MET Laboratories, Inc. ***Safety Certification - EMI - Telecom Environmental Simulation***
914 WEST PATAPSCO AVENUE ! BALTIMORE, MARYLAND 21230-3432 ! PHONE (410) 354-3300 ! FAX (410) 354-3313

January 3, 2005

Arbitron
9705 Patuxent Woods Drive
Columbia, MD 21046

Dear Buddy Krug,

Enclosed is the EMC test report for spurious emissions compliance testing of the Arbitron, Cellular Hub, tested to the requirements of Title 47 of the CFR, Part 15, Subpart C for Certification as a Periodic Intentional Radiator and FCC Declaration of Conformity under CFR, Part 15, Subpart B for a Class A Unintentional Radiator.

Thank you for using the services of MET Laboratories, Inc. If you have any questions regarding these results or if MET can be of further service to you, please feel free to contact me.

Sincerely yours,
MET LABORATORIES, INC.

Rob Beauvais

Rob Beauvais
Documentation Department

Reference: (\Arbitron\ EMC15869-FCC231)

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Electromagnetic Compatibility Criteria
Test Report

For the

Arbitron
Cellular Hub

Tested under
The FCC Certification Rules Contained in Title 47 of the CFR, Part 15, Subpart C
For Certification as a Periodic Intentional Radiator
And FCC Declaration of Conformity under CFR, Part 15, Subpart B
For a Class A Unintentional Radiator

MET Report: EMC15869-FCC231

January 3, 2005

Prepared For:

Arbitron
9705 Patuxent Woods Drive
Columbia, MD 21046

Prepared By:
MET Laboratories, Inc.
Baltimore, MD 21230

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MET Report: EMC15869-FCC231

Kevin A. Mehaffey, Manager
Electromagnetic Compatibility Lab

Rob Beauvais
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Title 47 of the CFR, Part 15, Subpart C for Certification as a Periodic Intentional Radiator and Part 15, Subpart B for a Class A Unintentional Radiator under normal use and maintenance.

Hoosamuddin S. Bandukwala
Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	December 30, 2004	Initial Issue
1	January 3, 2005	Correction made to the model number and serial number of the EUT. Spurious Radiated Emissions Limit corrected. Notes showing calculations added.

Table of Contents

All references to section numbers are taken directly from the standard/specification used. Only sections requiring testing or evaluation are included.

List of Tables

List of Photographs

List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBμA	**D**eci**b**els above one **micro**amp
dBμV	**D**eci**b**els above one **micro**volt
dBμA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBμV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent
DCF	**D**istance **C**orrection **F**actor
E	**E**lectric Field
EUT	**E**quipment **U**nder **T**est
f	**F**requency
FCC	**F**ederal **C**ommunications **C**ommission
GRP	**G**round **R**eference **P**lane
Hz	**H**ert**z**
ICES	**I**nterference-**C**ausing **E**quipment **S**tandard
kHz	**k**ilo**H**ert**z**
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**H**ertz
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
TWT	**T**raveling **W**ave **T**ube
V/m	**V**olts **per m**eter

I. Testing Summary

Title 47 of the CFR, Part 15, Subpart C, Reference and Test Description	Conformance	Comments
15.107 (a) Conducted Emission Limits for a Class B as an Unintentional Radiator	Not Tested	Not requested by customer
15.207 (a) FCC Part 15 Periodic Intentional Radiator, Sections: Conducted Emission Limits	Compliant	Measured emissions below applicable limits
15.109 (b) Radiated Emission Limits for a Class A as an Unintentional Radiator	Compliant	Measured emissions below applicable limits
15.35(c) Transmitter Duty Cycle	Compliant	Measured emissions below applicable limits
15.205(a), 15.209(b), 15.231(e): Intentional and Spurious Emissions	Compliant	Measured emissions below applicable limits

II. Equipment Configuration

A. Overview

MET Laboratories, Inc. was contracted by Arbitron to perform testing on the Cellular Hub, under Arbitron purchase order number 16256.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Arbitron, Cellular Hub.

In accordance with §2.955(a) (3), the following data is presented in support of the verification of the Arbitron Cellular Hub. Arbitron should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the Cellular Hub has been **permanently** discontinued, as per §2.955(b).

The results obtained relate only to the item(s) tested.

