MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*
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May 27, 2008

Intech 21, Inc.
21 Harbor Park Drive
Port Washington, NY 11050

Dear Yuri Izvarin,

Enclosed is the EMC test report for compliance testing of the Intech 21, Inc., 916.5 MHz Transceiver I21RU4A as tested to the requirements of the FCC Rules and Regulations, Section 15.249, Title 47 of the CFR, Ch. 1 (10-1-03 ed.), Part 15, Subpart C.

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.

Jennifer Warnell
Documentation Department

Reference: (\Intech 21, Inc.\EMC24354-FCC249)

Electromagnetic Compatibility
Test Report

for the

Intech 21, Inc.
916.5 MHz Transceiver I21RU4A

Verified under
the FCC Certification Rules
contained in
Title 47 of the CFR, Part 15.249, Subpart C
for Intentional Radiators

MET Report: EMC24354-FCC249

May 27, 2008

Prepared For:

Intech 21, Inc.
21 Harbor Park Drive
Port Washington, NY 11050

Prepared By:
MET Laboratories, Inc.
914 W. Patapsco Avenue
Baltimore, Maryland 21230

Electromagnetic Compatibility
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916.5 MHz Transceiver I21RU4A

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for Intentional Radiators

Len Knight
Project Engineer, Electromagnetic Compatibility Lab

Jennifer Warnell
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 Part 15.407, of the FCC Rules under normal use and maintenance.

Shawn McMillen,
Wireless Manager, Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	May 27, 2008	Initial Issue.

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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
E	**E**lectric Field
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
FCC	**F**ederal **C**ommunications **C**ommission
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**er**z**
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**h**er**z**
kPa	**k**ilo**pa**scal
kV	**k**ilo**v**olt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**h**ertz
µH	**microh**enry
µ	**microf**arad
µs	**micros**econds
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
VCP	**V**ertical **C**oupling **P**lane

I. Executive Summary

1.1 Purpose of Test

An EMC evaluation was performed to determine compliance of the Intech 21, Inc., 916.5 MHz Transceiver I21RU4A, with the requirements of Part 15, §15.249. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the 916.5 MHz Transceiver I21RU4A. Intech 21, Inc. should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the 916.5 MHz Transceiver I21RU4A, has been **permanently** discontinued

1.2 Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.249, in accordance with Intech 21, Inc., purchase order number 2546. All tests were conducted using measurement procedure ANSI C63.4-2003.

Reference	Description	Results
Title 47 of the CFR, Part 15, Subpart C, §15.203/15.247(b)(c)	Antenna Requirement	Compliant
Title 47 of the CFR, Part 15, Subpart C, §15.207 (a)	Conducted Emissions for an Intentional Radiator	Compliant
Title 47 of the CFR, Part 15, Subpart C, §15.209 (a)	Radiated Emissions for an Intentional Radiator	Compliant
Title 47 of the CFR, Part 15, Subpart C, §15.249(d)	Field Strength of Fundamental Emissions	Compliant
Title 47 of the CFR, Part 15, Subpart C, §15.249(d)	Field Strength of Unwanted Emissions	Compliant

Table 1. Executive Summary of EMC Part 15.249 ComplianceTesting

II. Equipment Configuration

2.1 Overview

MET Laboratories, Inc. was contracted by Intech 21, Inc. to perform testing on the 916.5 MHz Transceiver I21RU4A, under Intech 21, Inc.'s purchase order number 2546.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Intech 21, Inc., 916.5 MHz Transceiver I21RU4A.

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

Model(s) Tested:	916.5 MHz Transceiver I21RU4A	
Model(s) Covered:	916.5 MHz Transceiver I21RU4A	
EUT Specifications:	Primary Power: 9VDC	
	FCC ID: P8A-I21RU4A	
	Type of Modulations:	OOK
	EUT TX Frequency Ranges:	916.5 – 916.5 MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Evaluated by:	Len Knight	
Date(s):	May 27, 2008	

2.2 References

CFR 47, Part 15, Subpart C	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Allocation, Assignment, and Use of Radio Frequencies
CFR 47, Part 15, Subpart B	Electromagnetic Compatibility: Criteria for Radio Frequency Devices
ANSI C63.4:2003	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

2.3 Test Site

All testing was performed at MET Laboratories, Inc., 914 W. Patapsco Ave., 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).

2.4 Description of Test Sample

The 916.5 MHz Transceiver I21RU4A, Equipment Under Test (EUT), can be used for monitoring sensor signals, transmitting and retransmitting data within a wireless network.

