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Electromagnetic Emissions Test Report and Application for Grant of Equipment Authorization pursuant to FCC Part 15, Subpart C (15.247) DTS Specifications and Industry Canada RSS 210 Issue 5 for an Intentional Radiator on the 2Wire, Inc. Model: 2700HGV

FCC ID:	PGR2W2700ATH
UPN:	3439B-2700ATH
GRANTEE:	2Wire, Inc. 1704 Automation Parkway San Jose, CA 95131
TEST SITE:	Elliott Laboratories, Inc. 684 W. Maude Avenue Sunnyvale, CA 94086
REPORT DATE:	June 28, 2005
FINAL TEST DATE:	June 10, 2005

AUTHORIZED SIGNATORY: _____

Juan Martinez
Senior EMC Engineer

ACCREDITED
2016-01

DECLARATIONS OF COMPLIANCE

Equipment Name and Model:
2700HGV

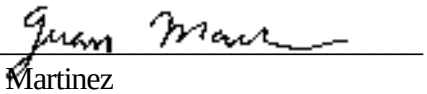
Manufacturer:
2Wire, Inc.
1704 Automation Parkway
San Jose, CA 95131

Tested to applicable standards:
RSS-210, Issue 5, November 2001 (Low Power License-Exempt Radiocommunication Devices)
FCC Part 15.247 (DTS)

Measurement Facility Description Filed With Department of Industry:

Departmental Acknowledgement Number: IC2845 **SV2** Dated August 12, 2001
Departmental Acknowledgement Number: IC2845 **SV3** Dated July 30, 2001

I declare that the testing was performed or supervised by me; that the test measurements were made in accordance with the above mentioned departmental standards (through the use of ANSI C63.4:2003 as detailed in section 5.3 of RSS-210, Issue 5); and that the equipment performed in accordance with the data submitted in this report.

Signature	
Name	Juan Martinez
Title	Senior EMC Engineer
Company	Elliott Laboratories Inc.
Address	684 W. Maude Ave Sunnyvale, CA 94086 USA
Date:	June 28, 2005

Maintenance of compliance with the above standards is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

TABLE OF CONTENTS

SCOPE

An electromagnetic emissions test has been performed on the 2Wire, Inc. model 2700HGV pursuant to Subpart C of Part 15 of FCC Rules for intentional radiators and RSS-210 Issue 5 for licence-exempt low power devices. Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in ANSI C63.4:2003 as outlined in Elliott Laboratories test procedures.

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant FCC performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

The test results recorded herein are based on a single type test of the 2Wire, Inc. model 2700HGV and therefore apply only to the tested sample. The sample was selected and prepared by Jeremy Muir of 2Wire, Inc.

OBJECTIVE

The primary objective of the manufacturer is compliance with Subpart C of Part 15 of FCC Rules and RSS-210 Issue 5 for license-exempt low power devices for the radiated and conducted emissions of intentional radiators. Certification of these devices is required as a prerequisite to marketing as defined in Part 2 the FCC Rules.

Certification is a procedure where the manufacturer or a contracted laboratory makes measurements and submits the test data and technical information to the FCC. The FCC issues a grant of equipment authorization upon successful completion of their review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units which are subsequently manufactured.

SUMMARY OF RESULTS

FCC Part 15 Section	RSS 210 Section	Description	Measured Value	Comments	Result
15.247(a)	6.2.2(o)(b)	Digital Modulation	Systems uses OFDM / DSSS techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	6.2.2(o)(b)	6dB Bandwidth	16.7MHz (802.11g) 13.3MHz (802.11b)	Minimum allowed is 500kHz	Complies
	RSP 100	99% Bandwidth	16.7 MHz	For information only	Complies
15.247 (b) (3)	6.2.2(o)(b)	Output Power, 2400 - 2483.5 MHz	26.2 dBm (0.412 Watts) EIRP = 0.519 W	Multi-point applications: Maximum permitted is 1Watt, with EIRP limited to 4 Watts.	Complies
15.247(d)	6.2.2(o)(b)	Power Spectral Density	0.67 dBm / MHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	6.2.2(o)(e1)	Antenna Port Spurious Emissions – 30MHz – 26 GHz	All spurious emissions < -20dBc	All spurious emissions < -20dBc.	Complies
15.247(c) / 15.209		Radiated Spurious Emissions – 30MHz – 26 GHz	52 dBuV/m @ 7309.948 MHz (-2 dB)	Emissions in restricted bands must meet the radiated emissions limits detailed in 15.207. All others must be < -20dBc	Complies
15.207		AC Conducted Emissions	42.3 dBuV @ 0.917 MHz (-3.7dB)		Complies
	6.6	AC Conducted Emissions	41.8 dBuV @ 0.524MHz (-6.2 dB)		Complies
15.247 (b) (5)		RF Exposure Requirements	MPE calculation		Complies
15.203		RF Connector	Antenna is permanently attached	Antenna is part of the Printed circuit board	Complies

EIRP calculated using antenna gain of dBi (1) for the highest EIRP point-to-multipoint system.

MEASUREMENT UNCERTAINTIES

ISO Guide 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Frequency Range (MHz)	Calculated Uncertainty (dB)
Conducted Emissions	0.15 to 30	± 2.4
Radiated Emissions	30 to 1000	± 3.6

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The 2Wire, Inc. model 2700HGV is a DSL router which is designed to provide web connectivity. Normally, the EUT would be placed on a tabletop during operation. The EUT was, therefore, treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 120 V, 60 Hz, 1 Amps.

The sample was received on June 10, 2005 and tested on June 10, 2005. The EUT consisted of the following component(s):

Manufacturer/Model/Description	Serial Number	Proposed FCC ID #
2Wire 2700HGV DSL Wireless Router	-	-
2Wire 2900-800020-000 AC Adapter	-	-

ENCLOSURE

The EUT enclosure is primarily constructed of plastic. It measures approximately 22.5 cm wide by 17.5 cm deep by 3.5 cm high.

MODIFICATIONS

The EUT did not require modifications during testing in order to comply with the emission specifications.

SUPPORT EQUIPMENT

The following equipment was used as local support equipment for emissions testing:

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	Inspiron 3700 PPX	Laptop	99080	-
US Robotics	Pilot100	PDA	604819965702	MQ9001
HP	ThinkJet 2225C+	Parallel Printer	3028576892	DS16XU225
Coby	CT-P220	Phone	324001152	-

The following equipment was used as remote support equipment for emissions testing:

Manufacturer	Model	Description	Serial Number
Dell	Inspiron 3700 PPX	Laptop	139-311-94
Dell	PP01L	Laptop	6P326A02
ADAPCOM	Micro-890	ADSL Mini-DSLAM	-

EUT INTERFACE PORTS

The I/O cabling configuration during emissions testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
2700HGV-RJ45 #1	Remote Dell PP01L	CAT5	Unshielded	3m
2700HGV-RJ45 #2	Not connected	-	-	-
2700HGV-RJ45 #3	Not connected	-	-	-
2700HGV-RJ45 #4	Not connected	-	-	-
2700HGV-RJ11 DSL	ADSL Mini-DSLAM	RJ11	Unshielded	4m
2700HGV-Client USB	Local Dell Laptop	USB	Shielded	2m
2700HGV-Host USB	Not connected	-	-	-
2700HGV-RJ11 Phone	Phone	RJ11	Unshielded	4m
Local Dell Laptop	Printer	Serial	Shielded	2m
Local Dell Laptop	PDA	Serial	Shielded	2m

Note: The Host USB ports were not connected as the manufacturer stated that these are for configuration purpose and therefore would not normally be connected.

EUT OPERATION DURING TESTING

During emissions testing, the EUT was connected to two remote laptop PCs using the EUT's phone line and Ethernet ports. The two Laptops are pinging the EUT, a switch is pinging the EUT Ethernet via loopback. A third laptop is pinging the EUT via wireless.

ANTENNA REQUIREMENTS

Antenna is permanently attached

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on June 10, 2005at the Elliott Laboratories Open Area Test Site #2 & 3 located at 684 West Maude Avenue, Sunnyvale, California. The test site contains separate areas for radiated and conducted emissions testing. Pursuant to section 2.948 of the Rules, construction, calibration, and equipment data has been filed with the Federal Communications Commission. In accordance with Industry Canada rules detailed in RSS 210 Issue 5 and RSS-212, construction, calibration, and equipment data for the test sites have been filed with the Federal Communications Commission.

The FCC recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent FCC requirements.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment. The test site is maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde and Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

POWER METER

A power meter and peak power sensor are used for all direct output power measurements from transmitters as they provide a broadband indication of the power output.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A biconical antenna is used to cover the range from 30 MHz to 300 MHz and a log periodic antenna is utilized from 300 MHz to 1000 MHz. Narrowband tuned dipole antennas are used over the entire 30 to 1000 MHz range for precision measurements of field strength. Above 1000 MHz, a horn antenna is used. The antenna calibration factors are included in site factors programmed into the test receivers.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The FCC requires that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003 , and the worst case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

RADIATED EMISSIONS

Radiated emissions measurements are performed in two phases as well. A preliminary scan of emissions is conducted in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed from 30 MHz up to the frequency required by the regulation specified on page 1. One or more of these is with the antenna polarized vertically while the one or more of these is with the antenna polarized horizontally. During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied and cable positions are varied to determine the highest emission relative to the limit.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth which results in the highest emission is then maintained while varying the antenna height from one to four meters. The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain. Emissions which have values close to the specification limit may also be measured with a tuned dipole antenna to determine compliance.

CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements are performed with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.

Measurement bandwidths (video and resolution) are set in accordance with FCC procedures for the type of radio being tested.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions from the AC power port are given in units of microvolts, the limits for radiated electric field emissions are given in units of microvolts per meter at a specified test distance and the output power limits are given in temrs of Watts, milliwatts or dBm. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp) the following formula is used to determine the field strength limit in terms of microvolts per meter at a distance of 3m from the equipment under test:

$$E = \frac{1000000 \text{ v } 30 \text{ P}}{3} \quad \text{microvolts per meter}$$

where P is the eirp (Watts)

For reference, converting the voltage and electric field strength specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. Conversion of power specification limits from linear units (in milliwatts) to decibel form (in dBm) is accomplished by taking the base ten logarithm, then multiplying by 10.

FCC 15.407 (a)and RSS 210 (o) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
902 – 928	1 Watts (30 dBm)	8 dBm/3kHz
2400 – 2483.5	1 Watts (30 dBm)	8 dBm/3kHz
5725 – 5850	1 Watts (30 dBm)	8 dBm/3kHz

The maximum permitted output power is reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5850 MHz band are not subject to this restriction.

RSS 210 (o) AND FCC 15.247 SPURIOUS RADIATED EMISSIONS LIMITS

T limits for unwanted (spurious) emissions from the transmitter falling in the restricted bands detailed in Part 15.205 and for all spurious emissions from the receiver are:

Frequency Range (MHz)	Limit (uV/m @ 3m)	Limit (dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

All other unwanted (spurious) emissions shall be at least 20dB below the level of the highest in-band signal level.

FCC 15.205 AC POWER PORT CONDUCTED EMISSIONS LIMITS

The table below shows the limits for emissions on the AC power line as detailed in FCC Part 15.205.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

RSS-210 SECTION 6.6 AC POWER PORT CONDUCTED EMISSIONS LIMITS

The table below shows the limits for emissions on the AC power line as detailed in Industry Canada RSS-210 section 6.6.

Frequency Range (MHz)	Limit (uV)	Limit (dBuV)
0.450 to 30.000	250	48

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - B = C$$

and

$$C - S = M$$

where:

R_r = Receiver Reading in dBuV

B = Broadband Correction Factor*

C = Corrected Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

* Broadband Level - Per ANSI C63.4:2003 , 13 dB may be subtracted from the quasi-peak level if it is determined that the emission is broadband in nature. If the signal level in the average mode is six dB or more below the signal level in the peak mode, the emission is classified as broadband.

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements. A distance factor, when used for electric field measurements, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_s = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

EXHIBIT 1: Test Equipment Calibration Data

1 Page

Antenna Conducted Emissions, 1000 - 26,500 MHz, 15-Jun-05
Engineer: Juan Martinez

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	EMC Spectrum Analyzer 9KHz-26.5GHz, non programmable	8563E	284	22-Apr-06

Conducted Emissions - AC Power Ports, 15-Jun-05
Engineer: Juan Martinez

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	EMC Spectrum Analyzer 9KHz-26.5GHz, non programmable	8563E	284	22-Apr-06
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	372	01-Sep-05
Solar Electronics	LISN	8028-50-TS-24-BNC support	904	10-Aug-05
Rohde & Schwarz	Test Receiver, 0.009-30 MHz	ESH3	1316	31-Jan-06

Radiated Emissions, 30 - 1,000 MHz, 21-Jun-05
Engineer: Yu Chien Ho

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Biconical Antenna, 30-300 MHz	3110B	1320	25-Aug-05
EMCO	Log Periodic Antenna, 0.2-2 GHz	3148	1321	30-Mar-07
Rohde & Schwarz	Test Receiver, 0.009-2750 MHz	ESN	1332	23-May-06

EXHIBIT 2: Test Data Log Sheets

ELECTROMAGNETIC EMISSIONS

TEST LOG SHEETS

AND

MEASUREMENT DATA

T59972 32 Pages

Elliott

EMC Test Data

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Project Manager:	Mark Hill
Contact:	Jeremy Muir		
Emissions Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio
Immunity Spec:	-	Environment:	-

EMC Test Data

For The

2Wire, Inc.

Model

2700HGV

Date of Last Test: 6/21/2005

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Emissions Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio
Immunity Spec:	-	Environment:	-

EUT INFORMATION

General Description

The EUT is a DSL router which is designed to provide web connectivity. Normally, the EUT would be placed on a table top during operation. The EUT was, therefore, treated as table-top equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 120 V, 60 Hz, 1 Amps.

Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
2Wire	2700HGV	DSL wireless Router	-	-
2Wire	2900-800020-000	AC adapter	-	-

Other EUT Details

EUT Antenna

The EUT Antenna is permanently attached.

EUT Enclosure

The EUT enclosure is primarily constructed of plastic. It measures approximately 22.5 cm wide by 17.5 cm deep by 3.5 cm high.

Modification History

Mod. #	Test	Date	Modification
1	RE	6/21/2005	Placed filter cap close the the RJ11 Phone port.
2			
3			

Modifications applied are assumed to be used on subsequent tests unless otherwise stated as a further modification.

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Emissions Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio
Immunity Spec:	-	Environment:	-

Test Configuration #1

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	Inspiron 3700 PPX	Laptop	99080	-
US Robotics	Pilot100	PDA	604819965702	MQ9001
HP	ThinkJet 2225C+	Parallel Printer	3028576892	DS16XU225
Coby	CT-P220	Phone	324001152	-

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	Inspiron 3700 PPX	Laptop	139-311-94	-
Dell	PP01L	Laptop	6P326A02	-
ADAPCOM	Micro-890	ADSL Mini-DSLAM	-	-

Interface Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
2700HGV-RJ45 #1	Remote Dell PP01L	CAT5	Unshielded	3m
2700HGV-RJ45 #2	Not connected	-	-	-
2700HGV-RJ45 #3	Not connected	-	-	-
2700HGV-RJ45 #4	Not connected	-	-	-
2700HGV-RJ11 DSL	ADSL Mini-DSLAM	RJ11	Unshielded	4m
2700HGV-Client USB	Local Dell Laptop	USB	Shielded	2m
2700HGV-Host USB	Not connected	-	-	-
2700HGV-RJ11 Phone	Phone	RJ11	Unshielded	4m
Local Dell Laptop	Printer	Serial	Shielded	2m
Local Dell Laptop	PDA	Serial	Shielded	2m

Note: The Host USB ports were not connected as the manufacturer stated that these are for configuration purpose and therefore would not normally be connected.

EUT Operation During Emissions Tests

During emissions testing, the EUT was connected to two remote laptop PCs using the EUT's phone line and Ethernet ports. The two Laptops are pinging the EUT, a switch is pinging the EUT Ethernet via loopback. A third laptop is pinging the EUT via wireless.

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio

Rx Emissions (RSS-210)

Test Specifics

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/15/2005
Test Engineer: Jmartinez
Test Location: SVOATS #3
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated emissions testing.

The test distance and extrapolation factor (if used) are detailed under each run description.

Note, for testing above 1 GHz, the FCC specifies the limit as an average measurement. In addition, the FCC states that the peak reading of any emission above 1 GHz, can not exceed the average limit by more than 20 dB.

Ambient Conditions:

Temperature: 18 °C
Rel. Humidity: 45 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1-2	RE, 1000 - 6500 MHz, Maximized Emissions	RSS-210 Rx mode	Pass	44.3dBuV/m (164.8uV/m) @ 4824MHz (-15.7dB)

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio

Run #1 Maximized readings, 1000 - 8000 MHz
802.11G

Frequency	Level	Pol	RSS-210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
CH: 2412								
1608.000	43.0	v	60.0	-17.0	Avg	0	1.0	
3219.000	41.0	v	60.0	-19.0	Avg	360	1.0	
4824.000	44.3	v	60.0	-15.7	Avg	0	1.0	
CH: 2437								
1624.000	31.8	v	60.0	-28.2	Avg	0	1.0	
3248.000	39.4	v	60.0	-20.6	Avg	360	1.0	
4872.000	43.2	v	60.0	-16.8	Avg	0	1.0	
CH: 2462								
1641.000	31.4	v	60.0	-28.6	Avg	360	1.0	
3265.000	39.0	v	60.0	-21.0	Avg	0	1.0	
4889.000	43.7	v	60.0	-16.3	Avg	360	1.0	

Run #2: Maximized readings, 1000 - 8000 MHz
802.11B

Frequency	Level	Pol	RSS-210		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
CH: 2412								
1608.000	30.7	v	60.0	-29.3	Avg	0	1.0	
3219.000	39.5	v	60.0	-20.5	Avg	360	1.0	
4824.000	43.7	v	60.0	-16.3	Avg	0	1.0	
CH: 2437								
1624.000	31.6	v	60.0	-28.5	Avg	0	1.0	
3248.000	39.3	v	60.0	-20.7	Avg	360	1.0	
4872.000	42.5	v	60.0	-17.5	Avg	0	1.0	
CH: 2462								
1641.000	31.0	v	60.0	-29.0	Avg	0	1.0	
3265.000	40.0	v	60.0	-20.0	Avg	360	1.0	
4889.000	43.2	v	60.0	-16.8	Avg	0	1.0	

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio

Conducted Emissions - Power Ports

Test Specifics

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT with respect to the specification listed above.

