equipment used to perform the test, test data, and photographs of the test are in Section 4.12.1.

Table 3.1.1 Radiated Emissions

Category	EUT Performance	Results
M	Normal	Pass

3.1.2 Emission of Radio Frequency Energy - Conducted

For conducted emission testing, a calibrated current clamp was placed around the power interface lines and interconnecting cables. The emissions were recorded using a spectrum analyzer. The results are shown in Table 3.12.2. The equipment used to perform the test, test data, and photographs of the test are in Section 4.12.2.

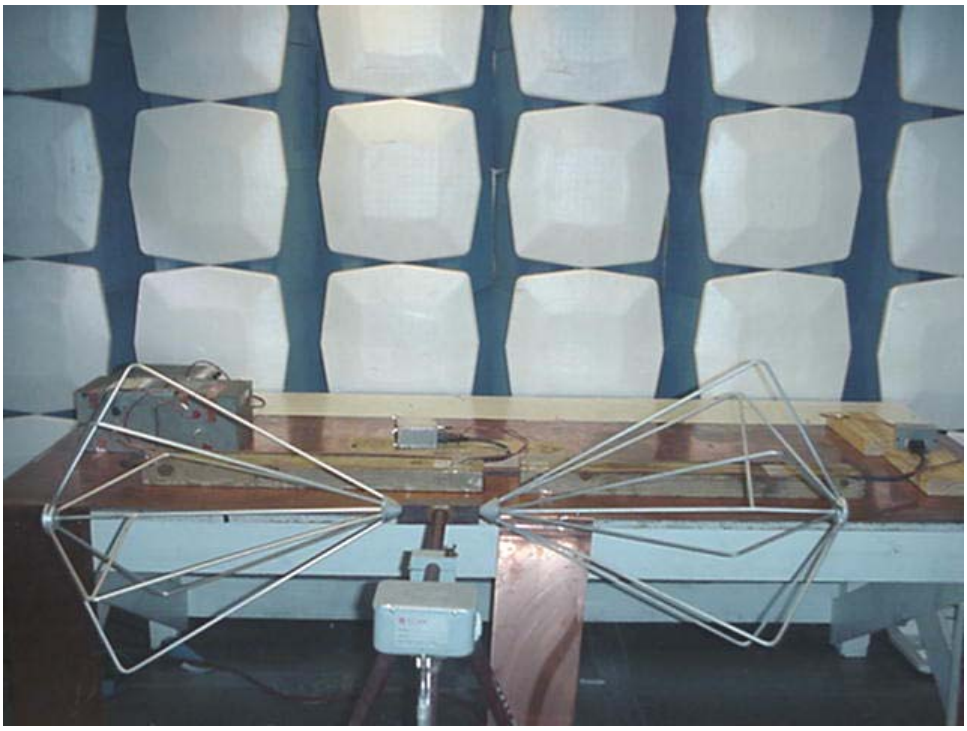
Table 3.1.2 Conducted Emissions