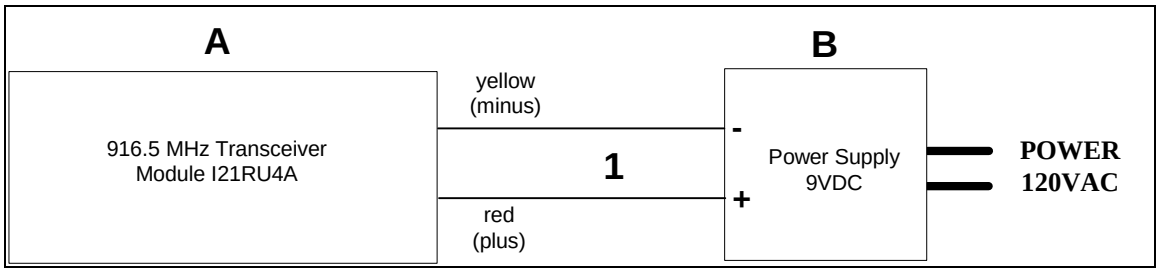


Figure 1. Block Diagram of Test Configuration

2.5 Equipment Configuration

The EUT was set up as outlined in Figure 1, Block Diagram of Test Setup.

Ref. ID	Name / Description	Model Number
A	916.5 MHZ TRANSCEIVER	I21RU4A

Table 2. Equipment Configuration

2.6 Support Equipment

Intech 21, Inc. supplied support equipment necessary for the operation and testing of the 916.5 MHz Transceiver I21RU4A.

Ref. ID	Name / Description	Manufacturer	Model Number	Serial Number
B	POWER SUPPLY 120VAC/9VDC	JAMECO	RELIAPRO DDU090100	N/A

Table 3. Support Equipment

2.7 Ports and Cabling Information

Ref. ID	Cable Description	Qty.	Length (m)	Shielded (Y/N)
1	TWO-WIRE LOW-VOLTAGE CABLE	1	1	NO

Table 4. Ports and Cabling Information

2.8 Mode of Operation

Two samples of the Transceiver were submitted for testing:

1. The sample #1 was configured to transmit a continuous signal.
2. The sample #2 was configured to transmit 10ms pulse every 500ms.

2.9 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.

2.10 Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to Intech 21, Inc. upon completion of testing.

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

Test Requirement: **§ 15.203:** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

a.) Antenna must be permanently attached to the unit.

b.) Antenna must use a unique type of connector to attach to the EUT.

c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Results: The transceiver meets the criteria of this rule part by having a permanently attached external antenna soldered onto the circuit board. The EUT is therefore compliant with §15.203.

Test Engineer(s): Len Knight

Test Date(s): 04/28/08

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.207 Conducted Emissions

Test Requirement(s): **§ 15.207 (a):** For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dBμV)	
	Quasi-Peak	Average
* 0.15- 0.45	66 - 56	56 - 46
0.45 - 0.5	56	46
0.5 - 30	60	50

Table 5. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Test Procedure: The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω/50 μH Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with *ANSI C63.4-1992 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"*. The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50 Ω/50 μH LISN as the input transducer to an EMC/field intensity meter. The tests were conducted in a RF-shielded enclosure.

Test Results: The EUT was compliant with the Class B requirement(s) of this section.

