



Flom Test Lab
EMI, EMC, RF Testing Experts Since 1963

toll-free: (866) 311-3268

fax: (480) 926-3598

www.flomlabs.com

info@flomlabs.com

Date: April 22, 2009

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Coencorp Consultant Inc
Equipment: FGD-01043, FGD-00582-03, MOD-01011-02
FCC ID: VY3-DUL5NA
FCC Rules: 15.249

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

Hoosamuddin S. Bandukwala, Lab Director

Flom Test Lab
3356 N. San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

p07b0001, d08a0018 Rev 4.0

List Of Exhibits
(FCC **Certification** (Transmitters) - Revised 9/28/98)

Applicant: Coencorp Consultant Inc

FCC ID: VY3-DUL5NA

By Applicant:

1. Letter Of Authorization
2. Identification Drawings
 - ☐ Id Label
 - ☐ Location Info
 - ☐ Attestation Statement(S)
 - ☐ Location of Compliance Statement
3. Documentation: 2.1033(B)
 - (3) User Manual(S)
 - (4) Operational Description
 - (5) Block Diagram
 - (5) Schematic Diagram
 - (7) External Photographs
 - Internal Photographs
 - Parts List
 - Active Devices

By F.T.L. Inc.

- A. Testimonial & Statement of Certification
- B. Statement of Qualifications



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Test Report

for

FCC ID: VY3-DUL5NA

Model: FGD-01043, FGD-00582-03, MOD-01011-02

to

Federal Communications Commission

Rule Part(s)15.249

Date Of Report: April 22, 2009

On the Behalf of the Applicant: Coencorp Consultant Inc
8 Place du Commerce
Bureau 100
Brossard, Quebec, J4W 3H2
Canada

Attention of: Ahmad Tavassili
Ph 450-672-4222
Fax 560-672-6038
Email: ahmad@coencorp.com

Supervised By:

Hoosamuddin S. Bandukwala, Lab Director

Test Report Revision History

Revision	Date	Revised By	Reason for revision
1.0	April 22, 2009	J Erhard	Original Document
2.0	May 28, 2009	J Erhard	Add stand-alone test data and antenna connection information.
3.0	June 2, 2009	J Erhard	Add 15.207 test data
4.0	June 8, 2009	J Erhard	Add calibration data for LISN

The applicant has been cautioned as to the following:

15.21 Information to User.

The users manual or instruction manual for an intentional 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.

15.27(a) Special Accessories.

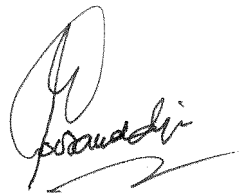
Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Testimonial And Statement Of Certification

This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.



Certifying Engineer:

Hoosamuddin S. Bandukwala, Lab Director

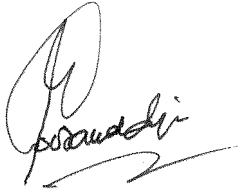
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Required information per ISO 17025-2005, paragraph 5.10.2:

a) **Test Report**

- b) Laboratory: Flom Test Lab, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044A-1) Chandler, AZ 85225
- c) Report Number: d08a0018
- d) Client: Coencorp Consultant Inc
- e) Identification: Model: FGD-01043, FGD-00582-03, MOD-01011-02
FCC ID: VY3-DUL5NA, IC: 7522A-VDUL5NA
- Description: Vehicle Data Unit 900 MHz transmitter
- f) EUT Condition: Not required unless specified in individual tests.
- g) Report Date: April 22, 2009
- h, j, k): As indicated in individual tests.
- i) Sampling method: No sampling procedure used.
- l) Uncertainty: In accordance with FTL internal quality manual.
- m) Supervised by:



Hoosamuddin S. Bandukwala, Lab Director

- n) Results: The results presented in this report relate only to the item tested.
- o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

List Of General Information Required For Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to 15.249

Sub-Part 2.1033

(c)(1):

Name and Address of Applicant: Coencorp Consultant Inc

(c)(2): **FCC ID:** VY3-DUL5NA

Model Number: FGD-01043, FGD-00582-03, MOD-01011-02

(c)(3): **Instruction Manual(s):**

Please See Attached Exhibits

(c)(4): **Type of Emission:** FM

(c)(5): **FREQUENCY RANGE, MHz:** 910 to 920

(c)(6): **Power Rating, mW:** 0.063
_____ Switchable _____ Variable X N/A

(c)(7): **Maximum Power Rating, mW:** 5.0

15.203: Antenna Requirement:

