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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 for an Intentional Radiator on the 2Wire, Inc. Model: RG3700HGV-00 and RG370HGV-00

FCC ID:	PGR2W3700ATH
GRANTEE:	2Wire, Inc. 1704 Automation Parkway San Jose, CA 95131
TEST SITE:	Elliott Laboratories, Inc. 684 W. Maude Avenue Sunnyvale, CA 94086
REPORT DATE:	September 30, 2005
FINAL TEST DATE:	September 1, 2005
AUTHORIZED SIGNATORY:	Chris Byleckie Senior EMC Engineer

ACCREDITED
2016-01

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SCOPE

An electromagnetic emissions test has been performed on the 2Wire, Inc. model RG3700HGV-00 pursuant to Subpart C of Part 15 of FCC Rules for intentional radiators. 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 RG3700HGV-00 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 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.

Testing performed on RG3700HGV-00 was considered representative of the RG370HGV-00. The difference is in the broadband connection. On the 3700, it is VDSL, on the 370, the VDSL is bypassed and broadband comes in over the MoCA interface. For this product, the 3700HGV is the superset and is used as the family representative

SUMMARY OF RESULTS

FCC Part 15 Section	Description	Measured Value	Comments	Result
15.247(a)	Digital Modulation	Systems uses OFDM/ DSSS techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	6dB Bandwidth	802.11b 12.15MHz 802.11g 16.72MHz	Minimum allowed is 500kHz	Complies
	99% Bandwidth	802.11b 15.6MHz 802.11g 16.6 MHz	For information only	Complies
15.247 (b) (3)	Output Power, 2400 - 2483.5 MHz	802.11b 21.8 dBm (0.151 Watts) EIRP = 0.240 W 802.11g 26.8 dBm (0.479 Watts) EIRP = 0.759 W	Multi-point applications: Maximum permitted is 1Watt, with EIRP limited to 4 Watts.	Complies
15.247(d)	Power Spectral Density	802.11b -2.61 dBm / MHz 802.11g -3.51 dBm / MHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	Antenna Port Spurious Emissions – 30MHz – 25 GHz	All spurious emissions < -20dBc	All spurious emissions < -20dBc.	Complies
15.247(c) / 15.209	Radiated Spurious Emissions – 30MHz – 25 GHz	53.9 dBuV/m @ 4874MHz (-0.1dB)	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	49.2 dBuV @ 19.647. MHz (-0.8dB)		Complies
15.247 (b) (5)	RF Exposure Requirements	MPE Calculation consistent with mobile use. User manual statement (page 81) also consistent with MPE calculation.	RF exposure requirements.	Complies
15.203	RF Connector	The antenna is integral to the EUT	Unique antenna connection required for user-installed applications.	Complies

EIRP calculated using antenna gain of 2.0dBi 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 RG3700HGV-00 is a Wireless VDSL router which is designed to route VDSL signals to various network interfaces. 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 120/240 V, 50/60 Hz, 0.8 Amps.

The sample was received on August 24, 2005 and tested on September 1, 2005. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
2Wire	RG3700HGV-00	Wireless 802.11B/G VDSL router	325114028821	PGR2W3700ATH

OTHER EUT DETAILS

Power supply:
Good Power Model# JSE-02512-U
Input: 120V, 50/60Hz 0.8A
Output: 12VDC, 2.9A

Testing performed on the RG3700HGV-00 was considered representative of the following models. The wireless transceiver circuitry is identical in all models. The main differences are in the wired options available.

Model	DSL	Voice	Wireless	Ethernet	USB	MoCA
RG3700HGV-00	Yes	Yes	Yes	Yes	Yes	Yes
RG370HGV-00	No	Yes	Yes	Yes	Yes	Yes
RG370-00	No	No	No	Yes	Yes	Yes
RG370HG-00	No	No	Yes	Yes	Yes	Yes
RG370V-00	No	Yes	No	Yes	Yes	Yes

ENCLOSURE

The EUT enclosure is primarily constructed of ABS plastic with a fabricated sheet steel outer shield. It measures approximately 29.5 cm wide by 24.5 cm deep by 5 cm high.

