MEASUREMENT AND TECHNICAL REPORT

OMNEX CONTROL SYSTEMS INC
74-1833 Coast Meridian Road
Port Coquitlam, BC V3C 6G5
Canada

DATE: 10 April 2006

This Report Concerns:	Original Grant: X	Class II Change:
Equipment Type:	T-2300 Controller with LPD-24RC Transceiver	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes: **Defer until:**	No: X
Company Name **agrees to notify the Commission by:** **of the intended date of announcement of the product so that the grant can be issued on that date.**	N/A	
Transition Rules Request per 15.37?	Yes:	No: X*

(*) FCC Part 15, Paragraph(s) **15.209(a), 15.247(a), 15.247(b), and 15.247(c)**
(*) Canadian Specification(s) **RSS-210 A8.1(1), RSS-210 A8.1(2), RSS-210 A8.1(4), RSS-210 A8.4(2) and RSS-210 A8.5**

Report Prepared by:

TÜV AMERICA, INC
10040 Mesa Rim Road
San Diego, CA 92121-2912
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1.0 GENERAL INFORMATION

1.1 Product Description

General Equipment Description -- *NOTE: This information will be input into your test report as shown below.*

EUT Description: 2.4GHz Transceiver module

EUT Name: LPD-24RC

Model No.: LPD-24RC Serial No.: --

Product Options: --

Configurations to be tested: Modular Approvals for FCC/IC and CE Marking

Power Requirements

Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)

Voltage: Battery Powered (supplied) (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: --

Current (Amps/phase(max)): -- Current (Amps/phase(nominal)): --

Other: --

Other Special Requirements

--

Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)

Light Industrial, used on cement trucks and other heavy equipment

1.2 Related Submittal Grant

None

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1.3 Tested System Details

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system are:

None

1.4 Test Methodology

Purpose of Test: To demonstrate compliance with the following tests.

Test Summary					
		Summary of Results			
Test Description	Paragraph Number	Low Channel	Mid Channel	High Channel	Pass/Fail
Bandwidth	15.247(a)(1)(i) RSS-210 A8.1(1)	--	30.1 kHz	--	Pass
Channel Separation	15.247(a)(1) RSS-210 A8.1(2)	--	1200 kHz	--	Pass
Time of Occupancy	15.247(a)(1)(i) RSS-210 A8.1(4)	--	168 msec	--	Pass
Number of Hopping Channels	15.247(a)(1)(i) RSS-210 A8.1(4)	--	63	--	Pass
Radiated Spurious Emissions – Restricted Bands (1GHz to 25GHz)	15.247(c)/ 15.209(a) RSS-210 A8.5	-3.72 dB @ 7209.3 MHz	-5.98 dB @ 4883.4 MHz	-0.22 dB @ 7435.8 MHz	Pass
Radiated Emissions (30 to 1000 MHz)	15.209(a) RSS-210 A8.5	No Detectable Emissions	No Detectable Emissions	No Detectable Emissions	Pass
RF Output Power	15.247(b) RSS-210 A8.4 (2)	5.83 dBm (0.003828 W)	5.53 dBm (0.003573 W)	4.26 dBm (0.002667 W)	Pass

Testing was performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8-M1983.

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1.5 Test Facility

The open area test site and conducted measurement data were tested by:

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10040 Mesa Rim Road
San Diego, CA 92121-2912
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The Test Site Data and performance comply with ANSI C63.4 and are registered with the FCC, 7435 Oakland Mills Road, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

2.0 SYSTEM TEST CONFIGURATION

2.1 Justification

The EUT was initially tested for FCC emissions in the following configuration:

See Test Setup Photos Exhibit

2.2 EUT Exercise Software

None

2.3 Special Accessories

None

2.4 Equipment Modifications

None

2.5 Configuration of Test System

See Test Setup Photos Exhibit

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3.0 BANDWIDTH EQUIPMENT/DATA
CHANNEL SEPARATION EQUIPMENT/DATA
TIME OF OCCUPANCY EQUIPMENT/DATA
NUMBER OF HOPPING CHANNELS EQUIPMENT/DATA
RADIATED SPURIOUS EMISSIONS EQUIPMENT/DATA
RADIATED EMISSIONS EQUIPMENT/DATA
RF OUTPUT POWER EQUIPMENT/DATA