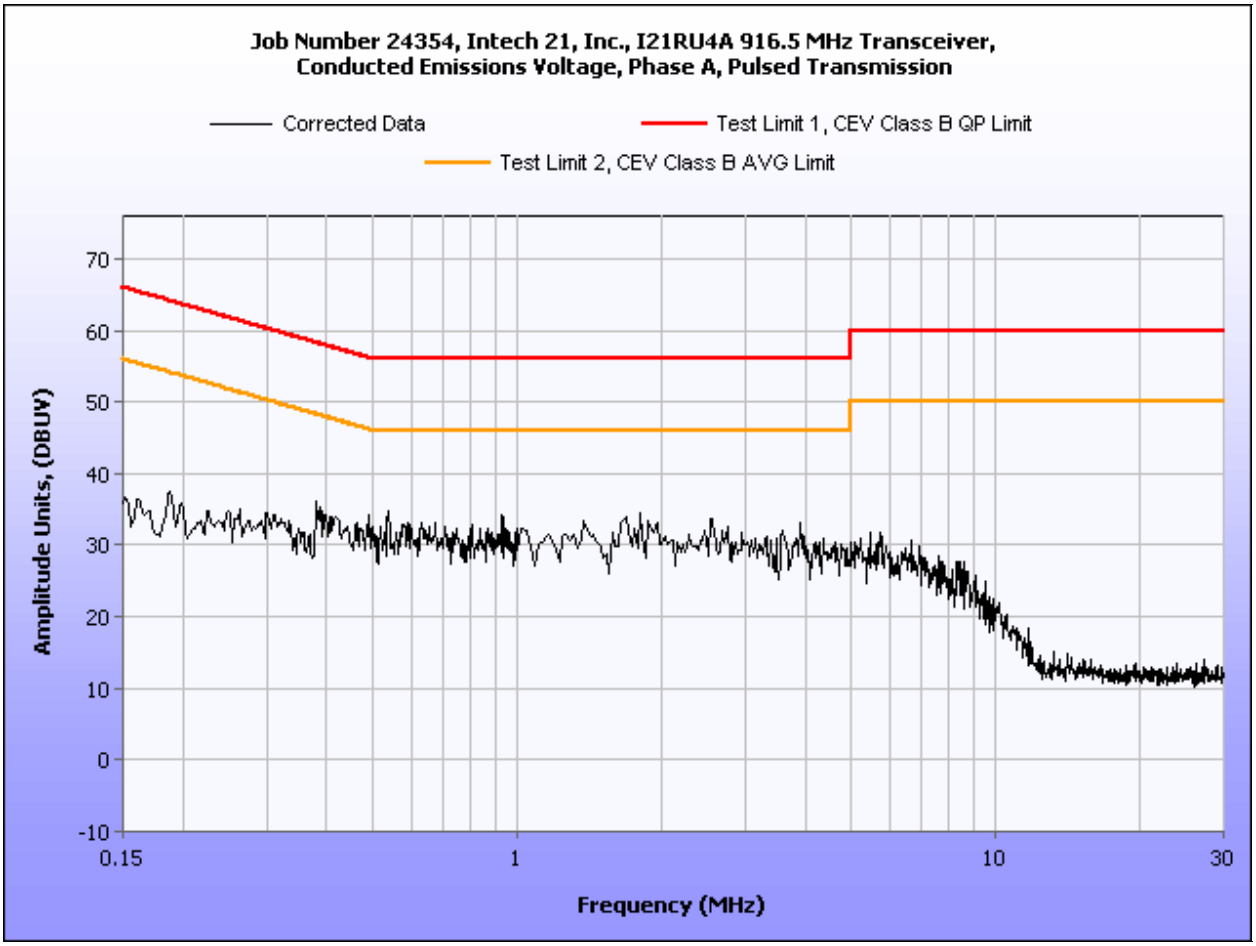
The following peak plots are presented as evidence of compliance. No tabular data was taken since the peak plots were more than 6 dB below the limit.