Model(s) Tested:	Cellular Hub
Model(s) Covered:	Cellular Hub
EUT Specifications:	Primary Power: 115VAC (90-230VAC) with Power Supply/Battery Charger
	Secondary Power: N/A
	Equipment Emissions Class: B
	Highest Clock Frequency: N/A
Evaluated by:	Hoosamuddin S. Bandukwala
Date(s):	December 30, 2004

Power is supplied to the EUT via a detachable two wire AC power cord attached to the AC mains.

B. References

CFR 47, Part 15, Subpart B	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Subpart B, Radio Frequency Devices, Unintentional Radiators
CFR 47, Part 15, Subpart B	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Subpart C, Radio Frequency Devices, Intentional Radiators
ANSI C63.4:2001	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI/NCSL Z540-1-1994	Calibration Laboratories and Measuring and Test Equipment - General Requirements
ANSI/ISO/IEC 17025:2000	General Requirements for the Competence of Testing and Calibration Laboratories

C. Test Site

All testing was performed at MET Laboratories, Inc., Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a semi-anechoic chamber. In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories. In accordance with §2.948(d), MET Laboratories has been accredited by the National Voluntary Laboratory Accreditation Program (Lab Code: 100273-0).

D. Description of Test Sample

The Cellular Hub, Equipment Under Test (EUT) for the remainder of this document, is powered from a 115VAC (90-230VAC) with Power Supply/Battery Charger supply.

The PPM collects and stores data via an internal microphone, internal R.F. receiver and internal accelerometer. The Hub transmits an FCC part 15 compliant, periodic R.F. identification signal to the PPM when it is within approximately 100 feet. The R.F. transmissions are suspended when the Hub is communicating via the cellular network. The Hub transfers the collected data via the cellular network.

E. Equipment Configuration

All cards, racks, etc., incorporated as part of the EUT is included in the following list.

Name / Description	Model Number	Part Number	Serial Number	Revision
Cellular Hub	Arbitron HP105A	None Listed	406503	None Listed

Table 1. Equipment Configuration

F. Support Equipment

All Arbitron supplied support equipment necessary for the operation and testing of the PPM Locator Hub; model HP104A, is listed in the following Support Equipment List.

Description	Manufacturer & Model	Serial Number	Compliance Information	*Customer Supplied Calibration Data
Charger	None Listed	None Listed	None Listed	None Listed
Personal Portable Meter (PPM)	Arbitron DA106A	213136	CE, FCC Part 15, CISPR24	None Listed

Table 2. Support Equipment

* The 'Customer Supplied Calibration Data' column will be marked as either not applicable, not available, or will contain the calibration date supplied by the customer.

G. Mode of Operation

Unit was installed in a simulated collection system. This consists of a PPM and a Hub unit. The push button on the left side of the Hub unit was pressed for 1 second causing the Hub to initiate a simulated call-in to data collection system. The collection system software responds and indicates that the Hub has been found.

H. Method of Monitoring EUT Operation

The device will transmit a fixed ID message to the PPM via a 433.92MHz RF link when connected to the Hub. This occurs for about 300mS every 10 seconds. This mode can be forced by pressing a button located on the side of the Hub unit.

I. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

J. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to Arbitron upon completion of testing.

III. Electromagnetic Compatibility Emission Criteria

Unintentional Radiated Emission Limits

Test Requirement(s): **15.109 (b)** The field strength of radiated emissions from a Class B digital device, as determined at a distance of 3 meters, shall not exceed the Class B limits expressed in Table 3.

Frequency (MHz)	Field Strength (dBμV/m)
	§ 15.109 (b), Class B Limit (dBμV) @ 3m
30 - 88	40.00
88 - 216	43.50
216 - 960	46.50
Above 960	54.00

Table 3. Radiated Emissions Limits calculated from FCC Part 15 Subpart B, 15.109 (b)

Test Procedure: The EUT was placed on a 0.8 m high wooden table (See Photograph 1). Various antennas were placed near the EUT and measurements were taken of the field strengths and frequencies. For final radiated measurements, the EUT was placed in a semi-anechoic chamber, and located 3 m from an adjustable antenna mast. For pre-scanning, the spectrum analyzer scanned the frequency range from 30 MHz to 10 GHz to obtain an emission profile of the EUT. For each point of measurement, the turntable was rotated, and the antenna height was varied between 1 m and 4 m, in order to find the maximum radiated emissions. Measurements above 30 MHz were taken using this technique with the antenna in two polarizations: horizontal and vertical.

