

KTL Test Report: 9R01704

Applicant: Electra Enterprises
390 Edgeley Blvd.
Concord, Ontario
L4K 3Z6

**Equipment Under Test:
(E.U.T.)** Video Transmitter

FCC ID: NIM2400

In Accordance With: **FCC Part 15, Subpart C, Paragraph 15.209**
General Limits For Low Power Transmitters

Tested By: KTL Ottawa Inc.
3325 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

R. Grant, Wireless Group Manager

Date:

Total Number of Pages: 14

EQUIPMENT: Video Transmitter

FCC ID: NIM2400

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*EQUIPMENT: Video Transmitter**FCC ID: NIM2400*

Section 1. Summary Of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15, Subpart C for low power devices. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated Emissions were made on an open area test site.



New Submission



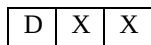
Production Unit



Class II Permissive Change



Pre-Production Unit



Equipment Code

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE
TEST SPECIFICATIONS HAVE BEEN MADE.

See “ Summary of Test Data”.



NVLAP LAB CODE: 100351-0

It is recommended that the margin of compliance be improved to allow for manufacturing tolerances.

TESTED BY: _____ DATE: _____
Kevin Carr, Technologist

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This report applies only to the items tested.

*EQUIPMENT: Video Transmitter**FCC ID: NIM2400*

Summary Of Test Data

Name Of Test	Para. No.	Result
Powerline Conducted Emissions	15.207	Not Applicable
Radiated Emissions	15.209	Complies
Occupied Bandwidth	Not Specified	Complies

Footnotes For N/A's:

Battery Powered

Test Conditions:**Indoor**

Temperature: 24 °C

Humidity: 35 %

Outdoor

Temperature: 15 °C

Humidity: 35 %

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Section 2. General Equipment Specification**Manufacturer:** Electra Enterprises**Model No.:** 2400**Serial No.:** None**Date Received In Laboratory:** March 24, 2000**KTL Identification No.:** Item #4**Frequency Range:** 2410 – 2475 MHz**Operating Frequency(ies) of Sample:** 2410.8 MHz, 2453 MHz and 2473 MHz**Modulation:** Amplitude Modulation**Emission Designator:** 13M4A3F**Integral Antenna****Yes**
☒**No**
☐

Note: *If antenna is not integral to transmitter explain method of attachment and type of unique connector:*

*EQUIPMENT: Video Transmitter**FCC ID: NIM2400*

Section 3. Radiated Emissions

Para. No.: 15.209**Test Performed By:** Kevin Carr**Date of Test:** April 3, 2000

Minimum Standard: The field strength of emissions from the device shall not exceed the following limits.

Fundamental (MHz)	Field Strength (μ V/m)	Field Strength (dB μ V)
0.009 - 0.490	2400/F(kHz) @ 300m	—
0.490 - 1.705	24000/F(kHz) @ 30m	—
1.705 - 30	30 @ 30m	—
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies. The worst-case emission level is 92.5 dB μ V/m @ 3m at 2411 MHz. This is 1.5 dB below the specification limit.

Measurement Data: (Procedure ANSI C63.4-1992)

Series resistor in II network equal to 120 Ω for fundamental frequencies of 2453 MHz and 2473 MHz. Series resistor equal to 82 Ω for fundamental frequency of 2411 MHz

EQUIPMENT: Video Transmitter

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Test Data - Radiated Emissions