Test Engineer(s): Len Knight

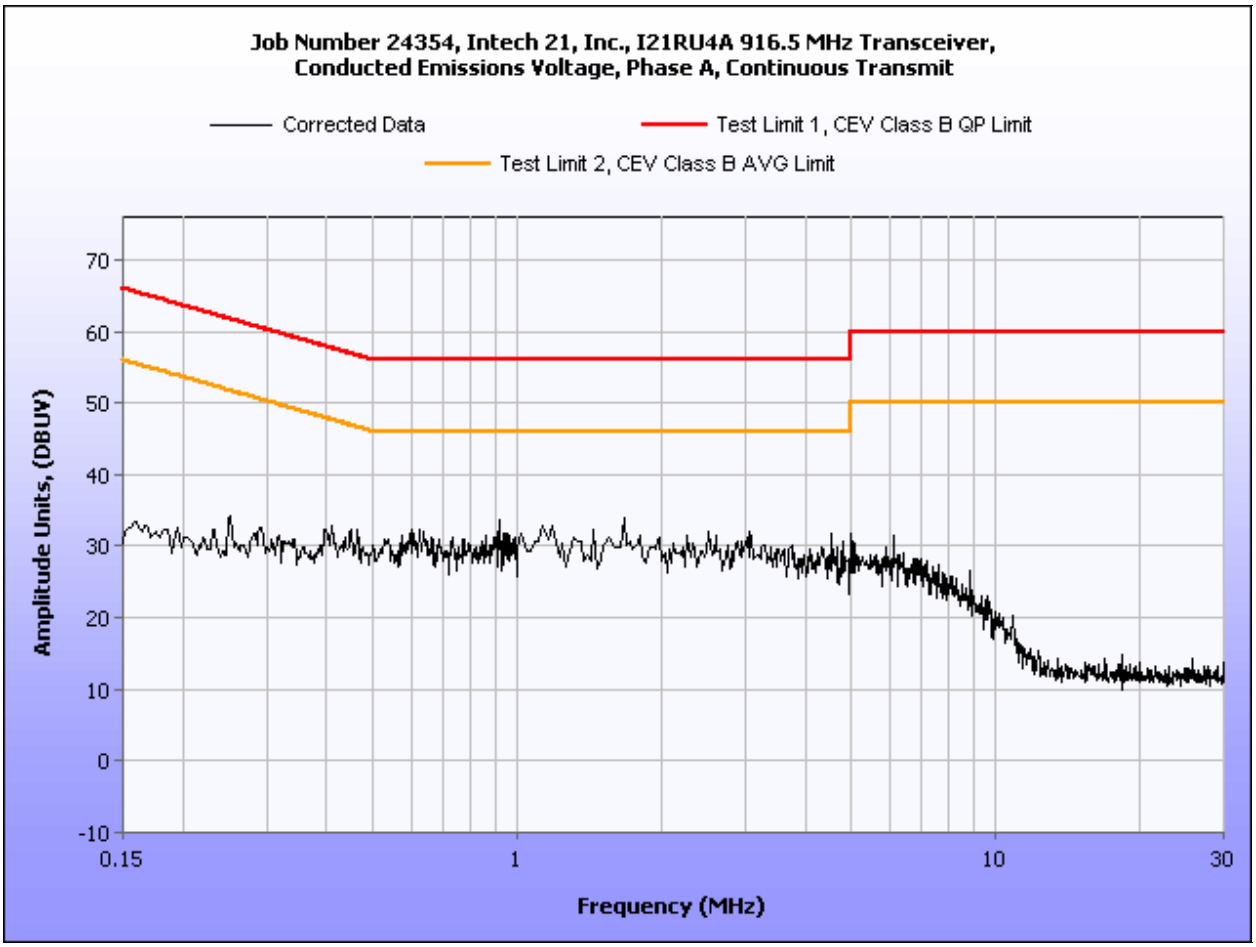
Test Date(s): 04/11/08

Electromagnetic Compatibility Criteria for Intentional Radiators