Unless otherwise specified, measurements between 30 MHz and 10 GHz were made using a quasi-peak detector with a 120 kHz bandwidth. For measurements above 1 GHz, a 1 MHz detector was used with either a "peak" detector or an "average" detector. In general, all radiated emissions above 1 GHz measurements were made with the peak detector unless otherwise noted.

Test Results: The EUT complies with the requirement[s] of this Section.

Test Engineer(s): Caroline Reynolds

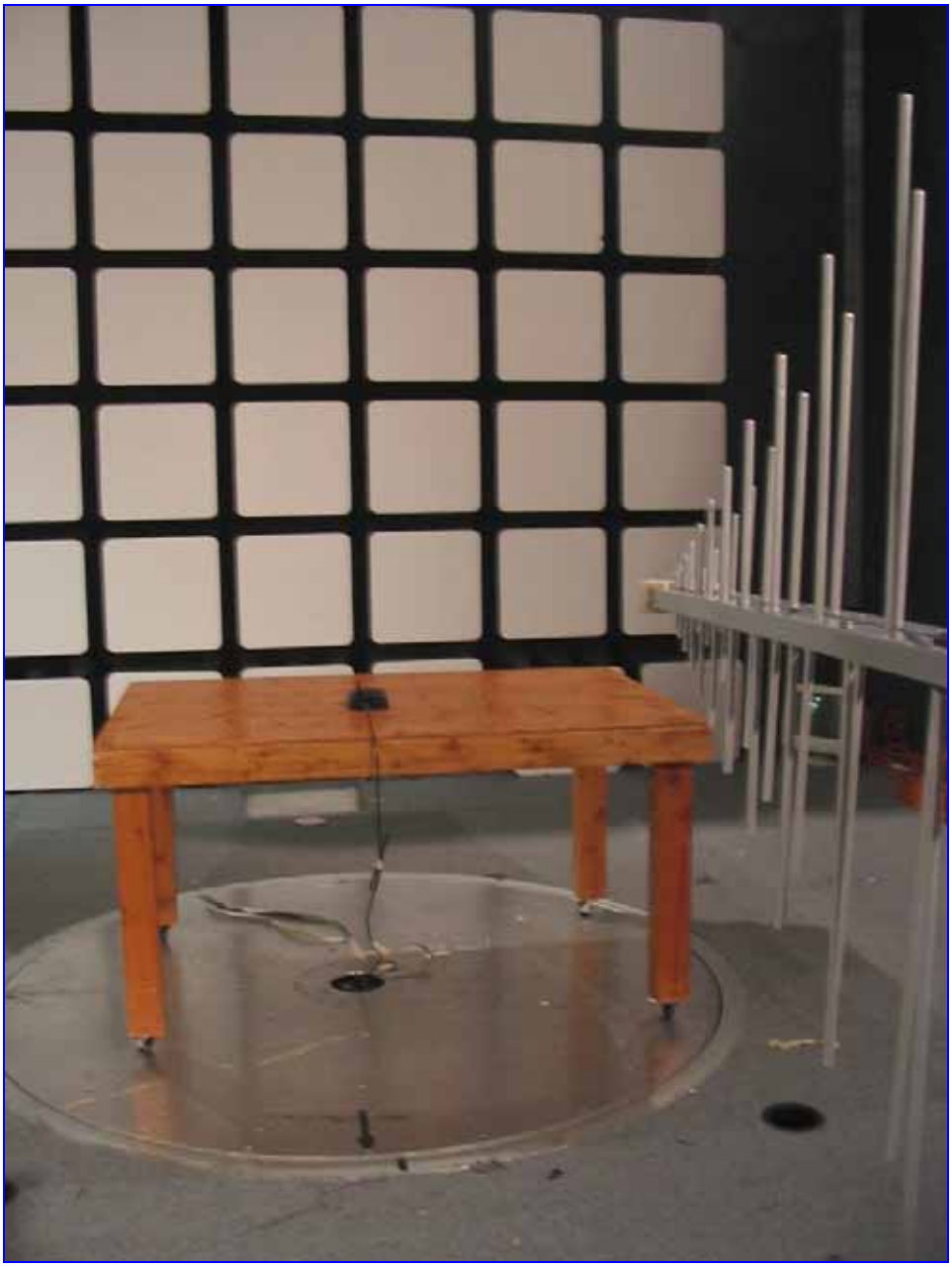
Test Date(s): 11/1/04

Unintentional Radiated Emission Limits Test Results

Radiated Emissions Limits Test Results, Class B

Frequency (MHz)	Antenna Polarity (H/V)	EUT Azimuth (Degrees)	Antenna HEIGHT (cm)	Uncorrected Amplitude (dBuv)	Antenna Correction Factor (dB) (+)	Cable Loss (dB) (+)	Corrected Amplitude (dBuv)	Limit (dBuv)	Margin (dB)
149.76	V	134	100	12.56	8.074	2.058	22.692	43.500	-20.808
151.36	H	270	120	25.4	8.968	2.068	36.436	43.500	-7.064
260.000	H	88.000	100.000	27.860	12.340	2.328	42.528	46.000	-3.472
260.000	V	203.000	240.000	22.930	12.400	2.328	37.658	46.000	-8.342
265.000	V	265.000	194.000	16.850	12.500	2.352	31.702	46.000	-14.298
280.000	H	100.000	100.000	27.000	12.940	2.424	42.364	46.000	-3.636
280.000	V	278.000	100.000	19.440	12.880	2.424	34.744	46.000	-11.256
299.650	H	91.000	100.000	26.170	13.883	2.518	42.571	46.000	-3.429
310.000	H	71.000	100.000	14.350	14.140	2.524	31.014	46.000	-14.986
310.000	V	157.000	140.000	7.500	13.720	2.524	23.744	46.000	-22.256
320.000	H	71.000	100.000	20.800	14.380	2.528	37.708	46.000	-8.292
320.000	V	151.000	108.000	13.990	13.840	2.528	30.358	46.000	-15.642
420.000	V	332.000	106.000	13.75	15.76	3.114	32.624	46.000	-13.376
420.000	H	261.000	215.000	12.46	15.92	3.114	31.494	46.000	-14.506
440.000	V	212.000	126.000	11.07	16.44	3.158	30.668	46.000	-15.332
440.000	H	360.000	195.000	12.85	16.26	3.158	32.268	46.000	-13.732
460.000	V	199.000	100.000	12.92	17.28	3.204	33.404	46.000	-12.596
460.000	H	308.000	176.000	-3.97	16.86	3.204	16.094	46.000	-29.906

Unintentional Radiated Emission Limits Test Setup



Photograph 1. Unintentional Radiated Emission Limits Test Setup

Intentional and Spurious Emission Limits