Category	EUT Performance	Results
M	Normal	Pass

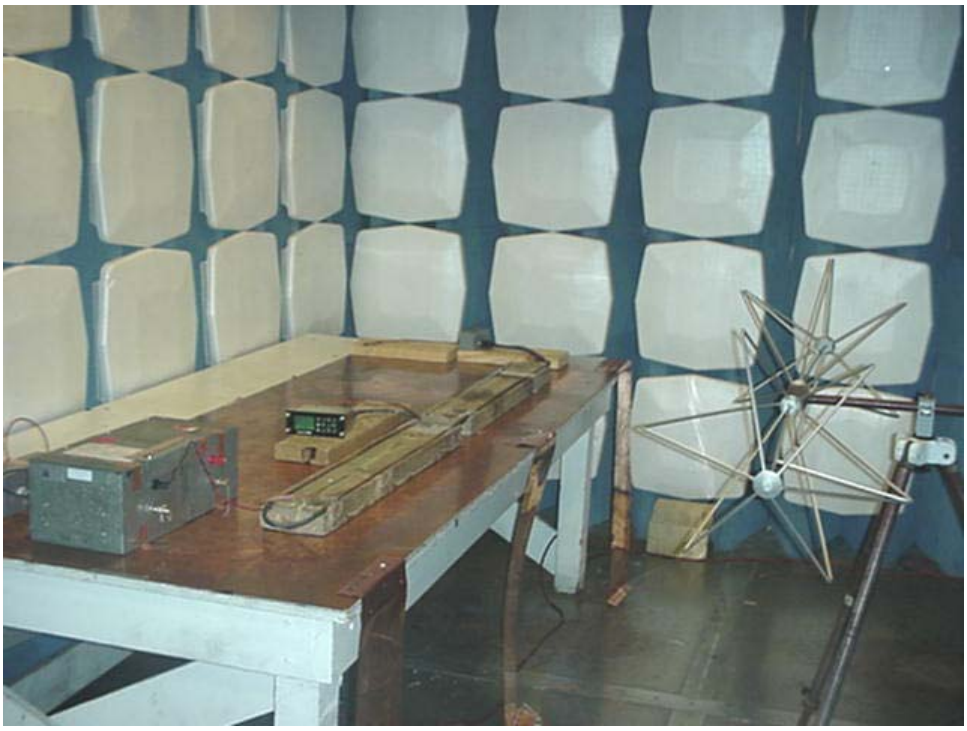
3.1.3 Emission of Radio Frequency – Radiated

Table 3.1.3 Emission of Radio Frequency – Radiated Equipment List

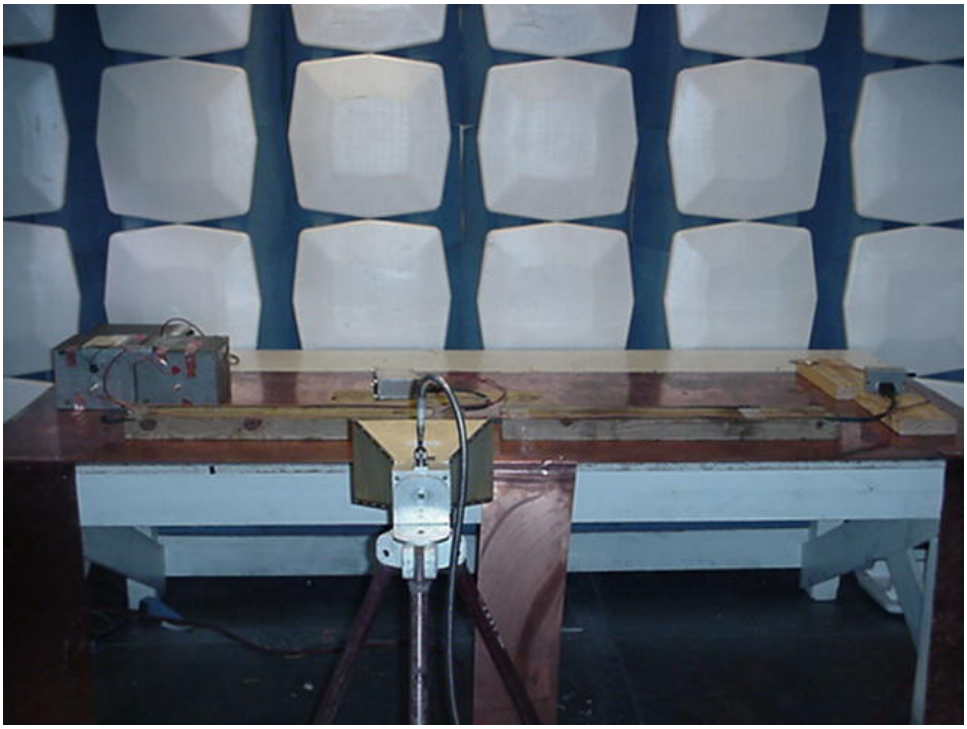
Asset Number	Description	Calibration Due
0007	EMCO 3109 Biconical Antenna	June 3, 2006
0008	EMCO 3146 Log Periodic Antenna	June 8, 2006
0897	Preamplifier, 2-20 GHz	May 16, 2006
0949	Spectrum Analyzer Display	N/A
0950	Spectrum Analyzer	March 24, 2006
0267	Antenna, Ridge Guide	July 7, 2006
0078	Antenna, Active Rod & Field	June 14, 2006
0274	Preamplifier	June 11, 2006
C005	Coax Cable, N	December 8, 2006