_____	The antenna is permanently attached to the EUT
<u> X </u>	The antenna uses a unique coupling
_____	The EUT must be professionally installed
_____	The antenna requirement does not apply

Subpart 2.1033 (continued)

(c)(8): Circuit Diagram/Circuit Description:

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please See Attached Exhibits

(c)(9): Label Information:

Please See Attached Exhibits

(c)(10): Photographs:

Please See Attached Exhibits

(c)(11): Digital Modulation Description:

☐ Attached Exhibits

☒ N/A

(c)(12): Test And Measurement Data:

Follows

Sub-part
2.1033(b):

Test And Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2 and the following individual Parts: 15.249 Operation within bands 902-928, 2400-2483.5, 5725-5825 MHz and 24.0-24.25 GHz

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2003 unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Measurement results, unless otherwise noted, are worst-case measurements.

A2LA

“A2LA has accredited Flom Test Labs, Inc. Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 ‘General Requirements for the Competence of Testing and Calibration Laboratories’ and any additional program requirements in the identified field of testing.”

Please refer to www.a2la.org for current scope of accreditation.

Certificate number: 2152.01



IC O.A.T.S. Number: 2044A-1

FCC OATS Reg. #933597

Test Results Summary

Specification	Test Name	Pass, Fail, N/A	Comments
15.249(a)	Fundamental Field Strength	Pass	
15.249(d)	Out of Band Spurious Emissions	Pass	
RSS-210	99% occupied Bandwidth	Pass	
15.207	Powerline Conducted Emissions	Pass	

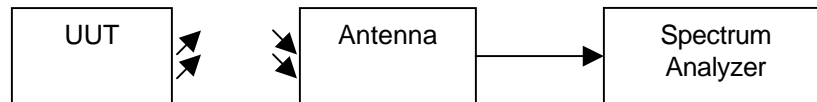
Name of Test: Fundamental Field Strength
Specification: 15.249(a)
Test Equipment Utilized i00033, i00089, i00103

Engineer: J Erhard
Test Date: 4/22/2009

Test Procedure

The UUT was tested on an Open Area Test Site (OATS) at a distance of 3 meters from the receiving antenna. A spectrum analyzer was used to verify that the UUT met the requirements for Fundamental Field Strength. The transmitter was tested with two antenna types, round patch and dipole.

Test Setup



Analyzer Settings

Detector Settings	RBW	VBW	Span
Peak	1 MHz	3 MHz	as necessary
Quasi Peak	120 KHz	300 kHz	100 Hz

Sample Calculations

Corrected Value = Measured Value + Correction factor
 Correction factor = ACF + Cable loss

Fundamental Field Strength (DC Unit)

Tuned Freq (MHz)	Antenna Type	Peak Measured Level (dBuV/m)	Correction Factor (dB)	Corrected Level (dBuV/m)	Peak Limit (dBuV/m)	Result
910	Dipole	59.6	26.2	85.8	114.0	Pass
915	Dipole	64.6	26.4	91.0	114.0	Pass
920	Dipole	61.8	26.6	88.4	114.0	Pass

Tuned Freq (MHz)	Antenna Type	Quasi Peak Measured Level (dBuV/m)	Correction Factor (dB)	Corrected Level (dBuV/m)	Quasi Peak Limit (dBuV/m)	Result
910	Dipole	48.5	26.2	74.7	94.0	Pass
915	Dipole	49.7	26.4	76.1	94.0	Pass
920	Dipole	51.5	26.6	78.1	94.0	Pass

Fundamental Field Strength (VDU)

Tuned Freq (MHz)	Antenna Type	Peak Measured Level (dBuV/m)	Correction Factor (dB)	Corrected Level (dBuV/m)	Peak Limit (dBuV/m)	Result
910	Round Patch	59.0	26.2	85.2	114.0	Pass
910	Dipole	56.6	26.2	82.8	114.0	Pass
915	Round Patch	66.5	26.4	92.9	114.0	Pass
915	Dipole	64.8	26.4	91.2	114.0	Pass
920	Round Patch	64.1	26.6	90.7	114.0	Pass
920	Dipole	60.0	26.6	86.6	114.0	Pass