Test Requirement(s): 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Devices operated under the provisions of *15.231(e)* shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

Test Procedure: The EUT was placed on a 0.8 m high wooden table (See Photograph 1). Various antennas were placed near the EUT and measurements were taken of the field strengths and frequencies. For final radiated measurements, the EUT was placed in in a semi-anechoic chamber. For each point of measurement, the turntable was rotated, and the antenna height was varied between 1 m and 4 m, in order to find the maximum radiated emissions. Measurements above 30 MHz were taken using this technique with the antenna in two polarizations: horizontal and vertical. Unless otherwise specified, measurements were made using a quasi-peak detector with a 120 kHz bandwidth. For measurements above 1 GHz, a 1 MHz detector was used with either a "peak" detector or an "average" detector. In general, all radiated emissions above 1 GHz measurements were made with the peak detector unless otherwise noted.

As required by §15.231 (c) of CFR 47**,** the *occupied bandwidth measurements* were made by placing a log periodic antenna 3m from the radiating source. The antenna was connected to a EMI receiver and the result was stored.

Test Results: The EUT complies with the specified requirement[s] of this section.

Test Engineer(s): Chris Eckert

Test Date(s): 12/21/04 – 12/22/04

Intentional and Spurious Emission Limits Test Results

Periodic Intentional Radiator, Section 15.35 (c), Transmitter Duty Cycle Test Results

Remarks: The duty cycle of one pulsed cycle was found to be 300 mS. This being greater than 0.1 sec, the measured field strength was determined from the average absolute voltage during a 0.1 sec interval during which the field strength was at a maximum.

The device will be software controlled and automatically triggered.

The Transmission from the Locator HUB RF Transmitter will occur once every 10 seconds and will last for a duration of no more than 300 mS. The duty cycle is (0.3 / 10) * 100 = 3%.

The signal application is the transmission of an asynchronous serial binary message for location identification within 100 meters of the transmitter.