Test Distance (meters) : 3		Range: A Tower		Receiver: HP8564E		RBW(kHz): 1000		Detector: Peak	
Freq. (MHz)	Ant. *	Pol. (V/H)	RCVD Signal (dBµV/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Dist. Corr. (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2411.0	H2	V	56.3	35.3			91.6	94.0	2.4
2411.0	H2	H	57.2	35.3			92.5	94.0	1.5
4822.0	H2	V	48.33	34.4	-45.5		37.23	54.0	16.77
4821.0	H2	H	47.83	34.4	-45.5		36.73	54.0	17.27
7232.0	H2	V	57.0	38.0	-46.8		48.2	54.0	5.8
7232.0	H2	H	58.0	38.0	-46.8		49.2	54.0	4.8
9644.0	H2	V	40.2	40.1	-40.7		39.6	54.0	14.4
9644.0	H2	H	39.8	40.1	-40.7		39.2	54.0	14.8
12055.0	H2	V	41.8	40.2	-40.7		41.3	54.0	12.7
12055.0	H2	H	40.6	40.2	-40.7		40.1	54.0	13.9
14465.0	H2	V	40.7	42.0	-41.1		41.6	54.0	12.4
14465.0	H2	H	41.0	42.0	-41.1		41.9	54.0	12.1
2453.0	H2	V	55.8	35.4			91.2	94.0	2.8
2453.0	H2	H	56.1	35.4			91.5	94.0	2.5
4906.0	H2	V	50.9	43.6	-45.6		48.9	54.0	5.1
4906.0	H2	H	51.2	43.6	-45.6		49.2	54.0	4.8
7359.0	H2	V	57.7	37.0	-46.9		47.8	54.0	6.2
7359.0	H2	H	58.0	37.0	-46.9		48.1	54.0	5.9
9812.0	H2	V	46.8	38.6	-41.0		44.4	54.0	9.6
9812.0	H2	H	45.6	38.6	-41.0		43.2	54.0	10.8
12265.0	H2	V	44.5	40.2	-40.7		44.0	54.0	10.0
12265.0	H2	H	43.5	40.2	-40.7		43.0	54.0	11.0
14718.0	H2	V	44.1	41.0	-41.3		43.8	54.0	10.2
14718.0	H2	H	43.9	41.0	-41.3		43.6	54.0	10.4
Notes: B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = Dipole * Re-measured using dipole antenna. ** Includes cable loss when amplifier is not used. *** Includes cable loss. () Denotes failing emission level. N.D. = Not Detected									

EQUIPMENT: Video Transmitter

FCC ID: NIM2400

Test Data - Radiated Emissions, continued

Test Distance (meters) : 3		Range: A Tower		Receiver: HP8564E		RBW(kHz): 1000		Detector: Peak	
Freq. (MHz)	Ant. *	Pol. (V/H)	RCVD Signal (dBμV/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Dist. Corr. (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2473.0	H2	V	57.0	35.5			92.5	94.0	1.5
2473.0	H2	H	55.3	35.5			90.8	94.0	3.2
4946.0	H2	V	49.0	43.8	-45.6		47.2	54.0	6.8
4946.0	H2	H	50.7	43.8	-45.6		48.9	54.0	5.1
7419.0	H2	V	58.4	38.2	-46.8		49.8	54.0	4.2
7419.0	H2	H	60.5	38.2	-46.8		51.9	54.0	2.1
9892.0	H2	V	48.4	39.8	-41.0		47.2	54.0	6.8
9892.0	H2	H	46.9	39.8	-41.0		45.7	54.0	8.3
12365.0	H2	V	42.9	40.5	-40.8		42.6	54.0	11.4
12365.0	H2	H	43.4	40.5	-40.8		43.1	54.0	10.9
14838.0	H2	V	44.0	41.9	-41.3		44.6	54.0	9.4
14838.0	H2	H	42.9	41.9	-41.3		43.5	54.0	10.5
Notes: B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = Dipole * Re-measured using dipole antenna. ** Includes cable loss when amplifier is not used. *** Includes cable loss. () Denotes failing emission level. N.D. = Not Detected									

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Radiated Photographs (Worst Case Configuration)

Front View



Rear View



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Section 4. Occupied Bandwidth