Test Conditions: BANDWIDTH: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(1)
CHANNEL SEPARATION: FCC Part 15.247(a)(1) and RSS-210 A8.1(2)
TIME OF OCCUPANCY: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)
NUMBER OF HOPPING CHANNELS: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)
RADIATED SPURIOUS EMISSIONS: FCC Part 15.209(a), 15.247(c), and RSS-210 A8.5
RADIATED EMISSIONS: FCC Part 15.209(a) and RSS-210 A8.5
RF OUTPUT POWER: FCC Part 15.247(b) and RSS-210 A8.4(2)

The following measurements were performed at the San Diego Testing Facility:

☐ **- Test not applicable**

■ - Roof (Small Open Area Test Site)

Test Equipment Used:

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Date Cal'ed
E4446A	6823	Spectrum Analyzer	Agilent	US44300486	04/06
3115	6475	Double Ridged Waveguide Antenna	EMCO	9908-5927	06/06
AA-190-10.00.0	731	30' Coaxial Cable	United Microwave	--	Verified
AA-190-06.00.0	657	3' Coaxial Cable	United Microwave	--	Verified
AMF-5D-010180-35-10P	719	Preamplifier	Miteq	549460	Verified

Remarks: One year calibration cycle for all test equipment and sites.

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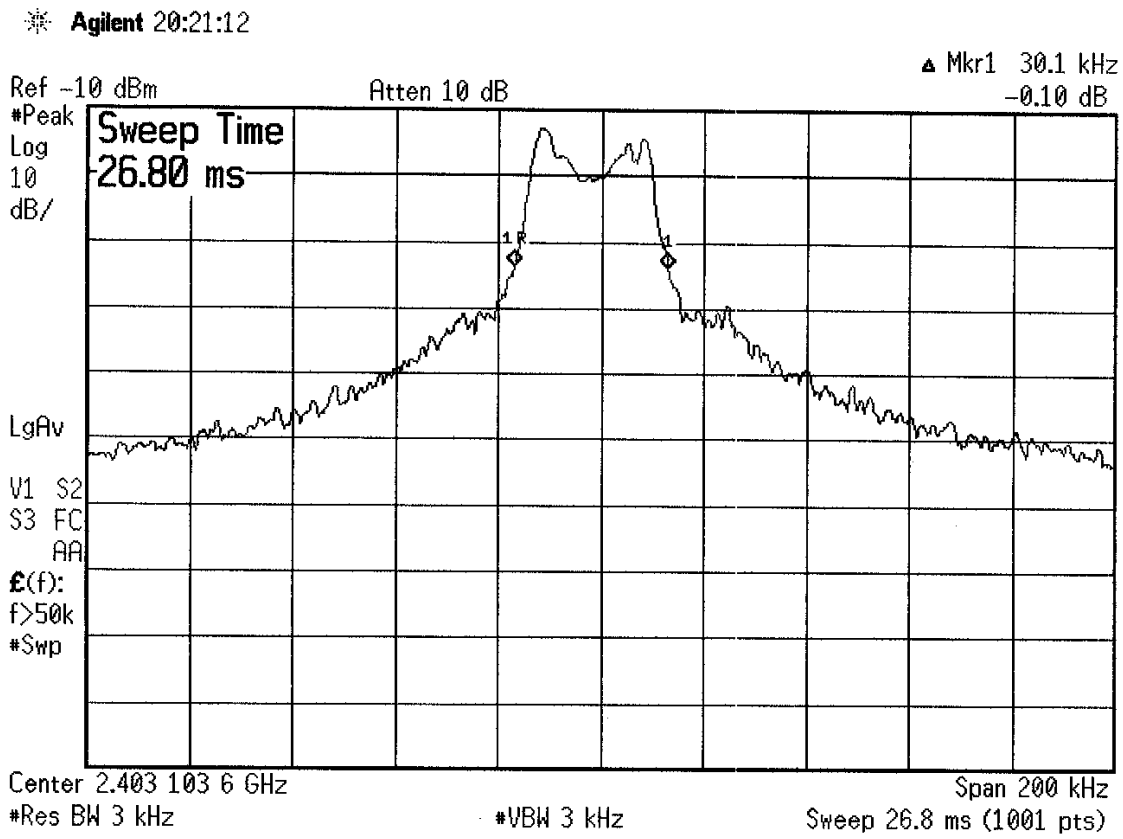
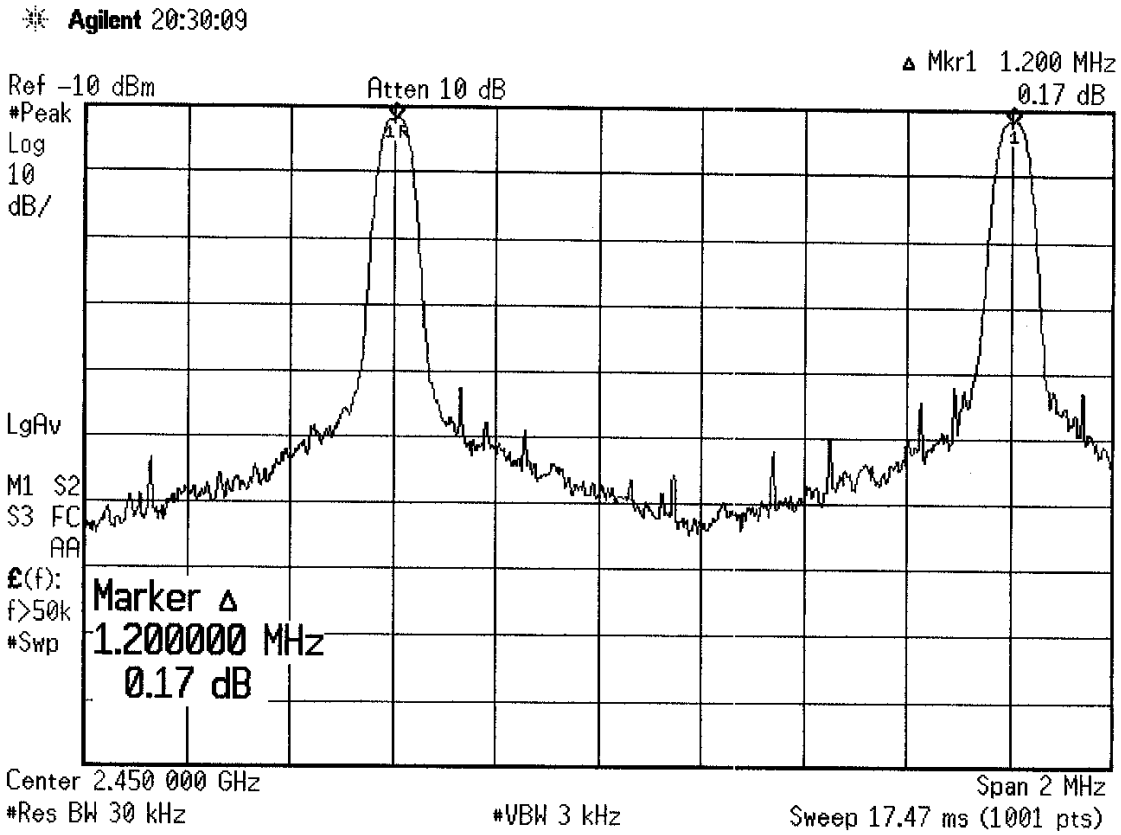
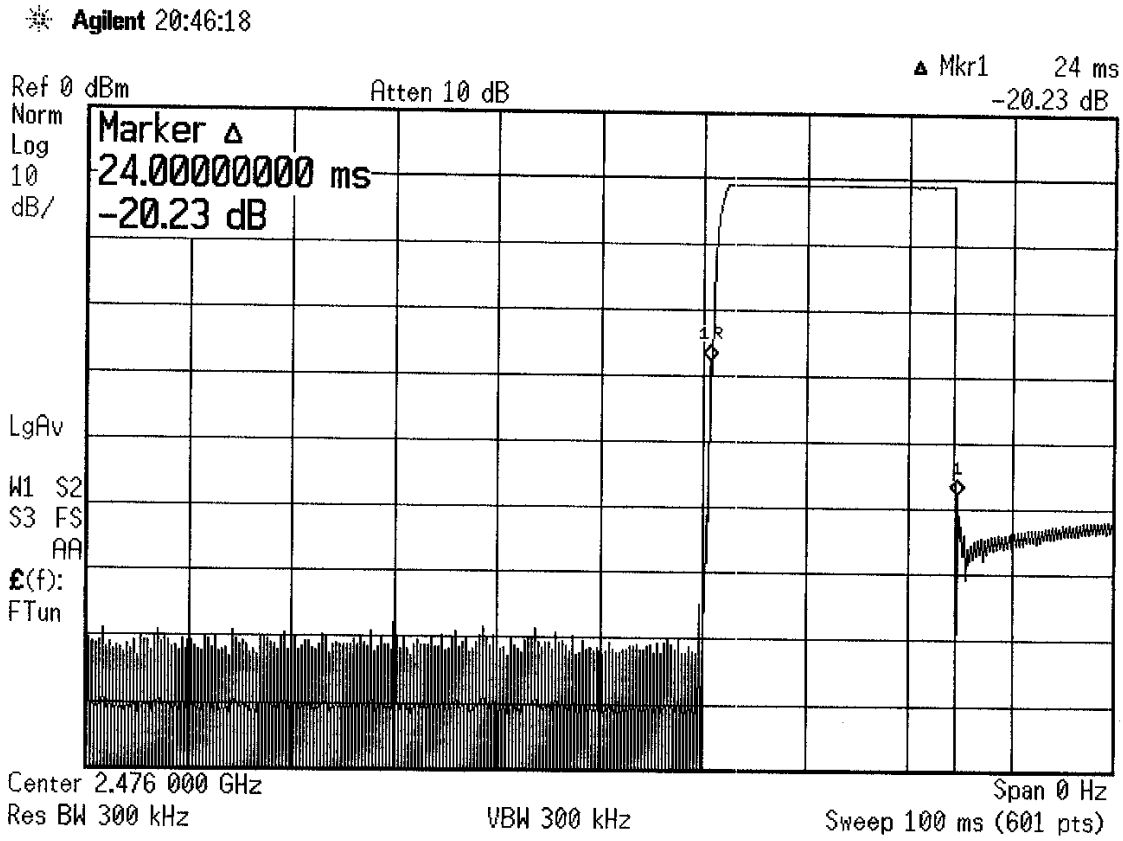
BANDWIDTH: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(1)