Intentional and Spurious Emission Limits Test Results

Periodic Intentional Radiator, Sections 15.205(a), 15.209(a) 15.231(e) Spurious Radiated Emissions Test Results

Frequency (MHz)	EUT Azimuth (Degrees)	Antenna Polarity (H/V)	Antenna HEIGHT (m)	Uncorrected Amplitude (dBuv)	Antenna Correction Factor (dB) (+)	Cable Loss (dB) (+)	Duty Cycle Correction Factor (dB) (-)	Corrected Amplitude (dBuv)	Limit (dBuv)	Margin (dB)
433.89	264	H	1.84	73.37	16.38	4.25	30.46 *	63.54	72.87 **	-9.33
433.89	268	V	1.00	70.11	16.37	4.25	30.46 *	60.26	72.87 **	-12.61

Note 1: * The uncorrected amplitude is the measured field strength using a peak detector. This value was corrected for the duty cycle of 3%, yielding a factor of $20LOG_{10}$ (0.03) = 30.46.

Note 2: ** 15.231(e) Fundamental Limit in dBµV/m = $20LOG_{10}$ (16.6667 (F) - 2833.3333) where F = the fundamental frequency in MHz. $20LOG_{10}$ (16.6667 (433.890) - 2833.3333) = 72.87 dBµV/m.

Intentional and Spurious Emission Limits Test Results

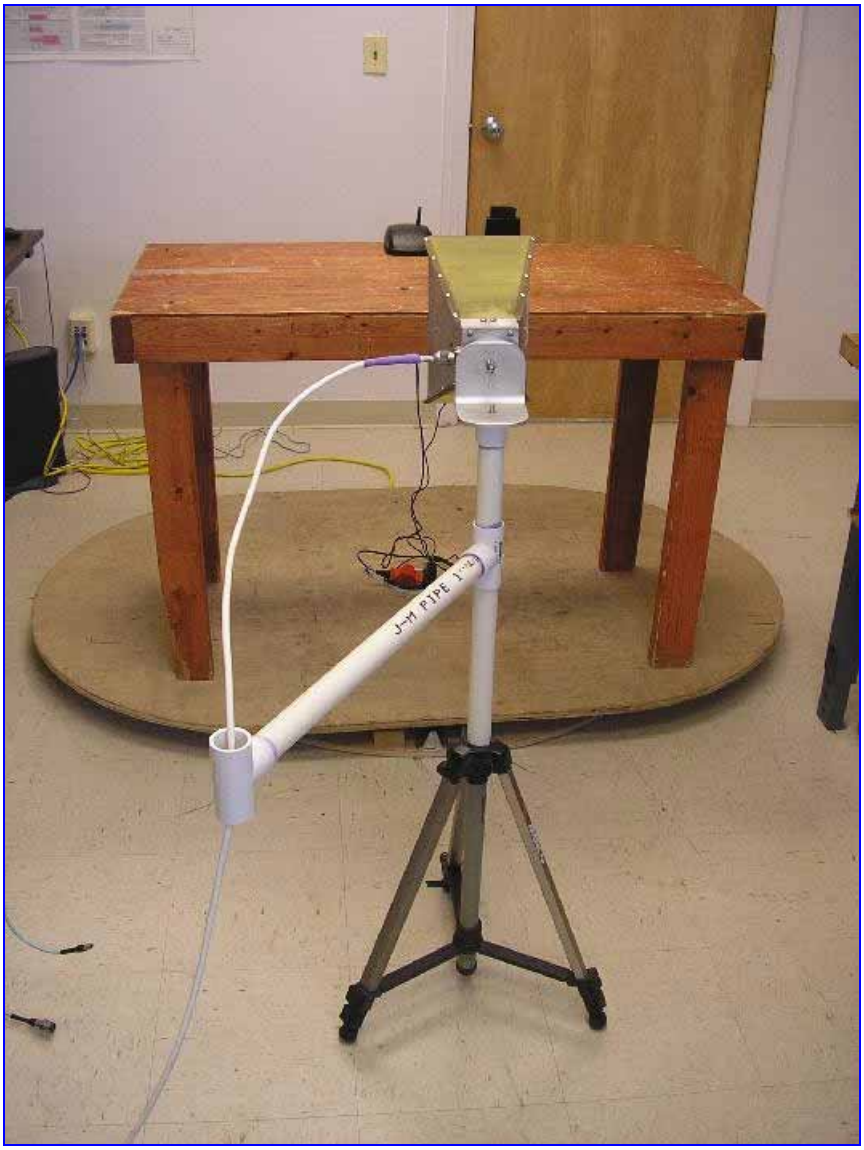
Periodic Intentional Radiator, Sections 15.205(a), 15.209(a) 15.231(e) Spurious Radiated Emissions above 1 GHz Test Results