Para. No.: Not Applicable

Test Performed By: Kevin Carr	Date of Test: April 3, 2000
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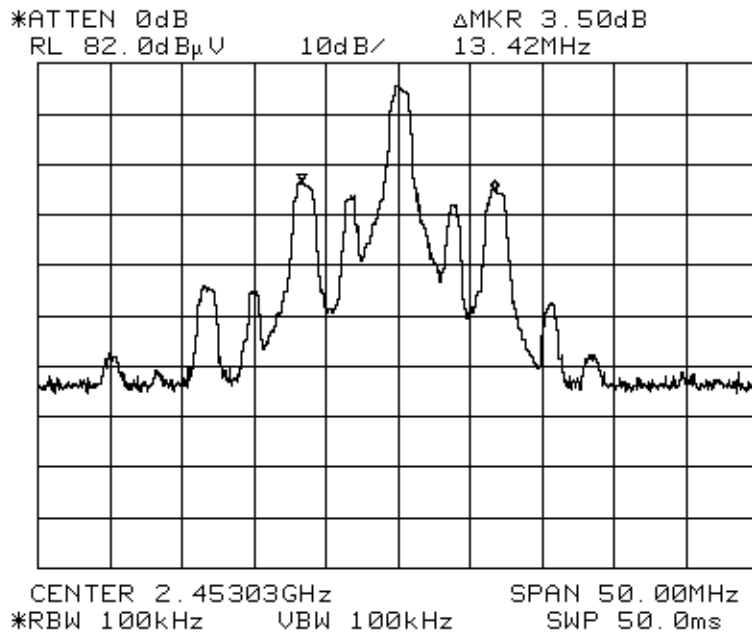
Minimum Standard: Not specified.

Test Results: The 99% power occupied bandwidth is 13.42 MHz.

Measurement Data: See attached graph(s).

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Section 5. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	3846A01407	May 31/99	May 31/00
	Power Supply	Astron	VS-50M	8405071	NCR	NCR
	Biconilog Antenna	EMCO	3143	1038	NCR	NCR
3 Year	Standard Gain Horn	Electro-Metrics	SH-50/60-1	FA000479	July 29/97	July 29/00
	High Pass Filter	K&L	11SH10-4000	FA001340	COU	COU
1 Year	RF AMP	Aventek	AWT-8035	FA001428	Jan. 7/00	Jan. 7/01
1 Year	RF AMP	DBS, NARDA	DWT-1861 N23U40	01	Jan. 7/00	Jan. 7/01

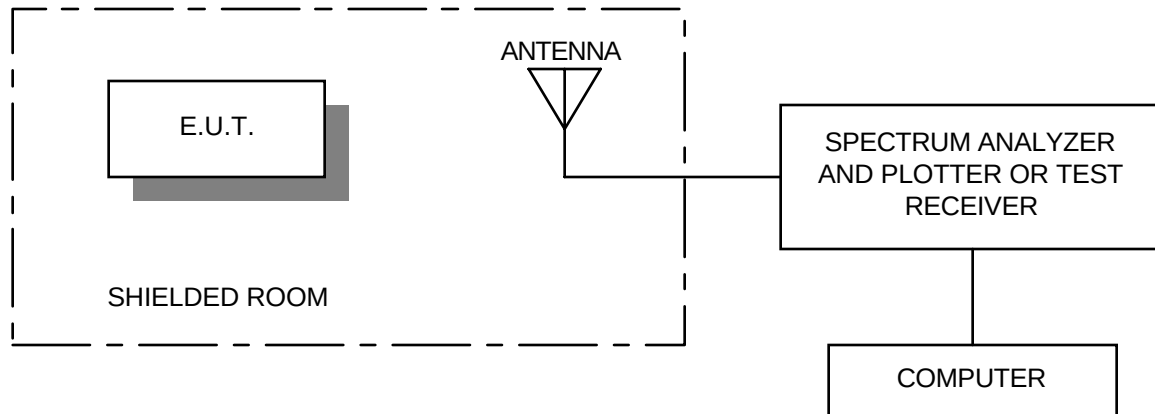
NA: Not Applicable
NCR: No Cal Required
COU: CAL On Use

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Annex A
Test Diagrams

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Radiated Prescan



Test Site For Radiated Emissions