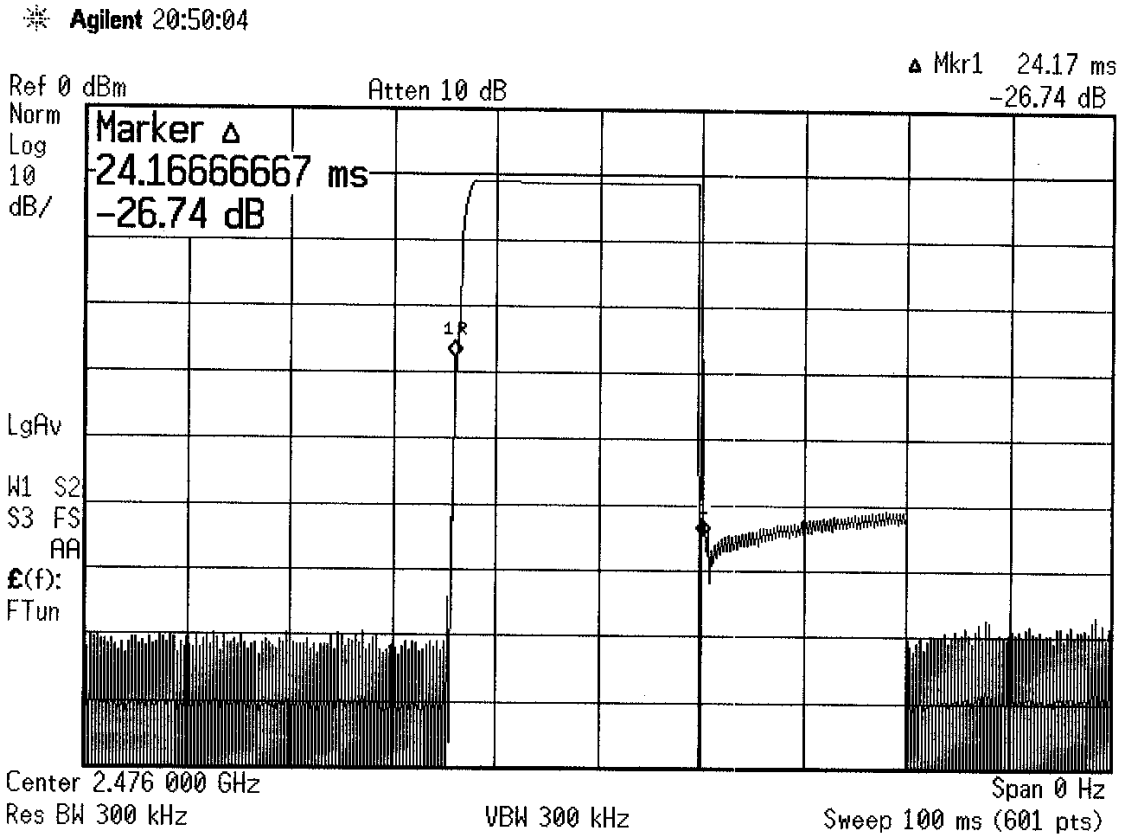
CHANNEL SEPARATION: FCC Part 15.247(a)(1) and RSS-210 A8.1(2)