Date of Test: 6/15/2005
Test Engineer: Juan Martinez
Test Location: SVOATS #3
Config. Used: 1
Config Change: None
EUT Voltage: Refer to individual run

General Test Configuration

The EUT was located on a wooden table, 40 cm from a vertical coupling plane and 80cm from the LISN. A second LISN was used for all local support equipment. Remote support equipment was located approximately 3 meters from the test area.

Ambient Conditions:

Temperature: 23 °C
Rel. Humidity: 41 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power,120V/60Hz	EN55022 B	Pass	42.3 dBuV @ 0.917 MHz (-3.7dB)
2	CE, AC Power,120V/60Hz	RSS-210	Pass	41.8dBµV (123.0µV) @ 0.524MHz (-6.2dB)

Modifications Made During Testing:

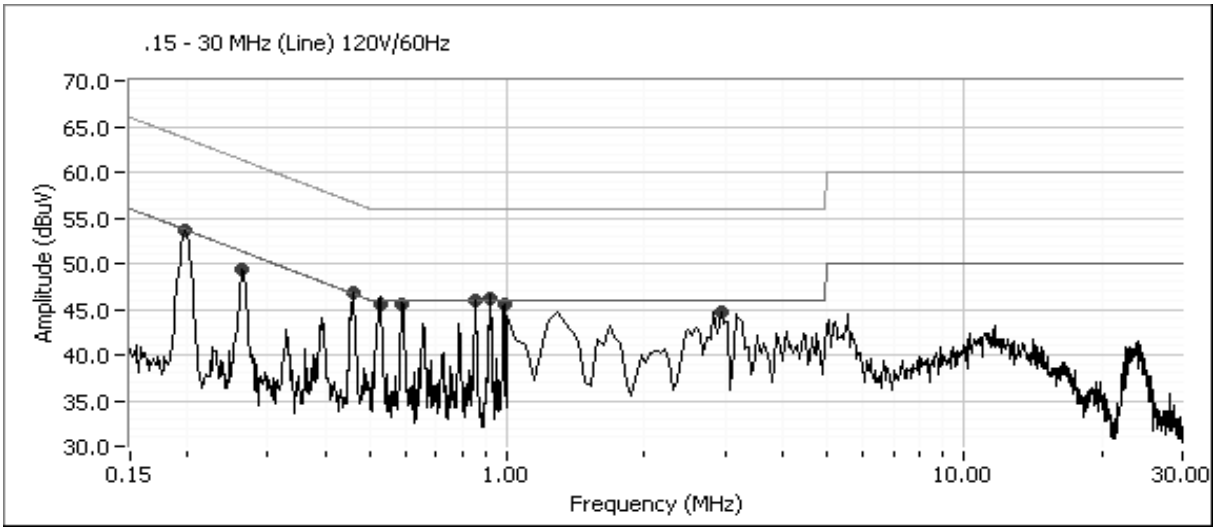
No modifications were made to the EUT during testing

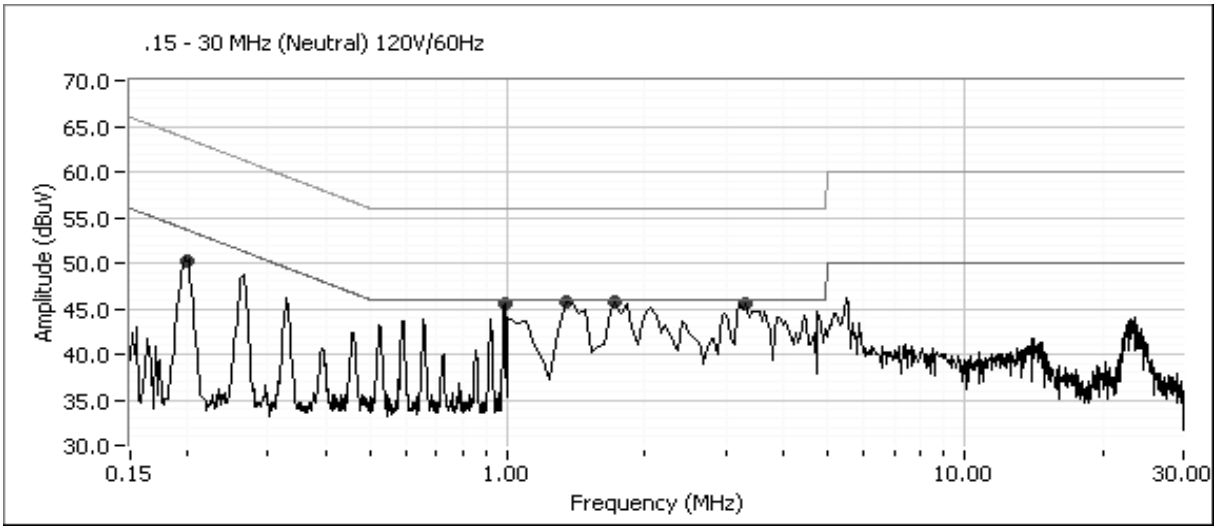
Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio

Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz
Goodpower 3 Amp PSU, filtered power supply





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EMC Test Data

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio

Frequency	Level	AC	EN55022 B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.524	42.3	Line 1	46.0	-3.7	AVG	
0.917	42.3	Line 1	46.0	-3.7	AVG	
0.458	42.6	Line 1	46.7	-4.1	AVG	
0.852	41.5	Line 1	46.0	-4.5	AVG	
0.590	41.4	Line 1	46.0	-4.6	AVG	
1.705	41.1	Neutral	46.0	-4.9	AVG	
0.984	40.4	Line 1	46.0	-5.6	AVG	
3.212	40.3	Neutral	46.0	-5.7	AVG	
0.983	40.3	Neutral	46.0	-5.7	AVG	
2.884	40.1	Line 1	46.0	-5.9	AVG	
1.311	40.1	Neutral	46.0	-5.9	AVG	
0.262	42.3	Line 1	51.4	-9.1	AVG	
0.197	43.6	Line 1	53.7	-10.1	Average	
0.197	49.6	Line 1	63.7	-14.1	QP	
0.524	41.8	Line 1	56.0	-14.2	QP	
0.917	41.8	Line 1	56.0	-14.2	QP	
1.705	41.4	Neutral	56.0	-14.6	QP	
0.458	42.1	Line 1	56.7	-14.6	QP	
0.590	41.3	Line 1	56.0	-14.7	QP	
2.884	41.2	Line 1	56.0	-14.8	QP	
0.197	38.7	Neutral	53.8	-15.1	AVG	
0.852	40.8	Line 1	56.0	-15.2	QP	
1.311	40.7	Neutral	56.0	-15.3	QP	
3.212	40.7	Neutral	56.0	-15.3	QP	
0.984	40.3	Line 1	56.0	-15.7	QP	
0.262	45.6	Line 1	61.4	-15.8	QP	
0.983	40.1	Neutral	56.0	-15.9	QP	
0.197	46.1	Neutral	63.8	-17.7	QP	

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	B / Radio

Run #2: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz
Goodpower 3 Amp PSU, filtered power supply

Frequency	Level	AC	RSS-210		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.524	41.8	Line 1	48.0	-6.2	QP	
0.917	41.8	Line 1	49.0	-7.2	QP	
1.705	41.4	Neutral	50.0	-8.6	QP	
0.458	42.1	Line 1	51.0	-8.9	QP	
0.590	41.3	Line 1	52.0	-10.7	QP	
2.884	41.2	Line 1	53.0	-11.8	QP	

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and Spurious Emissions

Test Specifics

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT with respect to the specification listed above.

Date of Test: 6/10/2005 & 6/15/2005
Test Engineer: Chris Byleckie & Jmartinez
Test Location: SVOATS #2 & 3
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 21 °C
Rel. Humidity: 65 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 1000 - 18000 MHz - Spurious Emissions	FCC Part 15.209 / 15.247(c)	Pass	52 dBuV/m @ 7309.948 MHz (-2.0 dB)
2	6dB Bandwidth	15.247(a)	Pass	13.3 MHz
3	Output Power	15.247(b)	Pass	26.2 dBm
4	Power Spectral Density (PSD)	15.247(d)	Pass	0.67 dBm

Modifications Made During Testing:

Modifications are detailed under each run description.

Deviations From The Standard

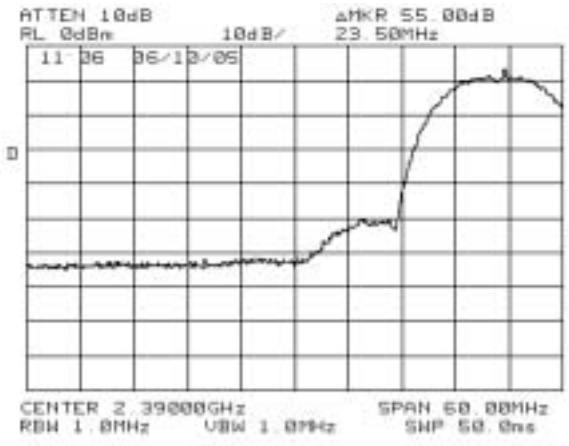
No deviations were made from the requirements of the standard.