Frequency (GHz)	Antenna Polarity (H/V)	Antenna HEIGHT (m)	Uncorrected Peak Amplitude (dBuv)	Antenna Correction Factor (dB) (+)	System Gain (dB) (-)	Distance and Duty Cycle Correction Factor (dB) (-)	Corrected Amplitude (dBuv)	Limit (dBuv)	Margin (dB)
1.302	H	1	22.96	26.29	-1.388	9.54	41.09	54***	-12.91
1.302	V	1	24.49	25.95	-1.388	9.54	42.28	54***	-11.72
1.94	H	1	26.07	27.94	-1.656	9.54	46.13	54***	-7.87
1.94	V	1	22.69	27.73	-1.656	9.54	42.54	54***	-11.46
2.548	H	1	17.27	29.52	-2.115	9.54	39.37	54***	-14.63
2.548	V	1	17.11	29.43	-2.115	9.54	39.12	54***	-14.88
2.978	H	1	18.56	30.64	-2.166	9.54	41.83	54***	-12.17
2.978	V	1	18.33	30.64	-2.166	9.54	41.59	54***	-12.41
3.038	H	1	17.6	30.80	-2.312	9.54	41.17	54***	-12.83
3.038	V	1	17.21	30.81	-2.312	9.54	40.79	54***	-13.21

Note: The EUT was tested at 1 m. The data has been corrected for comparison with the 3 m limit using the formula: 20log (1 m/3 m) as expressed in the 'Distance Correction' column.

Note 3: *** The 15.231(e) Spurious Limit in dBµV/m = Fundamental Limit – 20 = (72.87 – 20) = 52.87 dBµV/m. However, spurious emissions are subject to the limit of 15.231 or 15.209, whichever limit permits a higher field strength.

Intentional and Spurious Emission Limits Test Setup



Photograph 2. Intentional and Spurious Emission Limits Test Setup

IV. Test Equipment

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ANSI/NCSL Z540-1-1994 and ANSI/ISO/IEC 17025:2000.

Test Name: Conducted Emissions				**Test Date(s): 11/1/2004**	
MET Asset #	**Nomenclature**	**Manufacturer**	**Model**	**Last Cal Date**	**Cal Due Date**
1U150	EMI RECEIVER	RHODE & SCHWARZ	ESIB7	4/15/2004	4/15/2005
1U32	FACT 4	LINGREN ENCLOSURES	FACT 4	7/25/2004	7/25/2005
1U02	SPECTRUM ANALYZER	HEWLETT PACKARD	8593EM	3/2/2004	3/2/2005
1U27	PRE AMP	HEWLETT PACKARD	0844B H02	1/22/2004	1/22/2005
1U115	HORN ANTENNA	EMCO	3115	4/29/2004	4/29/2005
1U149	BILOG ANTENNA	ETS-LINDGREN	3142C	5/5/2004	5/5/2005
Test Name: Radiated, Intended and Spurious Emissions				**Test Date(s): 12/21/04 – 12/22/04**	
MET Asset #	**Nomenclature**	**Manufacturer**	**Model**	**Last Cal Date**	**Cal Due Date**
1T4363	THERMO-HYGROMETER	CONTROL COMPANY	11-661-13	03/07/03	03/07/05
1T4351	SPECTRUM ANALYZER	AGILENT	E7405A	09/28/04	09/28/05
1T2665	ANTENNA; HORN	EMCO	3115	03/12/04	03/12/05
1T4300	SEMI-ANECHOIC CHAMBER # 1	EMC TEST SYSTEMS	NONE	05/03/03	04/03/06
1T4409	EMI RECEIVER	RHODE & SCHWARS	ESP17	04/08/04	04/08/05
1T4303	ANTENNA; BILOG	SCHAFNER - CHASE EMC	CBL6140A	04/22/04	04/22/05

V. Compliance Information

A. Compliance Information

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/ meter)	Field strength of spurious emissions (microvolts/meter)
40.66–40.70	1,000	100
70–130	500	. 50
130–174	500 to 1,500 *	50 to 150 1
174–260	1,500	150
260–470	1,500 to 5,000 *	150 to 500 1
Above 470	5,000	500
* -Linear interpolations. (1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.		