TIME OF OCCUPANCY: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)



TIME OF OCCUPANCY: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)



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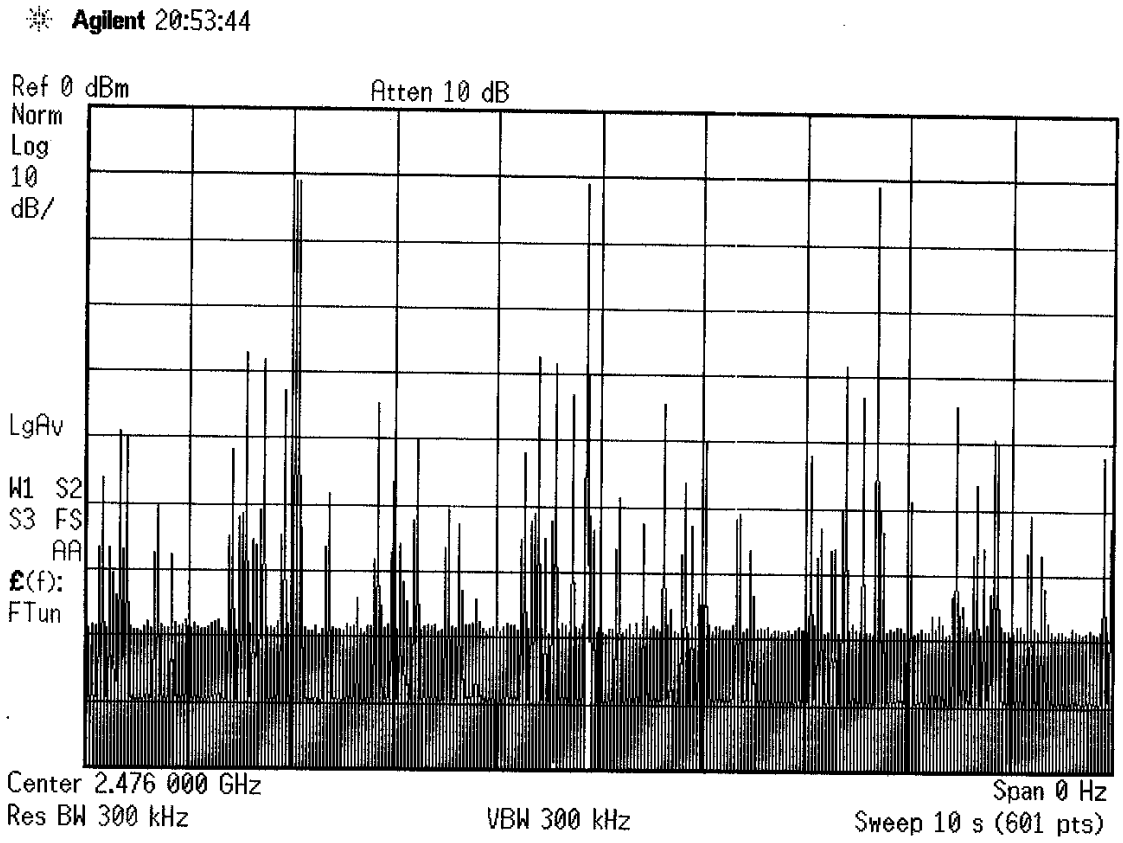
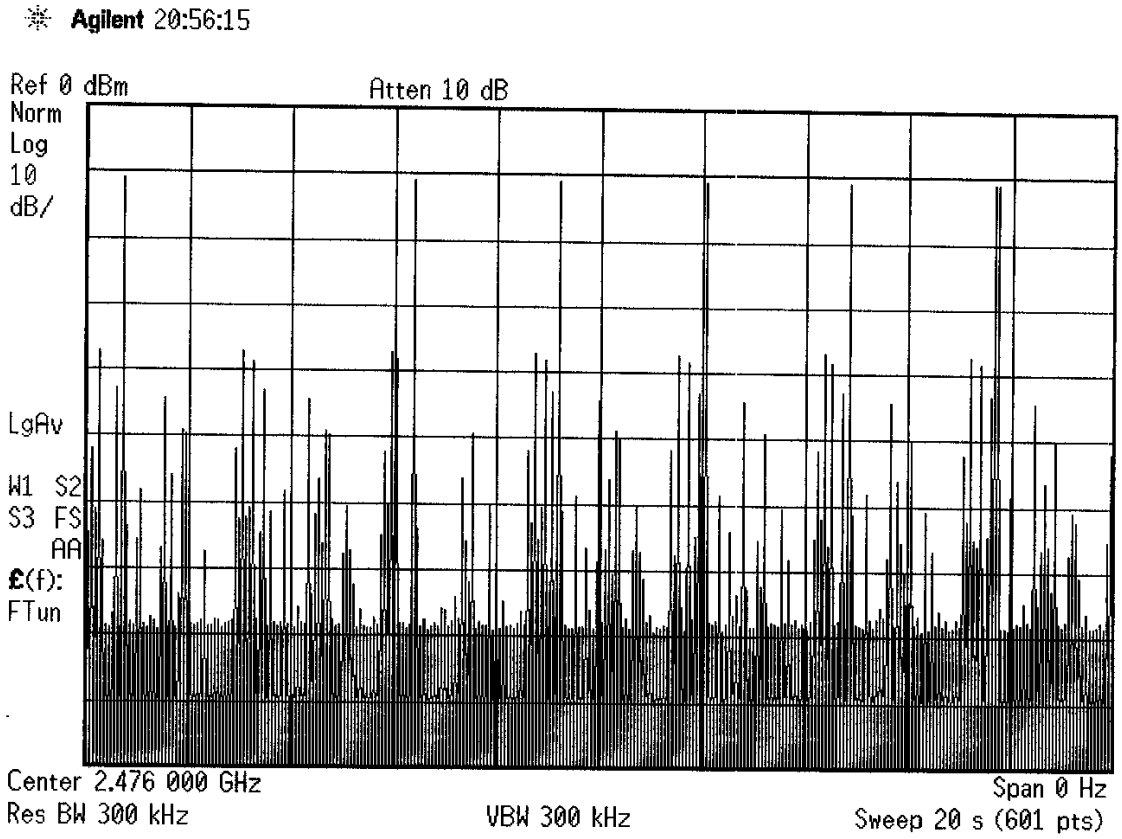
TIME OF OCCUPANCY: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)