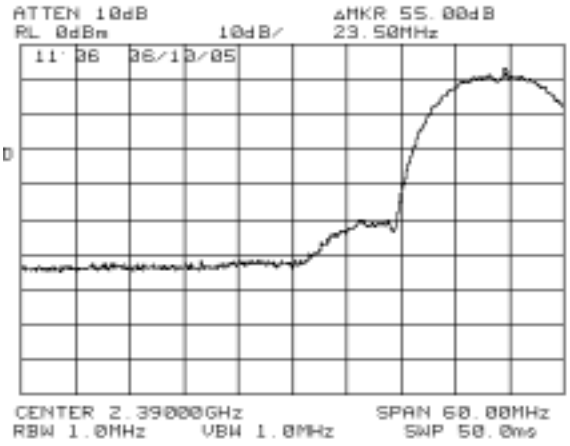
EMC Test Data

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #1a: Radiated Spurious Emissions, 1000 - 18000 MHz. Low Channel @ 2412MHz
802.11B, power set to 20.2dBm (Used Average Power Meter) pcdac setting - 20

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:	110.17	112.85	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:	107.07	109.89	Average Measurement (RB=1MHz, VB=10Hz)
Delta Marker - Peak	55.16 dB		
Delta Marker - Average	61.83 dB		
Calculated Band-Edge Measurement:	57.69 dBuV/m		Peak
Calculated Band-Edge Measurement:	48.06 dBuV/m		Average





Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4824.040	48.0	H	54.0	-6.1	AVG	278	2.0	
4824.040	51.9	H	74.0	-22.1	PK	278	2.0	
7235.185	54.0	H	92.9	-38.9	PK	328	1.4	Non restriocted
4823.940	42.0	V	54.0	-12.1	AVG	140	1.0	
4823.940	48.3	V	74.0	-25.7	PK	140	1.0	
7235.035	51.3	H	92.9	-41.6	PK	294	1.0	Non restriocted

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20 dB below the level of the fundamental.
Note 2:	

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EMC Test Data

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #1b: Radiated Spurious Emissions, 1000 - 25000 MHz. Center Channel @ 2437 MHz
802.11B, power set to 26dBm (Used Average Power Meter) ppcdac setting - 35

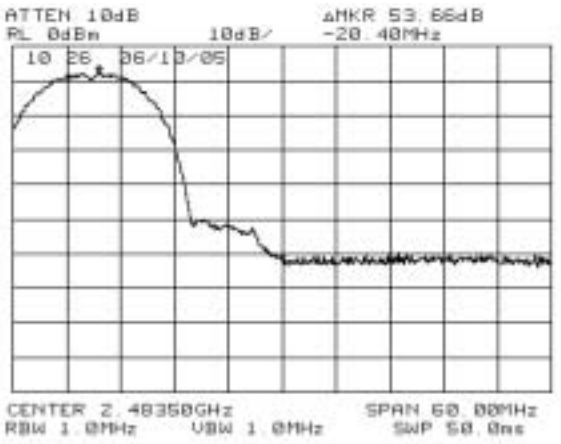
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4873.965	47.5	V	54.0	-6.5	AVG	336	1.0	
4873.965	51.4	V	74.0	-22.6	PK	336	1.0	
7309.910	53.4	V	54.0	-0.6	AVG	281	1.1	
7309.910	57.6	V	74.0	-16.4	PK	281	1.1	
4873.955	50.1	H	54.0	-3.9	AVG	99	1.4	
4873.955	53.8	H	74.0	-20.2	PK	99	1.4	
7310.295	57.0	H	54.0	3.0	AVG	14	1.4	
7310.295	60.9	H	74.0	-13.1	PK	14	1.4	
Pout = 26.15 dBm Pwr setting - 31 Average Sensor)								
7309.740	52.0	H	54.0	-2.0	AVG	14	1.4	
7309.740	56.4	H	74.0	-17.6	PK	14	1.4	
Pout = 26.15 dBm Pwr setting - 31 Average Sensor), taken at site# 3 with SA40								
7308.270	48.4	H	54.0	-5.7	AVG	328	1.5	
7308.270	54.1	H	74.0	-19.9	PK	328	1.5	

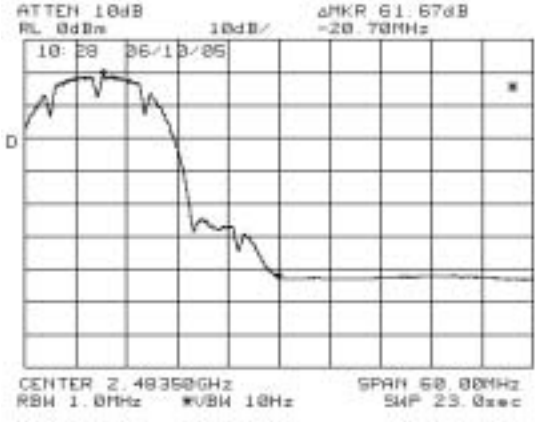
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20 dB below the level of the fundamental.
Note 2:	

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #1c: Radiated Spurious Emissions, 1000 - 18000 MHz. High Channel @ 2462 MHz
802.11B, power set to 20dBm (Used Average Power Meter) pcdac setting - 15

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:	109.2	113.28	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:	106.35	110.35	Average Measurement (RB=1MHz, VB=10Hz)
Delta Marker - Peak	53.66 dB		
Delta Marker - Average	61.67 dB		
Calculated Band-Edge Measurement:	59.62 dBuV/m		Peak
Calculated Band-Edge Measurement:	48.68 dBuV/m		Average





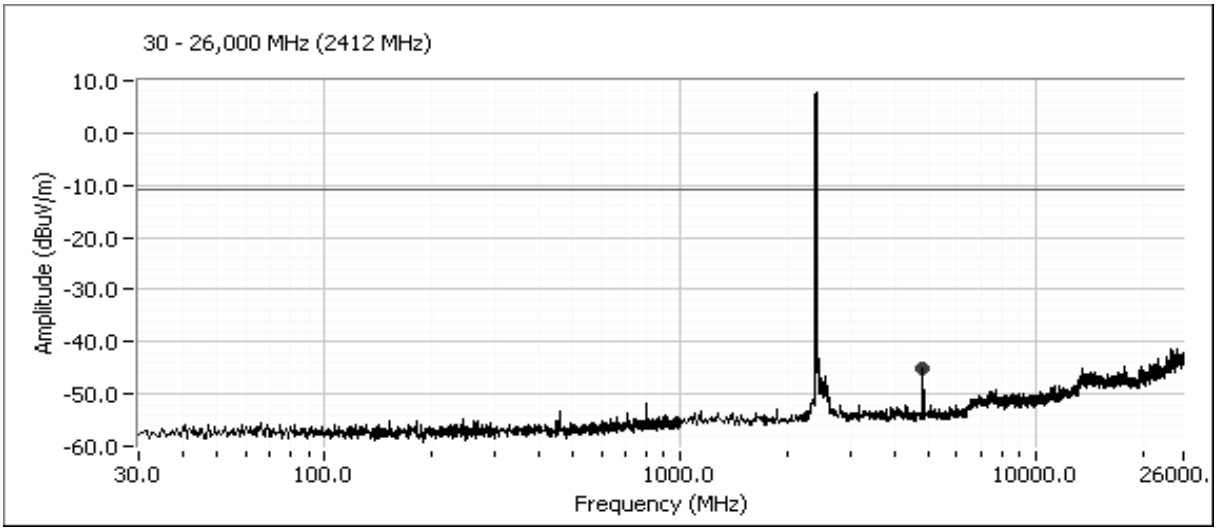
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4923.960	40.2	H	54.0	-13.8	AVG	305	1.4	
4923.960	47.1	H	74.0	-26.9	PK	305	1.4	
7385.255	37.6	H	54.0	-16.4	AVG	287	1.4	
7385.255	47.9	H	74.0	-26.1	PK	287	1.4	
4923.870	37.6	V	54.0	-16.4	AVG	12	1.0	
4923.870	46.0	V	74.0	-28.0	PK	12	1.0	
7385.110	35.5	V	54.0	-18.5	AVG	120	1.0	
7385.110	46.3	V	74.0	-27.7	PK	120	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20 dB below the level of the fundamental.
Note 2:	

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #1d: Antenna Conducted Spurious Emissions, 30 - 26,000 MHz.

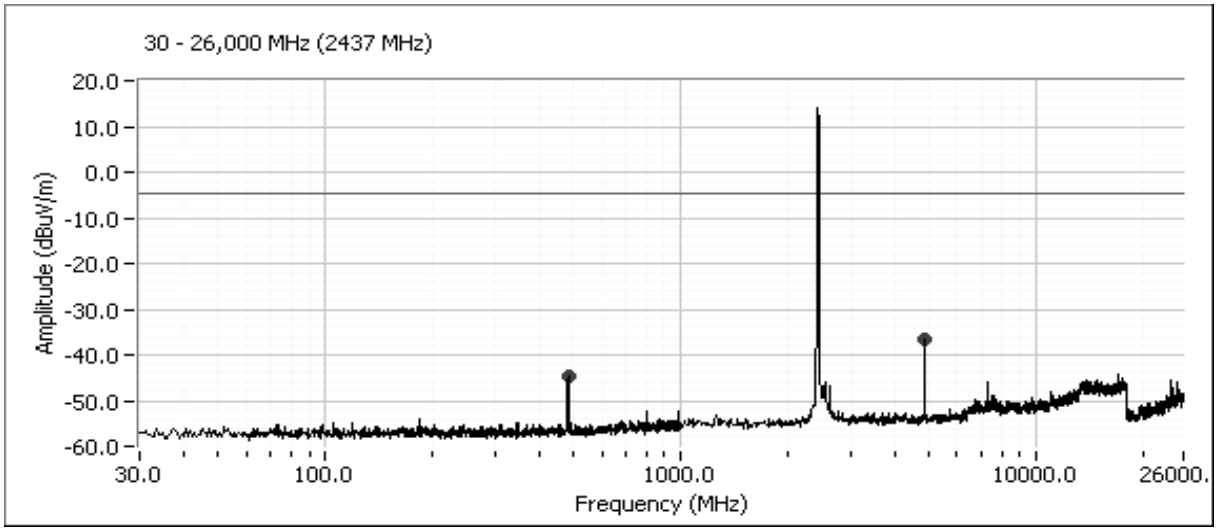
Refer to plots below. Scans made using RBW=VB=100 KHz with the limit line set at 20dB below the highest in-band signal level.