Table 4. Intentional Radiators Operating at a Periodic Rate which Exceeds that Specified in 15.231 (a)

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I — Marketing of Radio frequency devices:

§ 2.801 Radio-frequency device defined.

As used in this part, a radio-frequency device is any device which in its operation is capable of Emitting radio-frequency energy by radiation, conduction, or other means. Radio- frequency devices include, but are not limited to:

(a) The various types of radio communication transmitting devices described throughout this chapter.

(b) The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.

(c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.

(d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

§ 2.803 Marketing of radio frequency devices prior to equipment authorization.

(a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:

(1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or

(2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.

(d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

(e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:

(i) Compliance testing;

(ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;

(iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or

(v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.

(e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.

(f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the

purchase or lease agreement includes a provision that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J — Equipment Authorization Procedures:

§ 2.901 Basis and Purpose

(a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated.[1] *In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer*, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.

(b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

§ 2.948 Description of measurement facilities.

(a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.

(1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.

(i) If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.

(ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.

[1] In this case, the equipment is subject to the rules of Part 15. More specifically, the equipment falls under Subpart C (of Part 15), which deals with unintentional radiators.

(2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

§ 2.955 Retention of records.

(a) For each equipment subject to verification, the responsible party, as shown in §2.909 shall maintain the records listed as follows:

(1) A record of the original design drawings and specifications and all changes that have been made that may affect compliance with the requirements of §2.953.

(2) A record of the procedures used for production inspection and testing (if tests were performed) to insure the conformance required by §2.953. (Statistical production line Emission testing is not required.)

(b) The records listed in paragraph (a) of this section shall be retained for two years after the manufacture of said equipment item has been permanently discontinued, or until the conclusion of an investigation or a proceeding if the manufacturer or importer is officially notified that an investigation or any other administrative proceeding involving his equipment has been instituted.

§ 2.956 FCC inspection and submission of equipment for testing.

(a) Each responsible party shall upon receipt of reasonable request:

(1) Submit to the Commission the records required by §2.955.

(2) Submit one or more sample units for measurements at the Commission's Laboratory.

(i) Shipping costs to the Commission’s Laboratory and return shall be borne by the responsible party.

(ii) In the event the responsible party believes that shipment of the sample to the Commission's Laboratory is impractical because of the size or weight of the equipment, or the power requirement or for any other reason, the responsible party may submit a written explanation why such shipment is impractical and should not be required.

B. Label and User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A — General:

§ 15.19 Labeling requirements.

(a) In addition to the requirements in Part 2 of this chapter, a device subject to certification or verification shall be labeled as follows:

(1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

(2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

(3) All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

(5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

§ 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart C — Unintentional Radiators:

§ 15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful power line and ground at the power terminal. The lower limit applies at the band edges.

C. ICES-003 Procedural & Labeling Information

This information applies to Digital Apparatus and /or unintentional radiators; for information on further technical requirements of the device reported in this document, consult the applicable Industry Canada standard[s].

From the Industry Canada Electromagnetic Compatibility Advisory Bulletin entitled, "Implementation and Interpretation of the Interference-Causing Equipment Standard for Digital Apparatus, ICES-003" (EMCAB-3, Issue 2, July 1995):

"At present, FCC and ICES technical requirements are essentially equivalent. Therefore, if you have FCC approval (either by meeting Part 15 of the FCC Rules or CISPR Publication 22), the only additional requirements are: to attach a note to the report of the test results for FCC compliance, indicating that these results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations; to maintain these records on file for the requisite five year period; and to provide the device with a notice of compliance in accordance with ICES-003."

Procedural Requirements: According to Industry Canada's Interference Causing Equipment Standard for Digital Apparatus ICES-003 Issue 3, November 22, 1997:

Section 6.1: A record of the measurements and results, showing the date that the measurements were completed, shall be retained by the manufacturer or importer for a period of at least five years from the date shown in the record and made available for examination on the request of the Minister.

Section 6.2: A written notice indicating compliance must accompany each unit of digital apparatus to the end user. The notice shall be in the form of a label that is affixed to the apparatus. Where because of insufficient space or other constraints it is not feasible to affix a label to the apparatus, the notice may be in the form of a statement in the user's manual.

Labeling Requirements: The suggested text for the notice, in English and in French, is provided below, from the Annex. of ICES-003:

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