Tuned Freq (MHz)	Antenna Type	Quasi Peak Measured Level (dBuV/m)	Correction Factor (dB)	Corrected Level (dBuV/m)	Quasi Peak Limit (dBuV/m)	Result
910	Round Patch	45.8	26.2	72.0	94.0	Pass
910	Dipole	50.6	26.2	76.8	94.0	Pass
915	Round Patch	51.6	26.4	78.0	94.0	Pass
915	Dipole	45.7	26.4	72.1	94.0	Pass
920	Round Patch	48.3	26.6	74.9	94.0	Pass
920	Dipole	49.6	26.6	76.2	94.0	Pass

Fundamental Field Strength (Stand Alone)

Tuned Freq (MHz)	Antenna Type	Peak Measured Level (dBuV/m)	Correction Factor (dB)	Corrected Level (dBuV/m)	Peak Limit (dBuV/m)	Result
910	Round Patch	59.5	26.2	85.7	114.0	Pass
910	Dipole	61.2	26.2	87.4	114.0	Pass
915	Round Patch	62.5	26.4	88.9	114.0	Pass
915	Dipole	66.5	26.4	92.9	114.0	Pass
920	Round Patch	63.4	26.6	90.0	114.0	Pass
920	Dipole	66.2	26.6	92.8	114.0	Pass

Tuned Freq (MHz)	Antenna Type	Quasi Peak Measured Level (dBuV/m)	Correction Factor (dB)	Corrected Level (dBuV/m)	Quasi Peak Limit (dBuV/m)	Result
910	Round Patch	49.1	26.2	75.3	94.0	Pass
910	Dipole	45.6	26.2	71.8	94.0	Pass
915	Round Patch	50.2	26.4	76.6	94.0	Pass
915	Dipole	49.6	26.4	76.0	94.0	Pass
920	Round Patch	51.2	26.6	77.8	94.0	Pass
920	Dipole	50.3	26.6	76.9	94.0	Pass

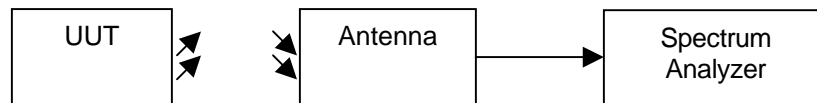
Name of Test: Radiated Spurious Emissions
Specification: 15.249(d)
Test Equipment Utilized i00033, i00089, i00103

Engineer: J Erhard
Test Date: 4/22/2009

Test Procedure

The UUT was tested in a semi anechoic chamber at a distance of 3 meters from the receiving antenna. A spectrum analyzer was used to verify that the UUT met the requirements for Radiated Spurious Emissions. The harmonics for each tuned frequency was examined to beyond the 10th harmonic. All antenna and cable correction factors were input into the spectrum analyzer to provided a corrected final reading. A RBW of 1 MHz and a VBW of 3 MHz were used.

Test Setup



Radiated Spurious Emissions (DC Unit)

Tuned Freq (MHz)	Measured Frequency (MHz)	Antenna Type	Peak Measured Level (dBuV/m)	Peak Limit (dBuV/m)	Result
910	1899.95	Dipole	46.23	74.0	Pass
910	2729.95	Dipole	37.58	74.0	Pass
915	1830.05	Dipole	44.97	74.0	Pass
915	2745.1	Dipole	36.58	74.0	Pass
920	1840.125	Dipole	45.74	74.0	Pass
920	2760.125	Dipole	41.32	74.0	Pass

Tuned Freq (MHz)	Measured Frequency (MHz)	Antenna Type	Average Measured Level (dBuV/m)	Average Limit (dBuV/m)	Result
910	1899.95	Dipole	44.05	54.0	Pass
910	2729.95	Dipole	31.5	54.0	Pass
915	1830.05	Dipole	42.62	54.0	Pass
915	2745.1	Dipole	31.93	54.0	Pass
920	1840.125	Dipole	40.57	54.0	Pass
920	2760.125	Dipole	37.1	54.0	Pass

Radiated Spurious Emissions (VDU)