Frequency	Level	Port	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBm		Limit	Margin	Pk/QP/Avg	degrees	meters	
4820.000	-45.3	RF Port	-11.0	-34.3	Peak	-	-	RBW=VBW=100 kHz

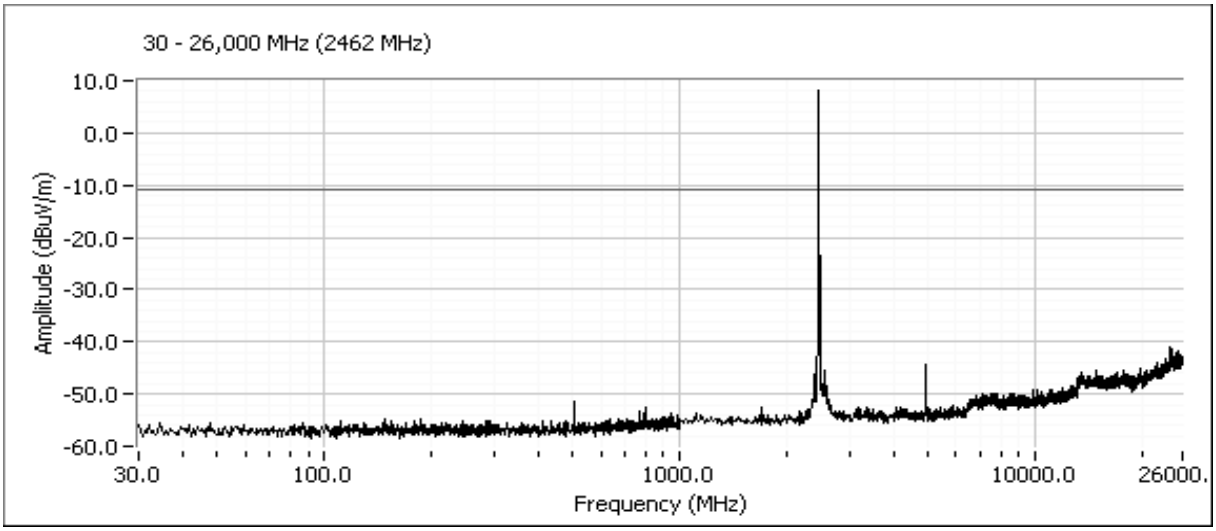
EMC Test Data

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A



Frequency	Level	Port	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBm		Limit	Margin	Pk/QP/Avg	degrees	meters	
482.000	-44.7	RF Port	-4.5	-40.2	Peak	-	-	RBW=VBW=100 kHz
4870.000	-36.4	RF Port	-4.5	-31.9	Peak	-	-	RBW=VBW=100 kHz

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A



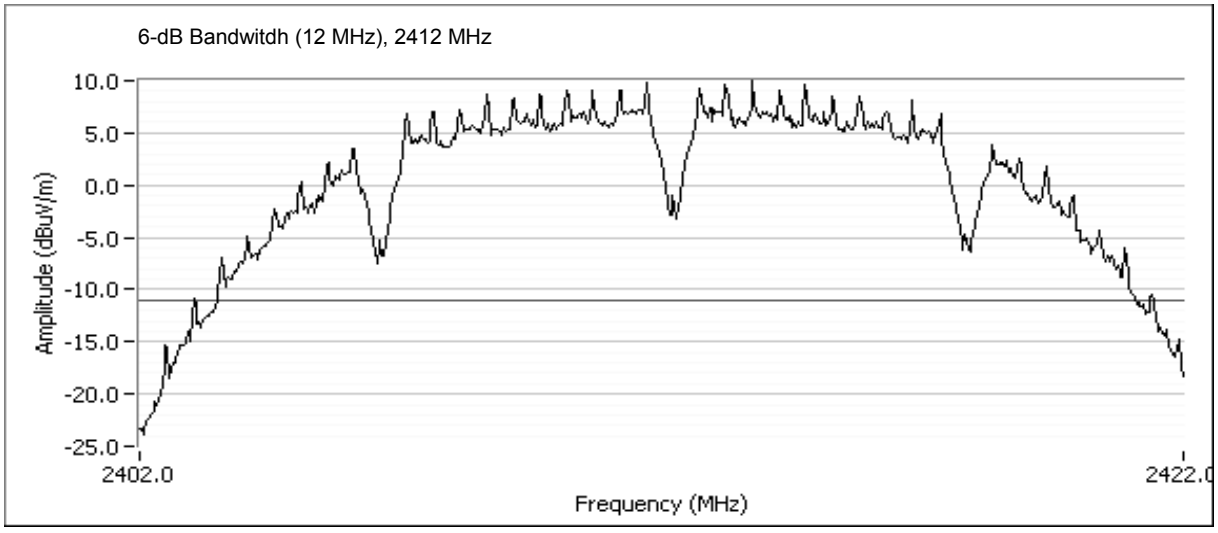
EMC Test Data

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

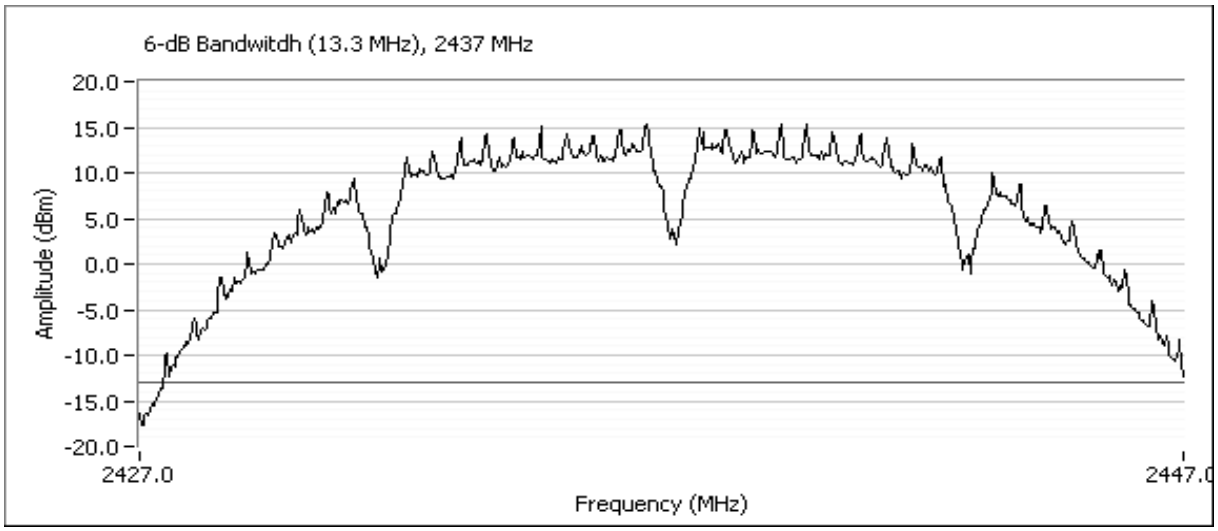
Run #2: Signal Bandwidth

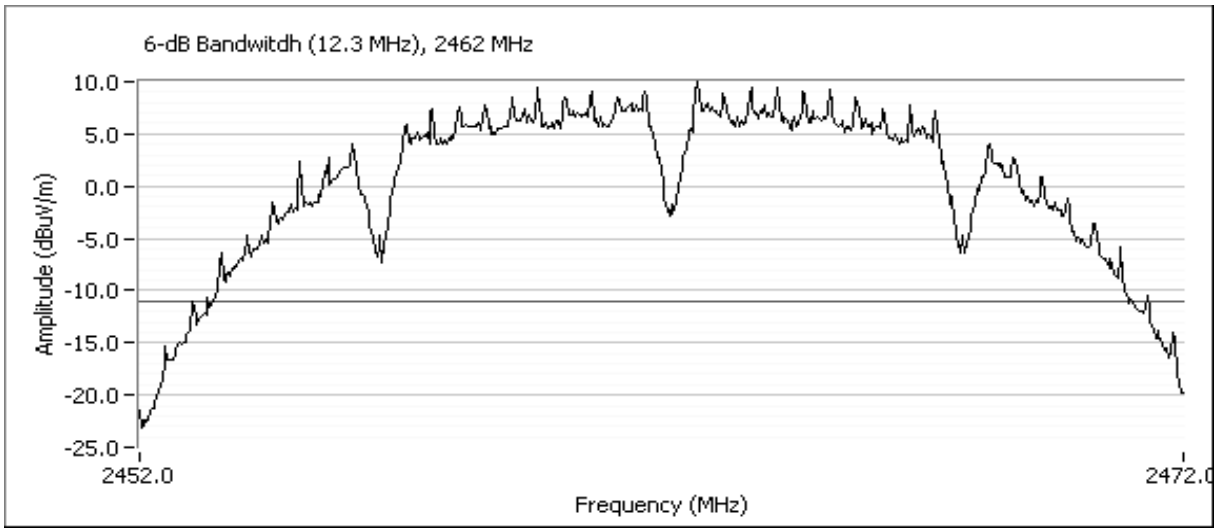
Channel	Frequency (MHz)	Resolution Bandwidth	6dB Signal Bandwidth (MHz)	99% Signal Bandwidth (MHz)
Low	2412	100kHz	12.0	15.7
Mid	2437	100kHz	13.3	15.7
High	2462	100kHz	12.3	15.7