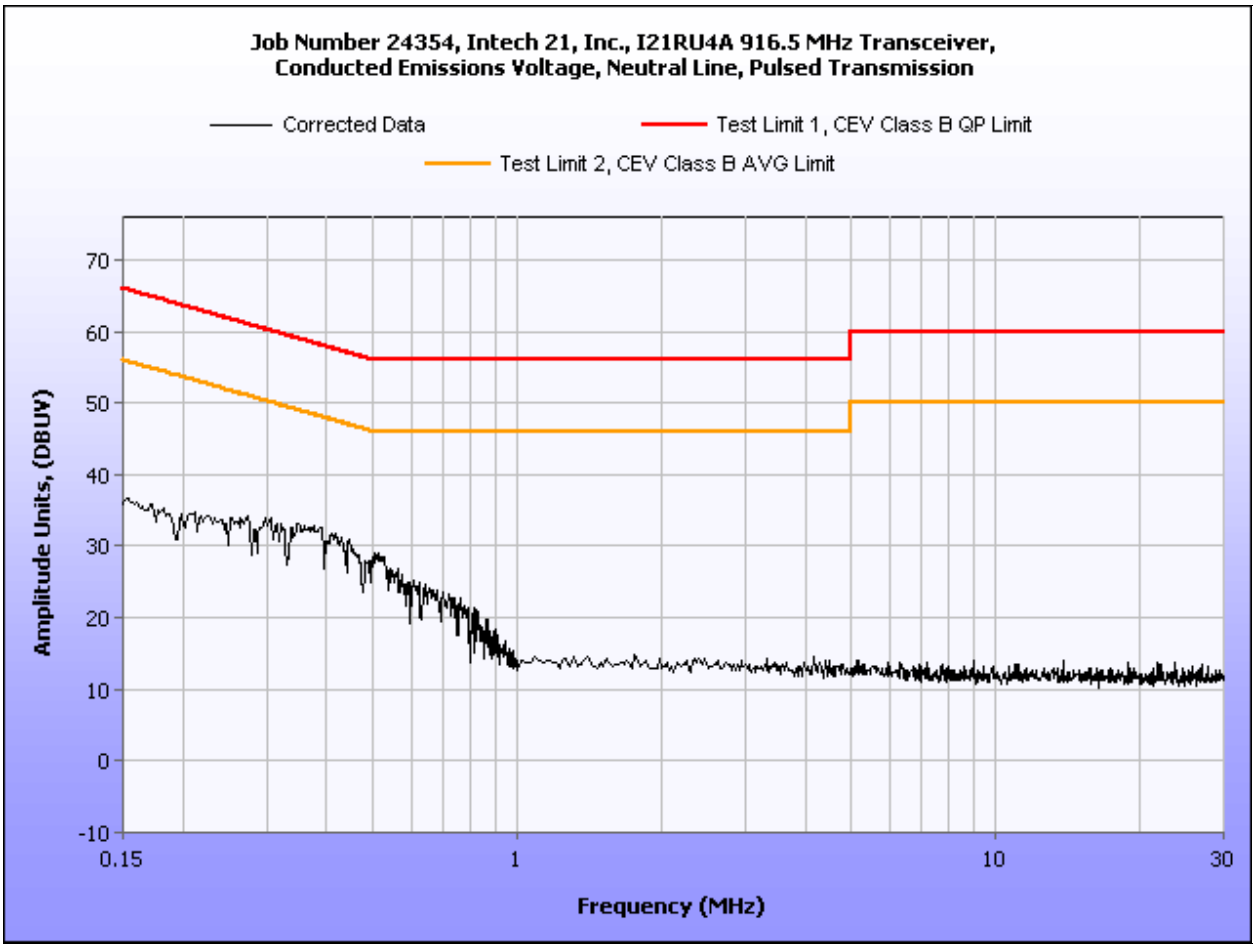
§ 15.207 Conducted Emissions Limits



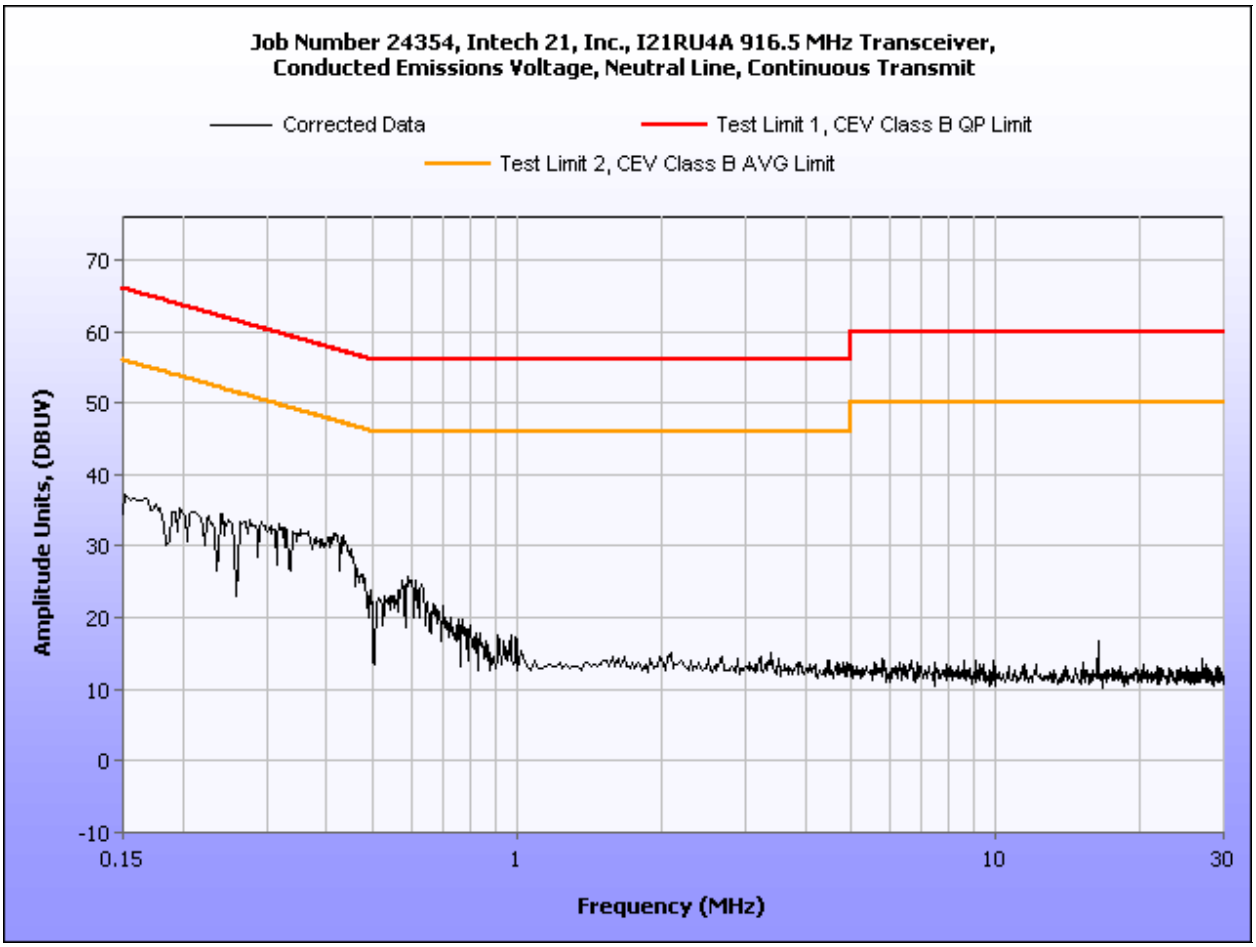
Plot 1. Conducted Emissions, Phase Line, Pulsed Transmission