TIME OF OCCUPANCY: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)



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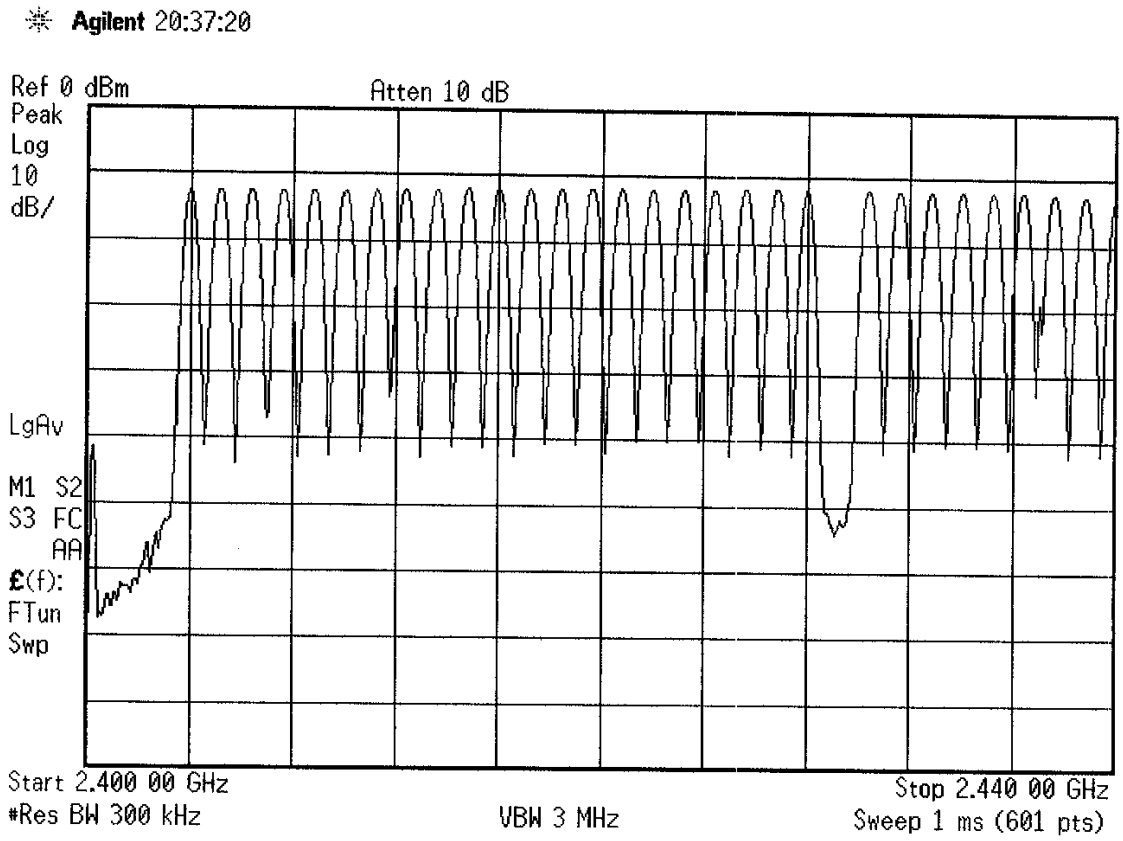
NUMBER OF HOPPING CHANNELS: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)