MODIFICATIONS

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

SUPPORT EQUIPMENT

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

Manufacturer	Model	Description	Serial Number
Coby	-	Phone	324001152
ADAPCOM	Micro-890	ADSL Mini-DSLAM	-
Motorola	Moca	Ethernet Bridge	520111-001-00
Dell	PP01L	Laptop	CN-04P240048643-35F-1683
Dell	-	Laptop	CX-04P240-38643-36P-1826
Dell	-	Laptop	-

No remote support equipment was used during testing.

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)
DSL	DSLAM	RJ11	Shielded	1
Voice	Phone	RJ11	Unshielded	3
Ethernet	Laptop	Cat 5	Unshielded	1
USB	Laptop	Multiwire	Shielded	1.5
Moca	Motorola Ethernet Bridge	coax	Shielded	3
Motorola Ethernet Bridge	Laptop	Cat 5	Unshielded	1
AC	Power	3 Wire	Unshielded	1.5

EUT OPERATION

During transmitter testing the EUT was transmitting continuously on either the low, 2412MHz, the middle, 2437MHz, or the high, 2462MHz, channel. The transmitting tests were done for both CCK and OFDM modulation. For receiver testing the EUT was set to receive on the middle, 2437MHz channel.

ANTENNA REQUIREMENTS

The antenna is integral to the device

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on September 1, 2005at the Elliott Laboratories Open Area Test Site #2 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 6 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 terms 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:

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

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

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Radiated Emissions, 30 - 2,000 MHz, 24-Aug-05
Engineer: Peter Sales

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	26-Apr-06
EMCO	Horn Antenna, D. Ridge 1-18GHz	3115	786	08-Nov-05
Hewlett Packard	EMC Spectrum Analyzer 9kHz - 6.5GHz	8595EM	787	17-Dec-05
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

Conducted Emissions - AC Power, 24-Aug-05
Engineer: Peter Sales

Manufacturer	Description	Model #	Asset #	Cal Due
Elliott Laboratories	FCC / CISPR LISN	LISN-3, OATS	304	08-Jul-06
Hewlett Packard	EMC Spectrum Analyzer 9kHz - 6.5GHz	8595EM	787	17-Dec-05
Solar Electronics	LISN	8028-50-TS-24-BNC support	904	08-Jul-06
Rohde & Schwarz	Test Receiver, 0.009-2750 MHz	ESN	1332	23-May-06
Rohde& Schwarz	Pulse Limiter	ESH3 Z2	1398	11-Feb-06

Radio Antenna Port (Power and Spurious Emissions), 01-Sep-05
Engineer: Mehran Birgani

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Horn Antenna, D. Ridge 1-18GHz	3115	786	08-Nov-05
Hewlett Packard	EMC Spectrum Analyzer 9kHz - 40 GHz, Fremont (SA40)	8564E (84125C)	1393	26-Oct-05
Hewlett Packard	High Pass filter, 3.5GHz	P/N 84300-80038 (84125C)	1403	09-Jun-06
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1422	01-Nov-05
Rohde & Schwarz	Power Sensor, 1uW-100mW, DC-18 GHz, 50ohm	NRV-Z51	1535	22-Sep-05
Rohde & Schwarz	Peak Power Sensor 100uW - 2 Watts	NRV-Z32	1536	09-May-06

EXHIBIT 2: Test Data Log Sheets

ELECTROMAGNETIC EMISSIONS

TEST LOG SHEETS

AND

MEASUREMENT DATA

T 60846 28 Pages

Elliott

EMC Test Data

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Emissions Spec:	EN55022	Class:	B
Immunity Spec:	-	Environment:	-

EMC Test Data

For The

2Wire

Model

RG3700HGV-00 and RG370HGV-00

Date of Last Test: 10/12/2005

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Emissions Spec:	EN55022	Class:	B
Immunity Spec:	-	Environment:	-

EUT INFORMATION

General Description

The EUT is a Wireless VDSL router which is designed to route VDSL signals to various network interfaces. 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 120/240 V, 50/60 Hz, 0.8 Amps.

Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
2Wire	RG3700HGV-00	Wireless 802.11B/G VDSL router	325114028821	PGR2W3700ATH

Other EUT Details

Power supply:
Good Power Model# JSE-02512-U
Input: 120V, 50/60Hz 0.8A
Output: 12VDC, 2.9A
Testing performed on the RG3700HGV-00 was considered representative of the following models. The wireless transceiver circuitry is identical in all models. The main differences are in the wired options available.