Plot 2. Conducted Emissions, Phase Line, Continuous Transmit



Plot 3. Conducted Emissions, Neutral Line, Pulsed Transmission



Plot 4. Conducted Emissions, Neutral Line, Continuous Transmit

Photograph 1. Conducted Emissions, Test Setup

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.209 Radiated Emissions

Test Requirement(s): **15.209 (a)** Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (Microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 – 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.		

Table 6. Radiated Emissions Limits from § 15.209 (a)

Test Procedure: The EUT was placed on a 0.8 high non-conductive table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated measurements, the EUT was placed in a semi-anechoic chamber.

For frequencies from 30 MHz to 1 GHz, measurements were made using a quasi-peak detector with a 120 kHz bandwidth. For frequencies above 1 GHz, peak measurements were made with a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz.

For intentional radiators with a digital device portion with operates below 10 GHz, the spectrum was investigated as per § 15.33(a)(1) and §15.33(a)(4); i.e., the lowest RF signal generated or used in the device up to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

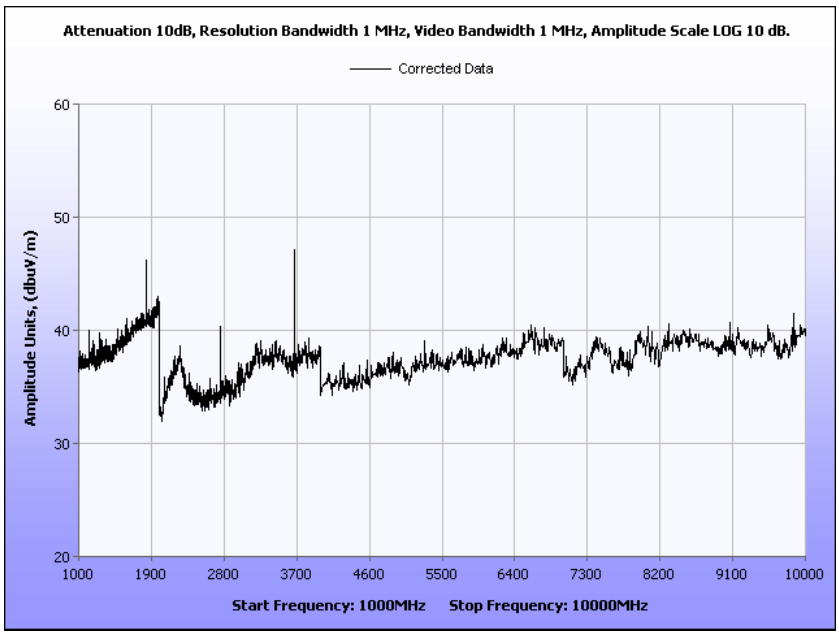
The sample used for testing was the one with pulsed operation. The one represents the most intense mode of operation in a real world application.

Test Results: The EUT was compliant with the requirements of this section.