Tuned Freq (MHz)	Measured Frequency (MHz)	Antenna Type	Peak Measured Level (dBuV/m)	Peak Limit (dBuV/m)	Result
910	1899.95	Round Patch	53.65	74.0	Pass
910	2729.95	Round Patch	42.09	74.0	Pass
910	1899.95	Dipole	47.69	74.0	Pass
910	2729.95	Dipole	38.62	74.0	Pass
915	1830.05	Round Patch	47.96	74.0	Pass
915	2745.1	Round Patch	35.26	74.0	Pass
915	1830.05	Dipole	48.64	74.0	Pass
915	2745.1	Dipole	39.62	74.0	Pass
920	1840.125	Round Patch	49.52	74.0	Pass
920	2760.125	Round Patch	36.35	74.0	Pass
920	1840.125	Dipole	44.63	74.0	Pass
920	2760.125	Dipole	39.67	74.0	Pass

Tuned Freq (MHz)	Measured Frequency (MHz)	Antenna Type	Average Measured Level (dBuV/m)	Average Limit (dBuV/m)	Result
910	1899.95	Round Patch	45.68	54.0	Pass
910	2729.95	Round Patch	35.62	54.0	Pass
910	1899.95	Dipole	48.64	54.0	Pass
910	2729.95	Dipole	34.29	54.0	Pass
915	1830.05	Round Patch	46.89	54.0	Pass
915	2745.1	Round Patch	37.54	54.0	Pass
915	1830.05	Dipole	46.52	54.0	Pass
915	2745.1	Dipole	36.72	54.0	Pass
920	1840.125	Round Patch	40.38	54.0	Pass
920	2760.125	Round Patch	37.25	54.0	Pass
920	1840.125	Dipole	46.30	54.0	Pass
920	2760.125	Dipole	38.91	54.0	Pass

Radiated Spurious Emissions (Stand Alone)

Tuned Freq (MHz)	Measured Frequency (MHz)	Antenna Type	Peak Measured Level (dBuV/m)	Peak Limit (dBuV/m)	Result
910	1899.95	Round Patch	55.63	74.0	Pass
910	2729.95	Round Patch	42.36	74.0	Pass
910	1899.95	Dipole	48.25	74.0	Pass
910	2729.95	Dipole	38.04	74.0	Pass
915	1830.05	Round Patch	43.85	74.0	Pass
915	2745.1	Round Patch	39.62	74.0	Pass
915	1830.05	Dipole	42.52	74.0	Pass
915	2745.1	Dipole	38.93	74.0	Pass
920	1840.125	Round Patch	44.60	74.0	Pass
920	2760.125	Round Patch	38.29	74.0	Pass
920	1840.125	Dipole	45.32	74.0	Pass
920	2760.125	Dipole	38.24	74.0	Pass

Tuned Freq (MHz)	Measured Frequency (MHz)	Antenna Type	Average Measured Level (dBuV/m)	Average Limit (dBuV/m)	Result
910	1899.95	Round Patch	46.33	54.0	Pass
910	2729.95	Round Patch	35.24	54.0	Pass
910	1899.95	Dipole	46.55	54.0	Pass
910	2729.95	Dipole	30.35	54.0	Pass
915	1830.05	Round Patch	47.52	54.0	Pass
915	2745.1	Round Patch	33.98	54.0	Pass
915	1830.05	Dipole	44.57	54.0	Pass
915	2745.1	Dipole	30.20	54.0	Pass
920	1840.125	Round Patch	45.97	54.0	Pass
920	2760.125	Round Patch	33.69	54.0	Pass
920	1840.125	Dipole	42.88	54.0	Pass
920	2760.125	Dipole	37.54	54.0	Pass

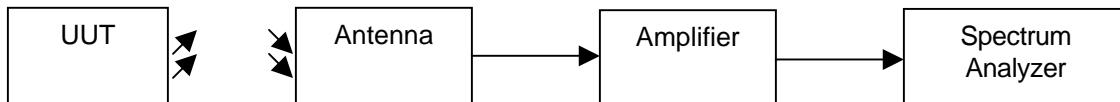
Name of Test: 99% Occupied Bandwidth
Specification: RSS 210 Industry Canada Only
Test Equipment Utilized i00103, i00331

Engineer: J Erhard
Test Date: 3/30/2009

Test Procedure

The UUT was tested on an Open Area Test Site (OATS) at a distance of 3 meter from the receiving antenna. The Span was set wide enough to capture the entire transmit spectrum and the resolution bandwidth was set to at least 1% of the span. The analyzer was set to max hold the 99% bandwidth was measured.