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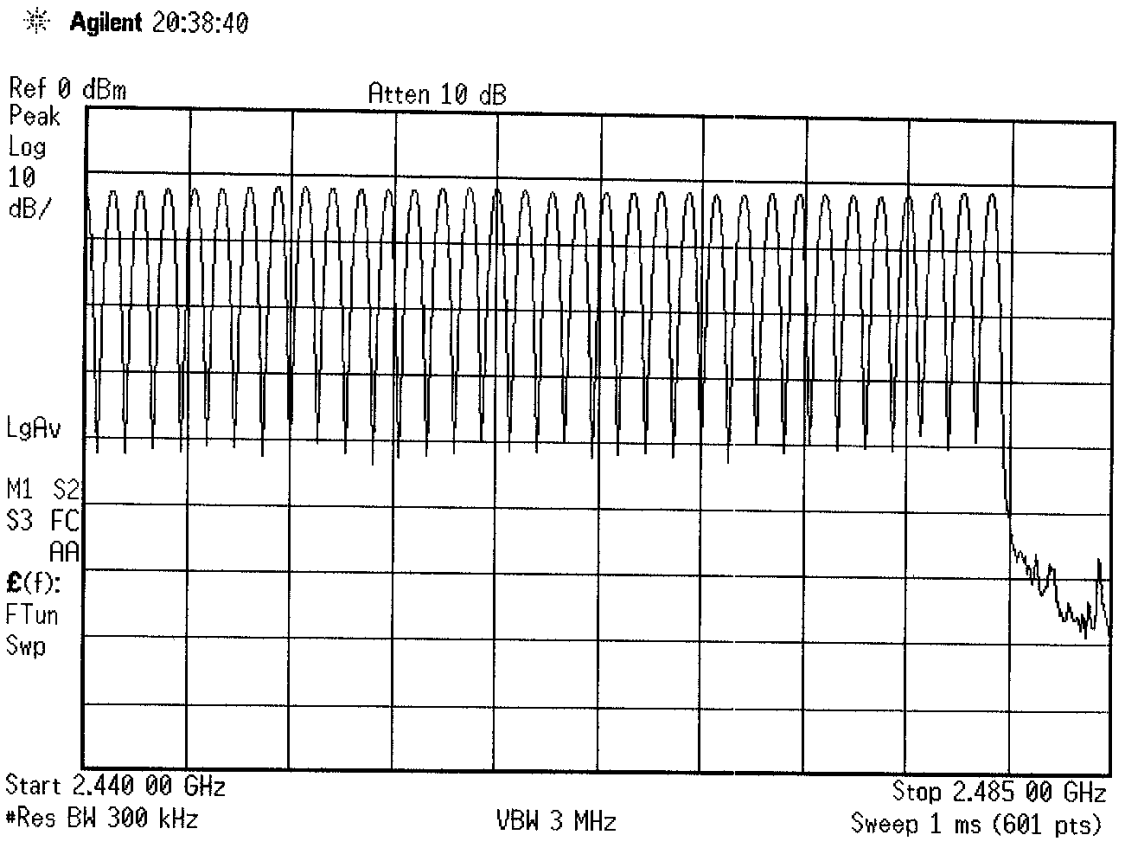
NUMBER OF HOPPING CHANNELS: FCC Part 15.247(a)(1)(i) and RSS-210 A8.1(4)