Note 1:	Add note here
Note 2:	



Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A





Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #3: Output Power

Maximum antenna gain: 1 dBi

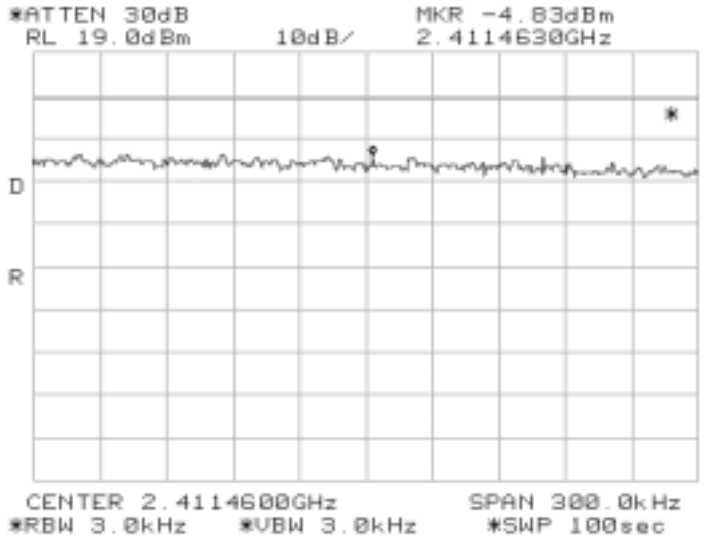
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	EIRP (W)
Low	2412	20.2	0.105	0.132
Mid	2437	26.2	0.412	0.519
High	2462	20.1	0.102	0.129

Note 1:	Output power measured using an peak power meter

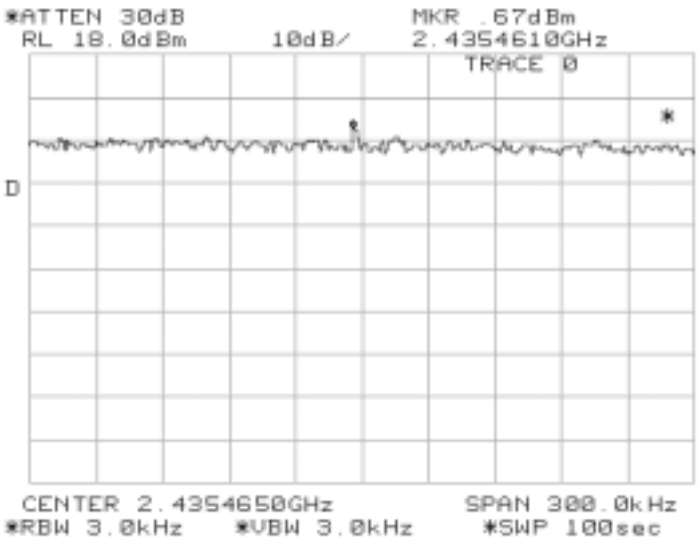
Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

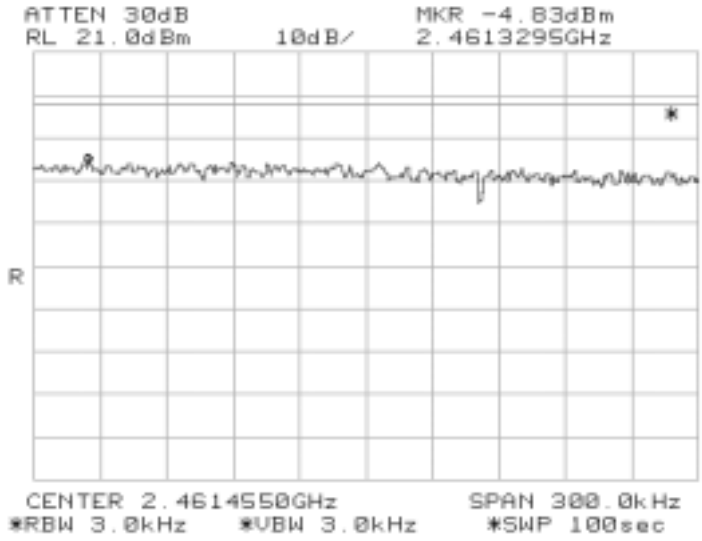
Run #4: Power Spectral Density

Channel	Frequency (MHz)	Res BW	P.S.D. (averaged over 1 second in a 3kHz bandwidth) dBm
Low	2412	3kHz	-4.83
Mid	2437	3kHz	0.67
High	2462	3kHz	-4.83



Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A





Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

FCC 15.247 DTS - Spurious Emissions

Test Specifics

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/10/2005 & 6/15/2005
Test Engineer: Chris Byleckie & Jmartinez
Test Location: SVOATS #2 & 3
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 15 °C
Rel. Humidity: 35 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 1000 - 18,000 MHz - Spurious Emissions	FCC Part 15.209 / 15.247(c)	Pass	43.1dBuV/m @ 7386 MHz (-10.9dB)
2	6dB Bandwidth	15.247(a)	Pass	16.7 MHz
3	Output Power	15.247(b)	Pass	26 dBm
4	Power Spectral Density (PSD)	15.247(d)	Pass	-4.33 dBm

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

EMC Test Data

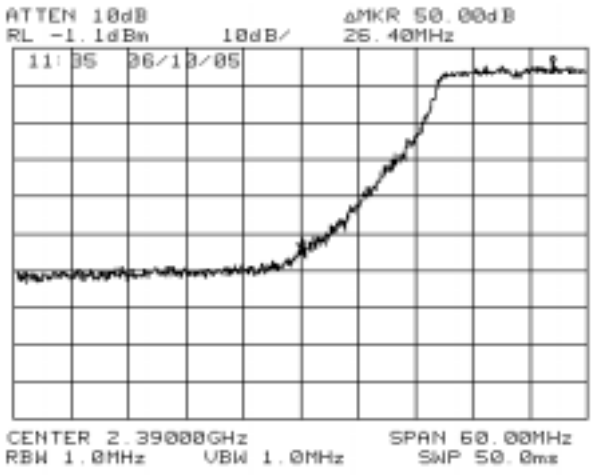
Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

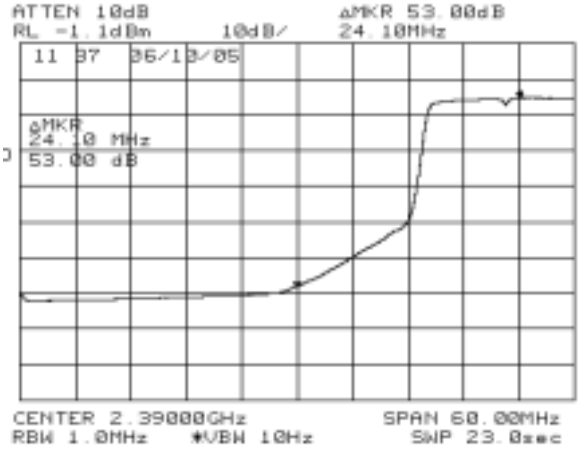
Spurious Emissions data taken on 6-3-05

Run #1a: Radiated Spurious Emissions, 1000 - 18,000 MHz. Low Channel @ 2412 MHz

802.11g, power set to 26dBm (Used Peak Power Meter) pcdac - 22

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:	106.09	113.25	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:	97.28	104.17	Average Measurement (RB=1MHz, VB=10Hz)
Delta Marker - Peak	50 dB		
Delta Marker - Average	53 dB		
Calculated Band-Edge Measurement:	63.25 dBuV/m		Peak
Calculated Band-Edge Measurement:	51.17 dBuV/m		Average





Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4824.000	47.0	v	74.0	-27.0	Pk	-	-	
4824.000	35.0	v	54.0	-19.0	Avg	-	-	
7236.000	48.0	v	93.3	-45.3	Pk	-	-	Non-Restricted
4824.000	48.0	h	74.0	-26.0	Pk	-	-	
4824.000	36.1	h	54.0	-17.9	Avg	-	-	
7236.000	50.0	h	93.3	-43.3	Pk	-	-	Non-Restricted

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.
Note 2:	No other spurious emissions detected after the 3rd harmonic 20-dB of the limit

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #1b: Radiated Spurious Emissions, 1000 - 18,000 MHz. Center Channel @ 2437 MHz
802.11g, power set to 26dBm (Used Peak Power Meter) pcdac - 20