Photograph 3.1.1 Section 21 RE – Biconical Antenna – Test Setup



Photograph 3.1.2 Section 21 RE – Biconical Antenna – Side View



Photograph 3.1.3 Section 21 RE Horn Antenna – Test Setup

Photograph 3.1.4 Section 21 RE Horn Antenna – Side view

Photograph 3.1.5 Section 21 RE Log Antenna – Test Setup

Photograph 3.1.6 Section 21 RE Log Antenna – Side view

Photograph 3.1.7 Section 21 RE Rod Antenna – Test Setup

Photograph 3.1.8 Section 21 RE Rod Antenna – Side view

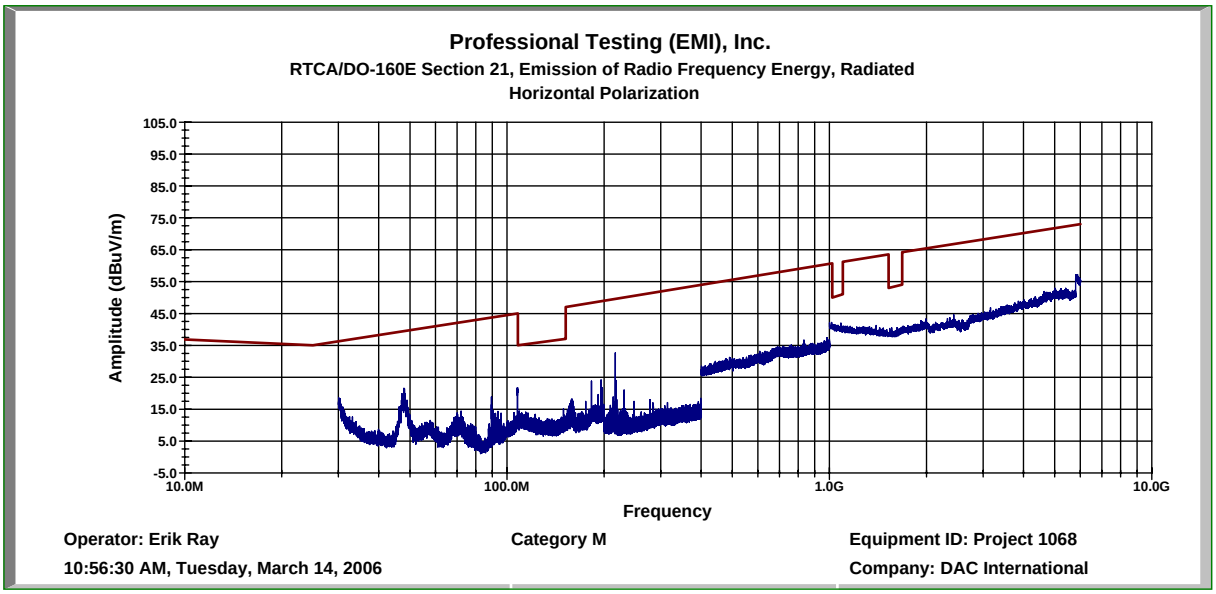


Figure 3.1.1 Section 21 Radiated Emissions Horizontal Polarization

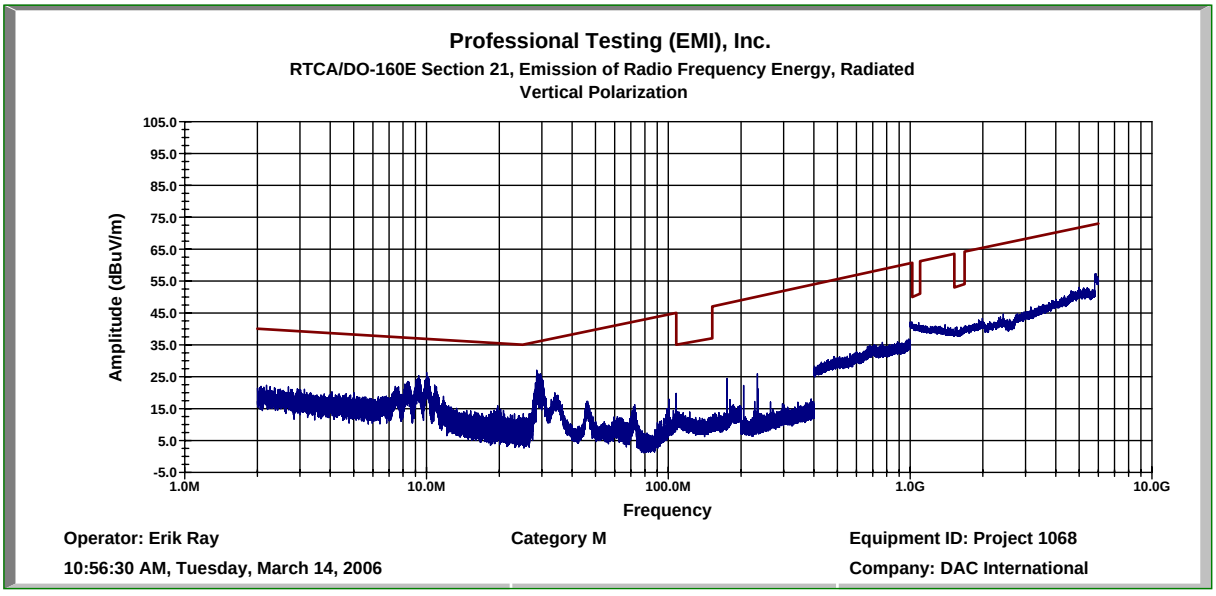
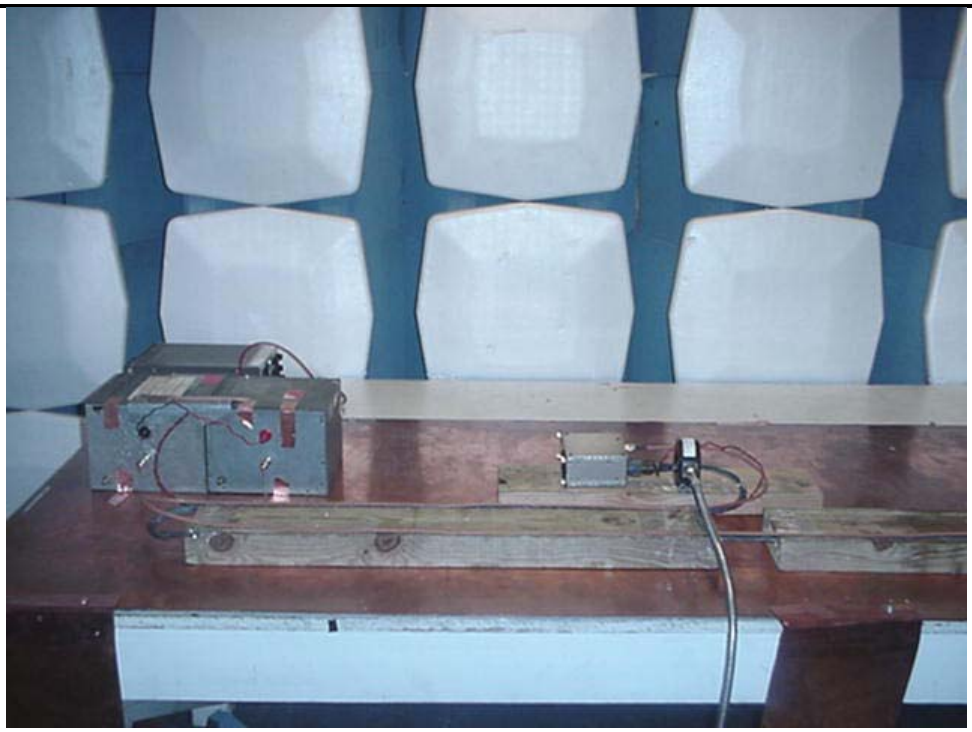