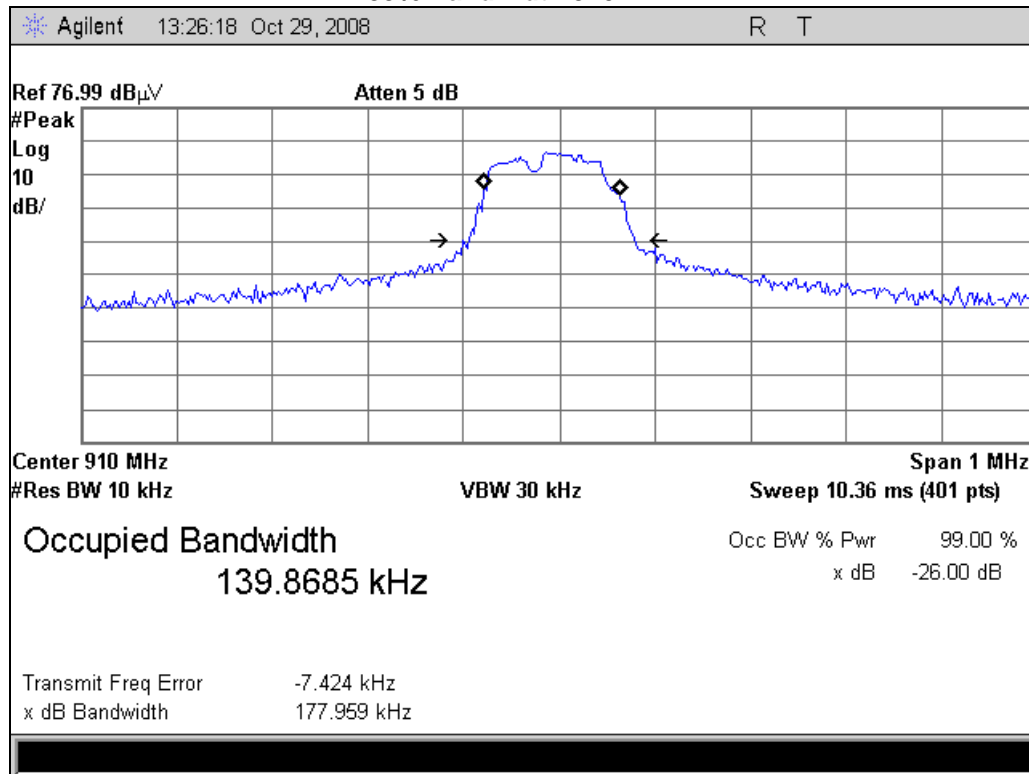
Test Setup



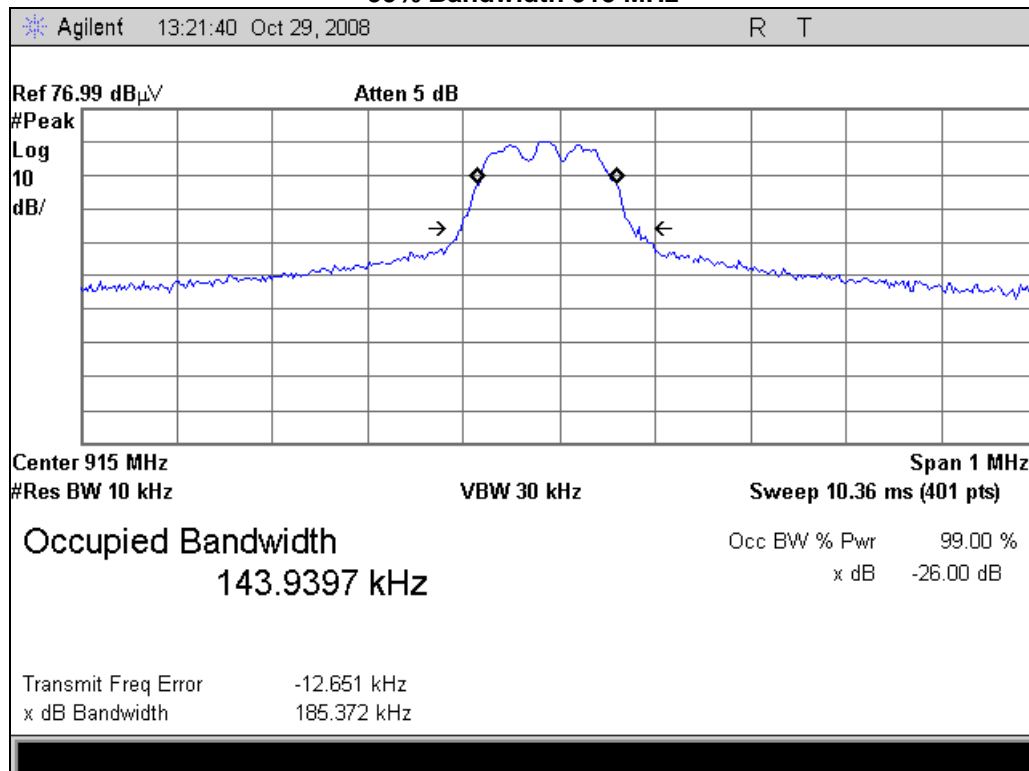
Occupied Bandwidth Summary

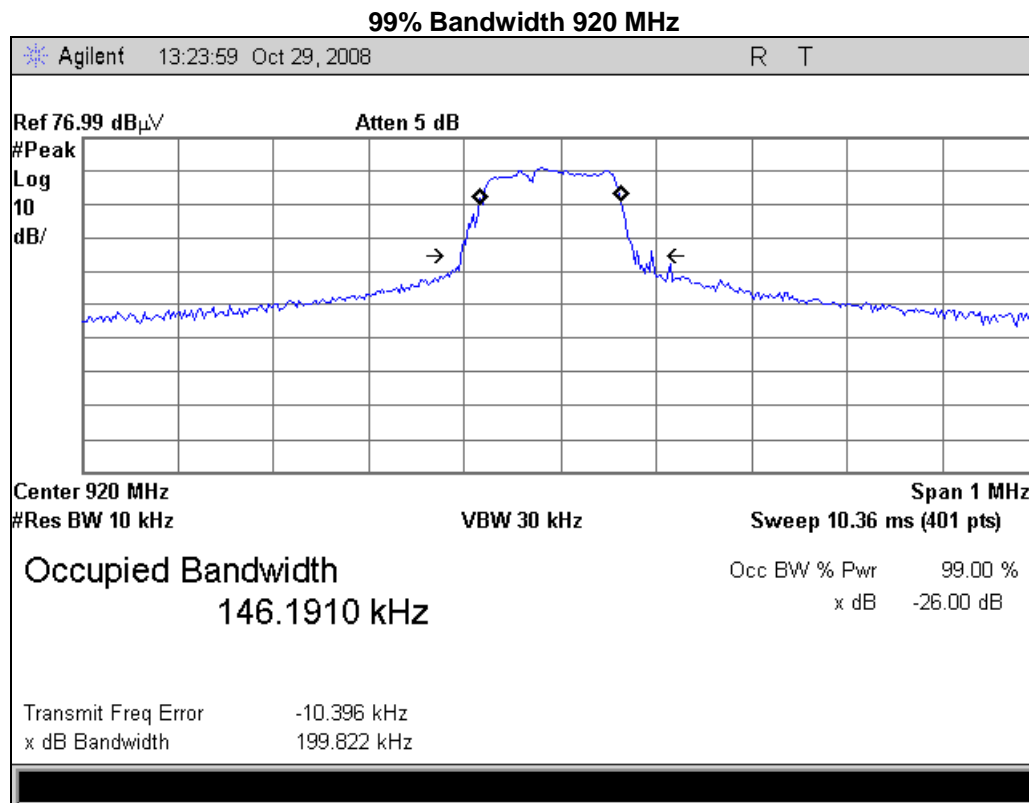
Frequency MHz	Recorded Measurement	Result
910	139.8685 kHz	Pass
915	143.9397 kHz	Pass
920	146.1910 kHz	Pass

99% Bandwidth 910 MHz



99% Bandwidth 915 MHz





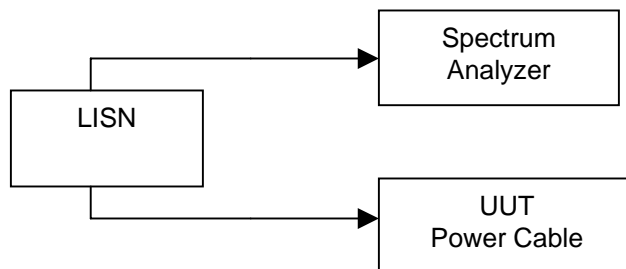
Name of Test: Powerline Conducted Emissions
Specification: 15.207
Test Equipment Utilized i00033, i00270

Engineer: J Erhard
Test Date: 4/21/2009

Test Procedure

The UUT power cable connected to a LISN and the monitored output of the LISN was connected directly to a spectrum analyzer. The conducted emissions from 150 kHz to 30 MHz were monitored and compared to the specification limits. The supply voltage was 120 VAC at 60 Hz.