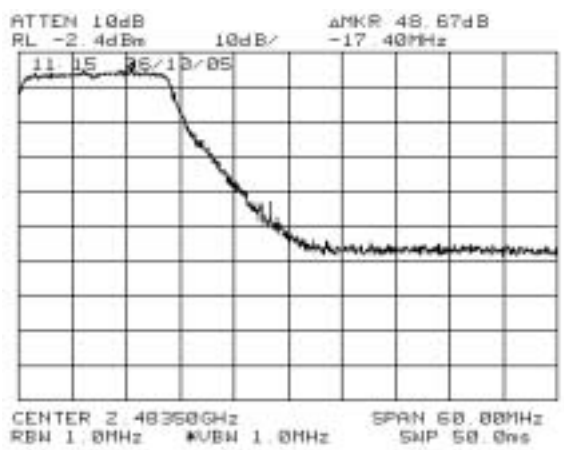
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4874.000	46.5	v	74.0	-27.5	Pk	-	-	
4874.000	34.2	v	54.0	-19.8	Avg	-	-	
7311.000	50.9	v	74.0	-23.1	Pk	-	-	
7311.000	38.2	v	54.0	-15.8	Avg			
4874.000	48.9	h	74.0	-25.1	Pk	-	-	
4874.000	36.3	h	54.0	-17.7	Avg	-	-	
7311.000	52.9	h	74.0	-21.1	Pk	-	-	
7311.000	40.1	h	54.0	-13.9	Avg	-	-	

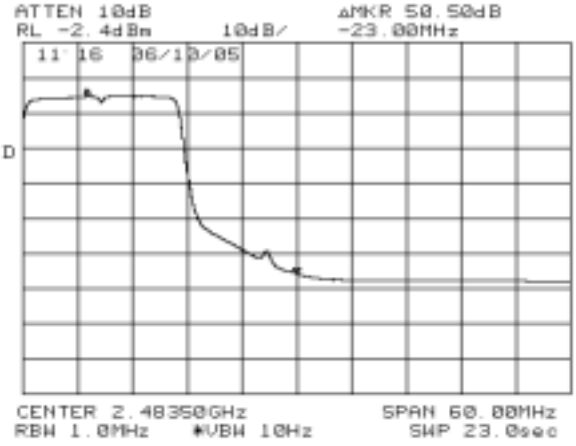
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.
Note 2:	No other spurious emissions detected after the 3rd harmonic 20-dB of the limit

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #21c: Radiated Spurious Emissions, 1000 - 18,000 MHz. High Channel @ 2462 MHz
802.11g, power set to 26dBm (Used Peak Power Meter) pcdac - 17

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:	108.52	112.86	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:	99.51	103.93	Average Measurement (RB=1MHz, VB=10Hz)
Delta Marker - Peak	48.67 dB		
Delta Marker - Average	50.5 dB		
Calculated Band-Edge Measurement:	64.19 dBuV/m		Peak
Calculated Band-Edge Measurement:	53.43 dBuV/m		Average





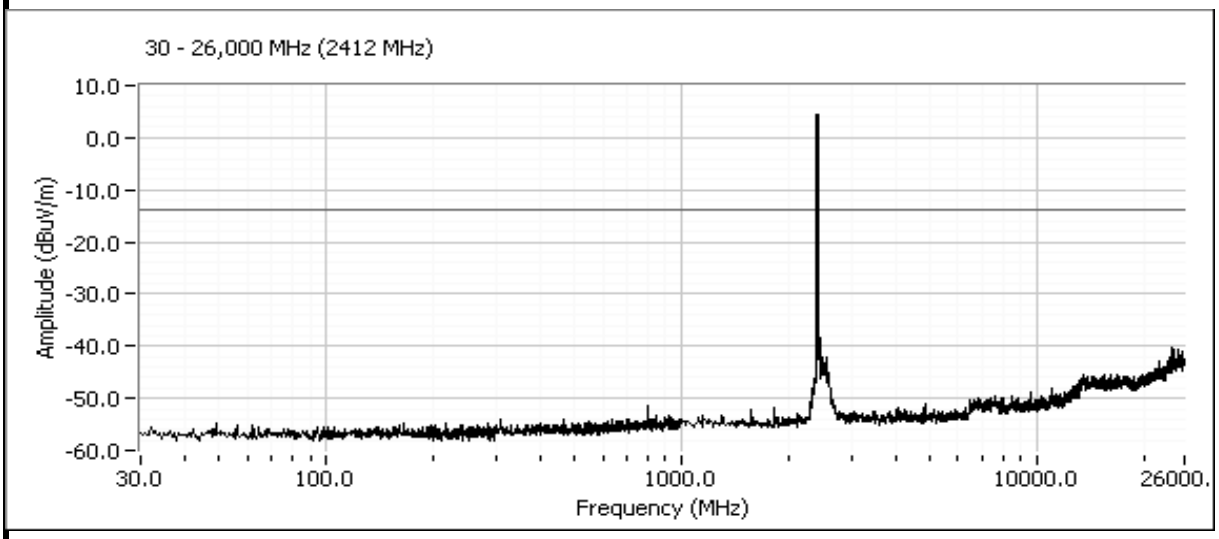
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4924.000	52.0	v	74.0	-22.0	Pk	-	-	
4924.000	38.6	v	54.0	-15.4	Avg	-	-	
7386.000	49.0	v	74.0	-25.0	Pk	-	-	
7386.000	35.6	v	54.0	-18.4	Avg			
4924.000	51.0	h	74.0	-23.0	Pk	-	-	
4924.000	37.4	h	54.0	-16.6	Avg	-	-	
7386.000	56.9	h	74.0	-17.1	Pk	-	-	
7386.000	43.1	h	54.0	-10.9	Avg	-	-	

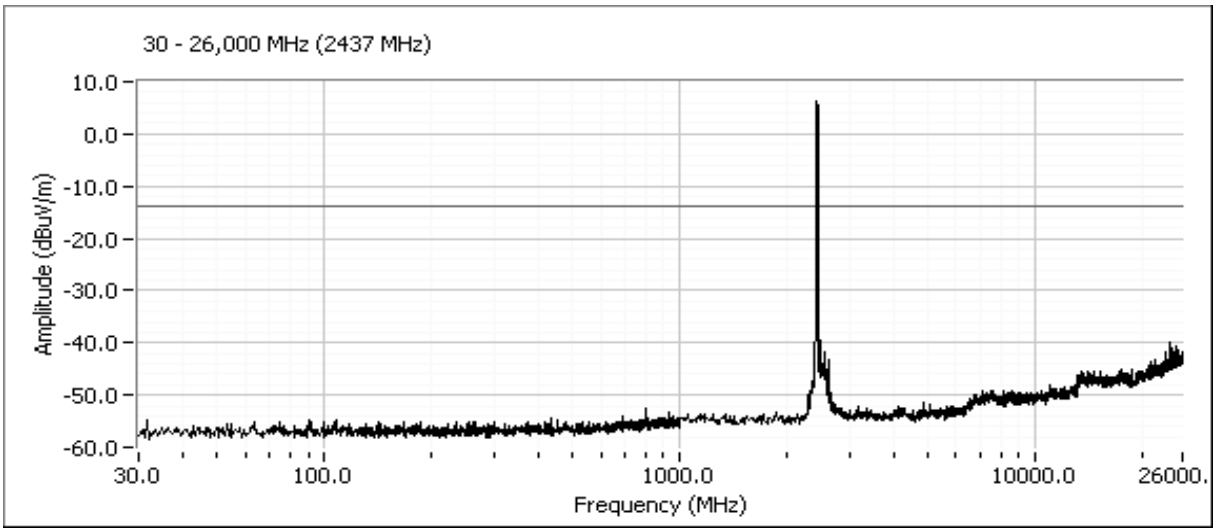
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.
Note 2:	No other spurious emissions detected after the 3rd harmonic 20-dB of the limit

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

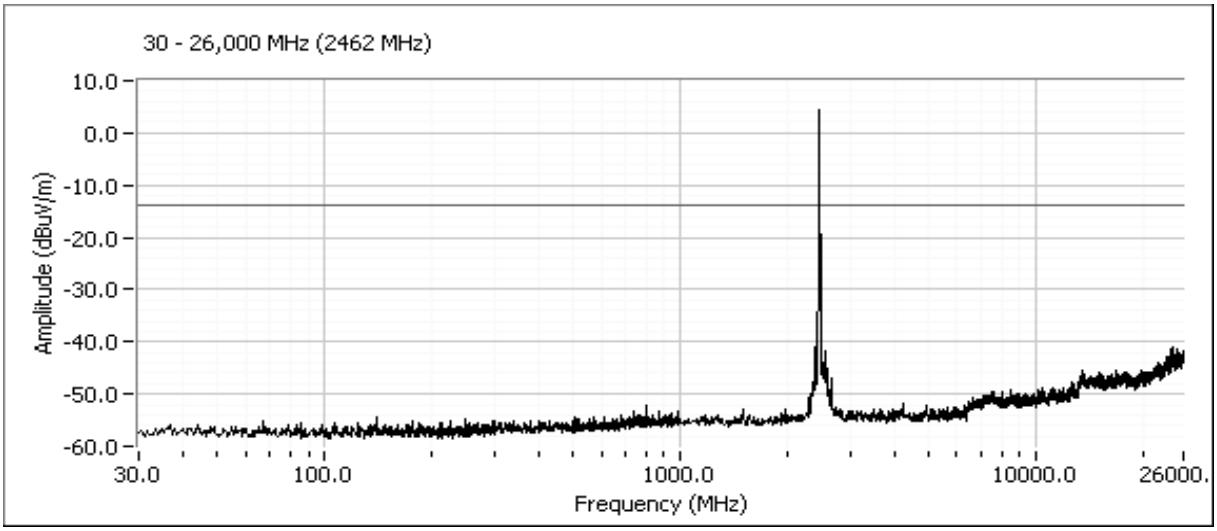
Run #1d: Antenna Conducted Spurious Emissions, 30 - 26,000 MHz.