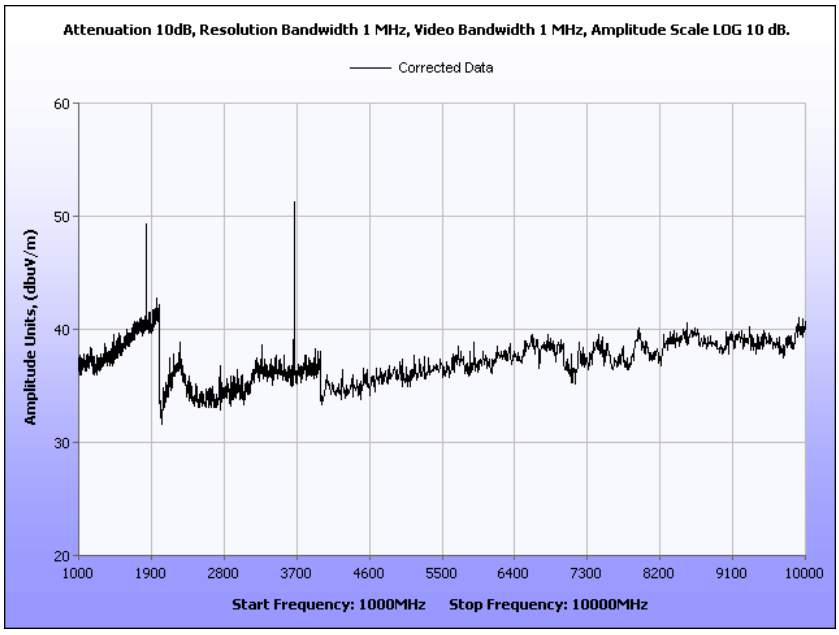
Test Engineer(s): Len Knight

Test Date(s): 04/28/08

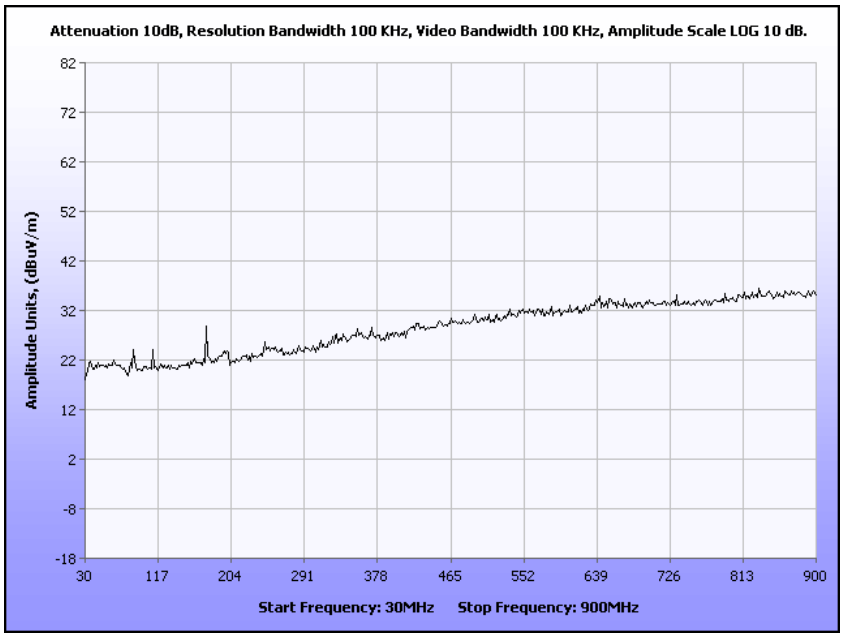
Electromagnetic Compatibility Criteria for Intentional Radiators



Plot 5. Radiated Emissions, Peak Horizontal Plot, 1 - 10 GHz, Pre-Scan



Plot 6. Radiated Emissions, Peak Vertical Plot, 1 - 10 GHz, Pre-Scan



Plot 7. Radiated Emissions, Pre-Scan, Pulsed Transmission

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.209 Radiated Emissions Limits

Frequency (MHz)	EUT Azimuth (Degrees)	Antenna Polarity (H/V)	Antenna HEIGHT (m)	Uncorrected Amplitude (dBuv)	Antenna Correction Factor (dB/m) (+)	Cable Loss (dB) (+)	Distance Correction Factor (dB) (-)	Corrected Amplitude (dBuV/m)	Limit (dBuV/m)	Margin (dB)
*30.000	0	H	1.50	5.26	5.50	0.70	0.00	11.46	40.00	-28.54
*30.000	0	V	1.00	5.34	4.10	0.70	0.00	10.14	40.00	-29.86
66.458	105	H	1.39	5.72	10.24	0.70	0.00	16.66	40.00	-23.34
66.458	210	V	1.00	6.44	9.66	0.70	0.00	16.80	40.00	-23.20
79.344	361	H	2.08	5.95	7.64	0.86	0.00	14.45	40.00	-25.55
79.344	257	V	1.03	5.95	7.09	0.86	0.00	13.90	40.00	-26.10
88.662	0	H	2.35	6.09	6.89	1.16	0.00	14.14	43.50	-29.36
88.662	146	V	0.99	9.68	6.63	1.16	0.00	17.46	43.50	-26.04
185.827	158	H	1.04	5.95	10.07	1.10	0.00	17.12	43.50	-26.38
185.827	352	V	1.00	6.02	9.45	1.10	0.00	16.57	43.50	-26.93
989.569	220	H	1.79	6.09	23.99	2.20	0.00	32.28	54.00	-21.72
989.569	222	V	1.30	6.16	23.89	2.20	0.00	32.25	54.00	-21.75
*1000.000	0	H	1.50	6.09	23.80	2.20	0.00	32.09	54.00	-21.91
*1000.000	0	V	1.00	6.09	23.70	2.20	0.00	31.99	54.00	-22.01