Test Setup



Line 1 Test Results (In Chassis)

Emission Frequency	Detector	Monitored Level (dBuV/m)	LISN Factor (dB)	Attenuation (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
174.21 KHz	Quasi-Peak	49.89	0.2	10	60.1	65.31	-5.2
171.99 KHz	Quasi-Peak	50.08	0.2	10	60.3	65.37	-5.07
170.76 KHz	Quasi-Peak	51.39	0.2	10	61.61	65.41	-3.8
168.14 KHz	Quasi-Peak	50.29	0.2	10	60.51	65.48	-4.97
151.38 KHz	Quasi-Peak	51.69	0.29	10	62.02	65.96	-3.94
150.09 KHz	Quasi-Peak	52.85	0.3	10	63.19	66	-2.8

Line 2 Test Results (In Chassis)

Emission Frequency	Detector	Monitored Level (dBuV/m)	LISN Factor (dB)	Attenuation (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
168.75 KHz	Quasi-Peak	50.15	0.2	10	60.37	65.46	-5.09
165.88 KHz	Quasi-Peak	49.78	0.2	10	60.01	65.55	-5.54
151.8 KHz	Quasi-Peak	50.69	0.28	10	61.01	65.95	-4.94
151.67 KHz	Quasi-Peak	50.55	0.28	10	60.87	65.95	-5.08
150.63 KHz	Quasi-Peak	50.91	0.29	10	61.24	65.98	-4.74
150.26 KHz	Quasi-Peak	51.67	0.3	10	62.01	65.99	-3.99

All Average measurements were greater than -20 dB below the limit.

Line 1 Test Results (Stand Alone)

Emission Frequency	Detector	Monitored Level (dBuV/m)	LISN Factor (dB)	Attenuation (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
205.99 KHz	Quasi-Peak	46.72	0.2	10	46.95	64.56	-7.61
186.6 KHz	Quasi-Peak	48.24	0.2	10	48.44	64.95	-6.51
169.75 KHz	Quasi-Peak	46.78	0.2	10	47.00	65.44	-8.44
200.4 KHz	Quasi-Peak	54.2	0.2	10	61.42	64.56	-3.14
169.99 KHz	Quasi-Peak	46.67	0.2	10	56.89	65.44	-8.54
164.08 KHz	Quasi-Peak	50.04	0.2	10	60.27	65.6	-5.33

Line 2 Test Results (Stand Alone)

Emission Frequency	Detector	Monitored Level (dBuV/m)	LISN Factor (dB)	Attenuation (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
226.47 KHz	Quasi-Peak	43.67	0.19	10	53.92	63.82	-9.9
203.15 KHz	Quasi-Peak	49.49	0.2	10	59.71	64.48	-4.77
199.72 KHz	Quasi-Peak	50.69	0.2	10	60.91	64.58	-3.67
196.35 KHz	Quasi-Peak	50.57	0.2	10	60.78	64.68	-3.89
178.87 KHz	Quasi-Peak	51.14	0.2	10	61.35	65.18	-4.17
178.25 KHz	Quasi-Peak	50.27	0.2	10	60.48	65.19	5.29

All Average measurements were greater than -20 dB below the limit.

Test Equipment Utilized

Description	MFG	Model Number	FTL Asset Number	Last Cal Date	Cal Due Date
Spectrum Analyzer	HP	85462A	i00033	10/14/2008	10/14/2009
Log Periodic Antenna	Apriel	2001	i00089	10/19/2007	10/19/2009
Horn Antenna	EMCO	3115	i00103	11/25/2008	11/25/2009
LISN	FCC	FCC-LISN-50-32-2-01	i00270	9/17/2008	9/17/2010
Spectrum Analyzer	Agilent	E4407B	i00331	11/03/2008	11/03/2009

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

END OF TEST REPORT