Refer to plots below. Scans made using RBW=VB=100 KHz with the limit line set at 20dB below the highest in-band signal level.





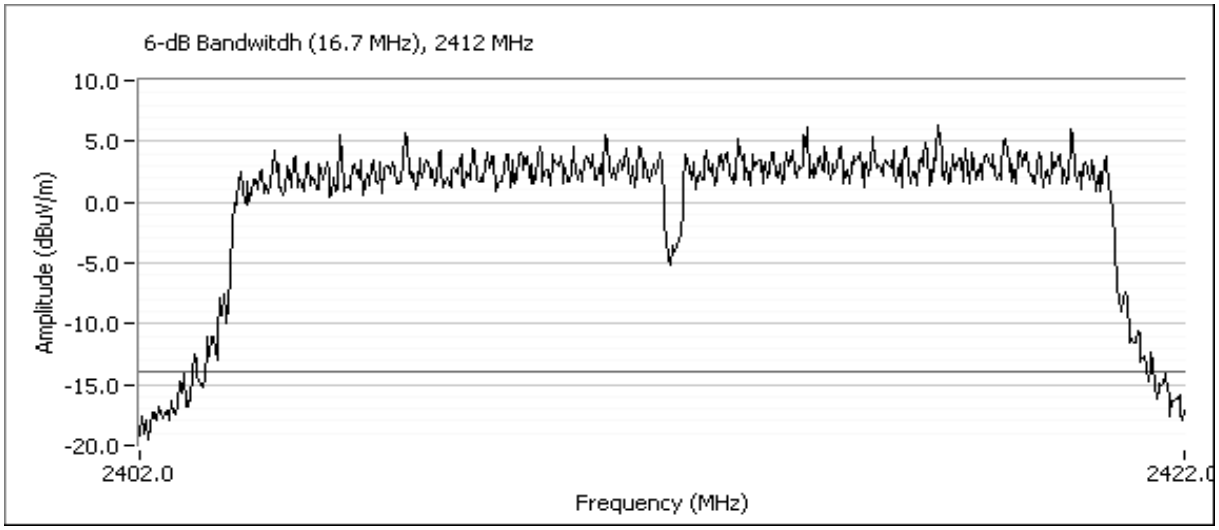
Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

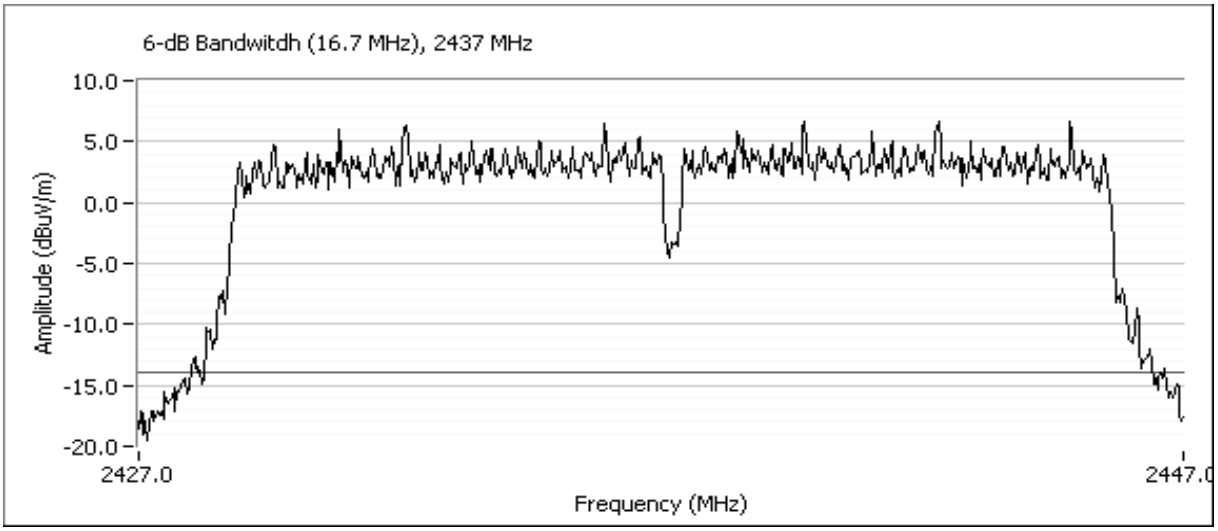


Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

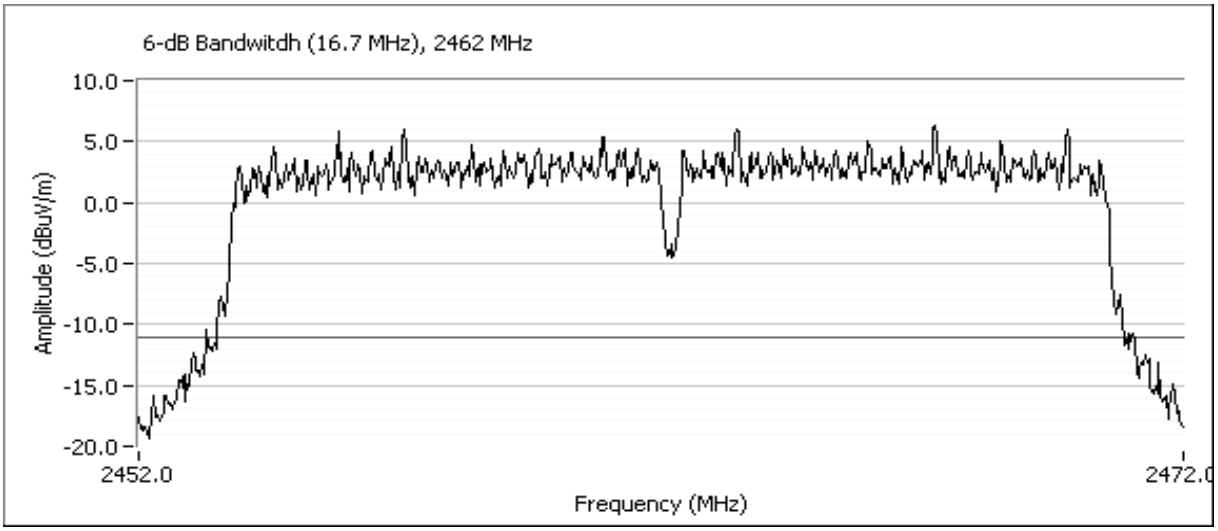
Run #2: Signal Bandwidth

Channel	Frequency (MHz)	Resolution Bandwidth	6dB Signal Bandwidth (MHz)	99% Signal Bandwidth (MHz)
Low	2412	100kHz	16.7	16.7
Mid	2437	100kHz	16.7	16.7
High	2462	100kHz	16.7	16.7





Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A



Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #3: Output Power

Maximum antenna gain: 1 dBi

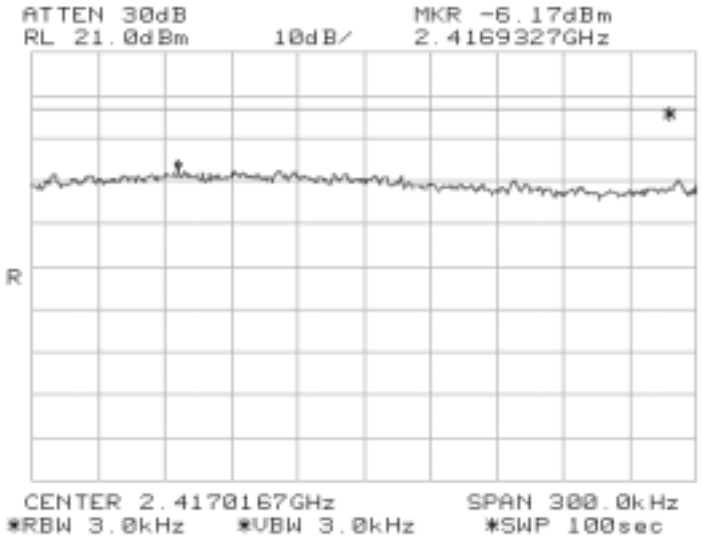
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	EIRP (W)
Low	2412	26.0	0.398	0.501
Mid	2437	26.0	0.398	0.501
High	2462	26.0	0.398	0.501

Note 1:	Output power measured using a peak power meter.

Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A

Run #4: Power Spectral Density

Channel	Frequency (MHz)	Res BW	P.S.D. (averaged over 1 second in a 3kHz bandwidth) dBm
Low	2412	3kHz	-6.17
Mid	2437	3kHz	-5.33
High	2462	3kHz	-4.33



Client:	2Wire, Inc.	Job Number:	J59884
Model:	2700HGV	T-Log Number:	T59972
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	FCC 15.247,RSS-201, FCC15	Class:	N/A