Figure 3.1.2 Section 21 Radiated Emissions Vertical Polarization

3.2 Emission of Radio Frequency Energy – Conducted

Table 3.2.1 Section 21 Emission of Radio Freq. Energy-Conducted Equip. List

Asset Number	Description	Calibration Due
0991	Spectrum Analyzer 100Hz-1.5GHz	September 26, 2006
0992	Spectrum Analyzer, Display 6dB	September 26, 2006
0830	Probe, Current, 100KHz-100MHz	September 19, 2006
0689	Digital Multimeter	August 11, 2006
0264	RTCA LISN	September 21, 2006
0265	RTCA LISN	September 21, 2006



Photograph 3.2.1 Section 21 CE Test Setup

Photograph 3.2.2 Section 21 CE Test Setup – Side view

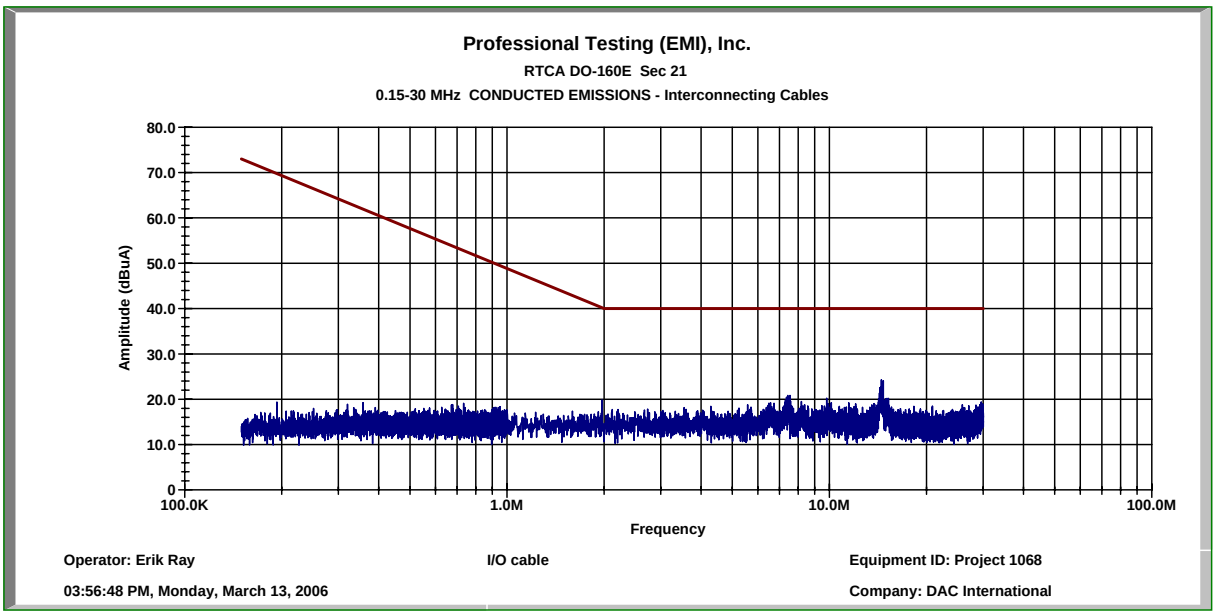


Figure 3.2.1 Section 21 CE – Interconnecting Line

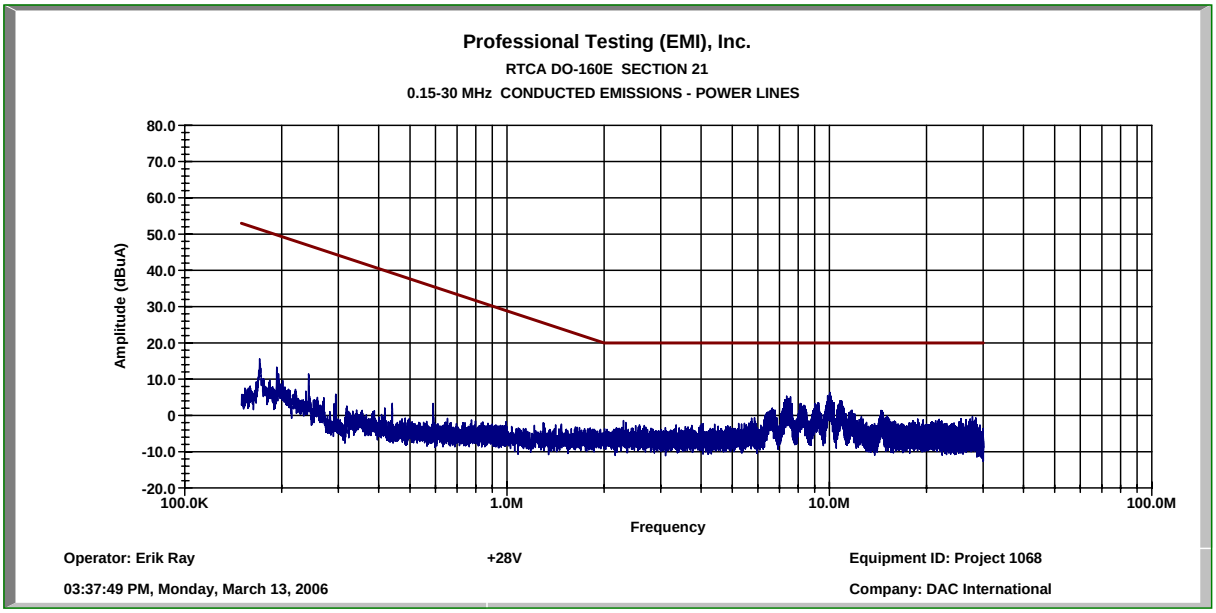


Figure 3.2.2 Section 21 CE, Power Lines Positive Line – +28V

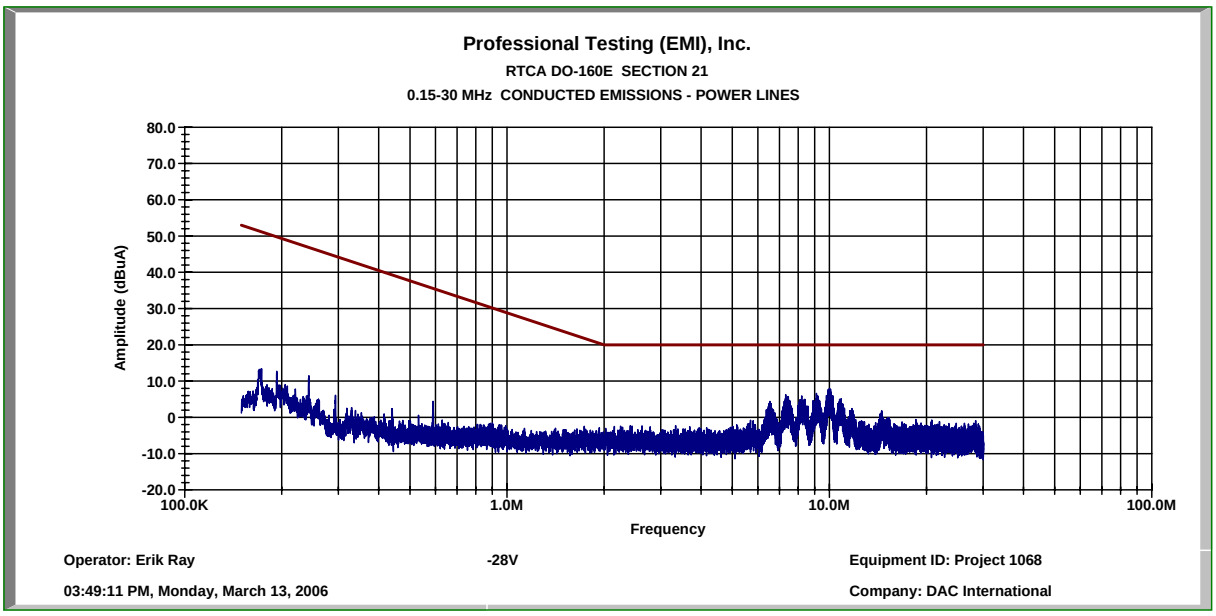


Figure 3.2.3 Section 21 CE, Power Lines Return Line - +28V

END OF TEST REPORT