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RADIATED SPURIOUS EMISSIONS: FCC Part 15.209(a), 15.247(c), and RSS-210 A8.5

REPORT No: SC600649 TESTER: WILLIAM DEY SPEC: FCC Part 15 para 15.209(a), 15.247(c)

CUSTOMER: OMNEX ControlT2300 TEST DIST: 3 Meters

E U T: T2300 TEST SITE: Roof

EUT MODE: Single Frequencies, Low, Medium, High BICONICAL: 491

DATE: March 30, 2006 LOG: 243

NOTES: No other emissions detected +5dB OTHER: 453

above 1GHz: RBW & VBW 1 MHz for Pk; RBW 1MHz and VBW 10Hz for AVG

below 1GHz: RBW & VBW 100 kHz for Pk; RBW 100kHz and VBW 10Hz for AVG

CF = Antenna Factor + Cable Loss - Preamplifier Gain + Preselector Loss

v.beta1a

FREQ (MHz)	VERTICAL (dBuv) pk	VERTICAL (dBuv) av	HORIZONTAL (dBuv) pk	HORIZONTAL (dBuv) av	CF (dB/m)	MAX LEVEL (dBuV/m) pk	MAX LEVEL (dBuV/m) av	SPEC LIMIT (dBuV/m) pk	SPEC LIMIT (dBuV/m) av	MARGIN (dB) pk	MARGIN (dB) av	EUT Rotation	Antenna Height	Notes
2403.1	104.2	104	106.6	106.4	-5.52946	**101.1**	**101**	74	54	27.07	46.9	91	1.9	
4806.2	50.6	37.4	59.9	48.4	-0.169	**59.73**	**48.2**	74	54	-14.3	-5.77	96	1.8	265,1.9
7209.3	46.7	41.8	46.2	34.2	8.47674	**55.18**	**50.3**	74	54	-18.8	-3.72	183	1.7	321,1.3
9612.4	39.6	29.7	38.9	29.5	9.99224	**49.59**	**39.7**	74	54	-24.4	-14.3			
2441.7	104.1	103.9	106.2	106.1	-5.39822	**100.8**	**101**	74	54	26.8	46.7	102	1.6	
4883.4	55.3	39.5	63.1	47.8	0.217	**63.32**	**48**	74	54	-10.7	-5.98	180	3.2	98,1.2
7325.1	53.2	38.3	46.5	32.1	8.68518	**61.89**	**47**	74	54	-12.1	-7.01	178	2.1	174,1.3
2478.6	104.8	104.7	103.6	103.5	-5.27276	**99.53**	**99.4**	74	54	25.53	45.4	180	1.6	
4957.2	48.6	43.7	56	45.6	0.586	**56.59**	**46.2**	74	54	-17.4	-7.81	157	1.4	
7435.8	48.4	44.9	45.1	38.5	8.88444	**57.28**	**53.8**	74	54	-16.7	-0.22	149	1	

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4.0 ATTESTATION STATEMENT

GENERAL REMARKS:

SUMMARY:

All tests were performed per: CFR 47, Part(s) 15.209(a), 15.247(a), 15.247(b), and 15.247(c)
Canadian Specification(s) RSS-210 A8.1(1), RSS-210 A8.1(2), RSS-210 A8.1(4), RSS-210 A8.4(2) and RSS-210 A8.5

■ - Performed

The Equipment Under Test

■ - Fulfills the requirements of: CFR 47, Part(s) CFR 47, Part(s) 15.209(a), 15.247(a), 15.247(b), and 15.247(c)
Canadian Specification(s) RSS-210 A8.1(1), RSS-210 A8.1(2), RSS-210 A8.1(4), RSS-210 A8.4(2) and RSS-210 A8.5

Testing Start Date: 14 February 2006

Testing End Date: 15 February 2006

- TÜV AMERICA, INC. -

Reviewing Engineer:

David Gray
(EMC Engineer In Charge)

Test Engineer:

William Dey
(EMC Technicain)

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