Table 7. Radiated Emissions Limits Test Results

* Noise floor measurement.

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.209 Radiated Emissions Limits

Photograph 2. Radiated Emission Test Setup

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.249(c) Field Strength of Fundamental and Harmonic Emissions

Test Requirements: **FCC Part 15 Subpart C, § 15.249(a)**

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Fundamental (dBuV/m)	Field Strength of Harmonics (microvolts/meter)	Field Strength of Harmonics (dBuV/m)
902-928 MHz	50	94.0	500	54.0
2400-2483.5 MHz	50	94.0	500	54.0
5725-5875 MHz	50	94.0	500	54.0
24.0-24.25 GHz	250	108.0	2500	68.0

Table 8. Limits for Fundamental and Harmonics Radiated Emissions – Limits are specified at 3m distance as per §15.249(b)

Test Procedure: The EUT was placed on a 0.8 high non-conductive table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated measurements, the EUT was placed in a semi-anechoic chamber.

For frequencies from 30 MHz to 1 GHz, measurements were made using a quasi-peak detector with a 120 kHz bandwidth. For frequencies above 1 GHz, peak measurements were made with a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz.

For intentional radiators with a digital device portion with operates below 10 GHz, the spectrum was investigated as per § 15.33(a)(1) and §15.33(a)(4); i.e., the lowest RF signal generated or used in the device up to the 10^{th} harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

The sample used for testing was the one with pulsed operation. The one represents the most intense mode of operation in a real world application.

Test Engineer(s): Len Knight

Test Date(s): 04/10/08

Test Results: Equipment complies with § 15.249 (a).

Frequency (MHz)	EUT Azimuth (Degrees)	Antenna Polarity (H/V)	Antenna HEIGHT (m)	Corrected Amplitude (dBuV/m)	Limit (dBuV/m)	Margin (dB)
916.670	361	H	1.45	91.90	94.00	-2.10
916.670	18	V	1.37	91.77	94.00	-2.23

Table 9. Field Strength of Fundamental Emissions, Test Results

Frequency (GHz)	Antenna Polarity (H/V)	Antenna HEIGHT (m)	Corrected Amplitude (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1.833	H	1.00	25.03	54.00	-28.97
1.833	V	1.00	25.18	54.00	-28.82
2.750	H	1.00	20.65	54.00	-33.35
2.750	V	1.00	21.67	54.00	-32.33
3.667	H	1.00	25.07	54.00	-28.93
3.667	V	1.00	25.00	54.00	-29.00

Table 10. Field Strength of Unwanted Emissions, Test Results

Photograph 3. Field Strength of Fundamental Emissions, 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: Part 15.249, Subpart C					Test Date: 04/28/08
MET Asset #	**Equipment**	**Manufacturer**	**Model**	**Last Cal Date**	**Cal Due Date**
1T4300	SEMI-ANECHOIC CHAMBER # 1	EMC TEST SYSTEMS	NONE	02/17/2006	01/17/2009
1T4612	ESA-E SERIES SPECTRUM ANALYZER	AGILENT	E4407B	01/04/2008	01/04/2009
1T4442	PRE-AMPLIFIER, MICROWAVE	MITEQ	AFS42-01001800-30-10P	SEE NOTE	
1T2665	ANTENNA; HORN	EMCO	3115	04/17/2007	04/17/2008
1T4592	RF FILTER KIT	VARIOUS	N/A	SEE NOTE	

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

V. Certification & User's Manual Information

Certification & User's Manual Information

5.1 Certification Information

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 proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

Certification & User's Manual Information

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.

§ 2.907 Certification.

(a) Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.

(b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

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

Certification & User's Manual Information

§ 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.

(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.

Certification & User's Manual Information

5.2 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.

Verification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B — 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 B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/ TV technician for help.