Model	DSL	Voice	Wireless	Ethernet	USB	MoCA
RG3700HGV-00	Yes	Yes	Yes	Yes	Yes	Yes
RG370HGV-00	No	Yes	Yes	Yes	Yes	Yes
RG370-00	No	No	No	Yes	Yes	Yes
RG370HG-00	No	No	Yes	Yes	Yes	Yes
RG370V-00	No	Yes	No	Yes	Yes	Yes

EUT Antenna

The antenna is integral to the device
AN MMCX connector is in series with the Tx antenna to provide direct power measurements

EUT Enclosure

The EUT enclosure is primarily constructed of ABS plastic with a fabricated sheet steel outer shield. It measures approximately 29.5 cm wide by 24.5 cm deep by 5 cm high.

Modification History

Mod. #	Test	Date	Modification
1	-	-	None

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

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Emissions Spec:	EN55022	Class:	B
Immunity Spec:	-	Environment:	-

Test Configuration #1

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
Coby	-	Phone	324001152	-
ADAPCOM	Micro-890	ADSL Mini-DSLAM	-	-
Motorola	Moca	Ethernet Bridge	520111-001-00	-
Dell	PP01L	Laptop #1	CN-04P240048643-35F-1683	-
Dell	-	Laptop #2	CX-04P240-38643-36P-1826	-
Dell	-	Laptop #3	-	-

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	-	Laptop #4	-	-

Interface Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
DSL	DSLAM	RJ11	Shielded	1
Voice	Phone	RJ11	Unshielded	3
Ethernet	Laptop	Cat 5	Unshielded	1
USB	Laptop	Multiwire	Shielded	1.5
Moca	Motorola Ethernet Bridge	coax	Shielded	3
Motorola Ethernet Bridge	Laptop	Cat 5	Unshielded	1
AC	Power	3 Wire	Unshielded	1.5

EUT Operation During Digital Emissions Tests

During emissions testing, the EUT was connected to three remote laptop PCs using the EUT's MoCA line, Ethernet and USB ports. The three Laptops were pinging the EUT, the DSLAM kept the VDSL port active. The phone terminated the Voice port. The remote laptop was pinging the EUT via wireless.

EUT Operation During Transceiver Tests

During transmitter testing the EUT was transmitting continuously on either the low, 2412MHz, the middle, 2437MHz, or the high, 2462MHz, channel. The transmitting tests were done for both CCK and OFDM modulation. For receiver testing the EUT was set to receive on the middle, 2437MHz channel.

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and 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: 9/1/2005
Test Engineer: Mehran Birgani
Test Location: SVOATS #2

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT was located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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: 61 %

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 30 - 25000 MHz Spurious Emissions in Restricted Bands	FCC Part 15.209 / 15.247(c)	Pass	52.4dBuV/m (416 uV/m) @ 2390 Mhz (-1.6dB)
2	6dB Bandwidth	15.247(a)	Pass	16.72 MHz
3	Output Power	15.247(b)	Pass	26.8 dBm
4	Power Spectral Density (PSD)	15.247(d)	Pass	-3.51 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.

EUT Configuration:

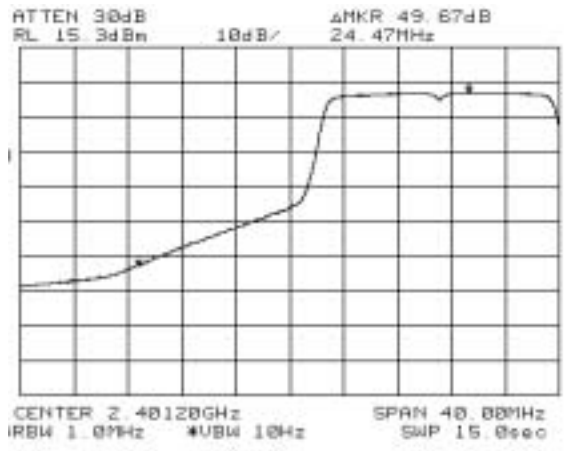
Output Power Setting:	20
Antenna:	A
Output Mode:	TX99
Rate:	6 Mbps

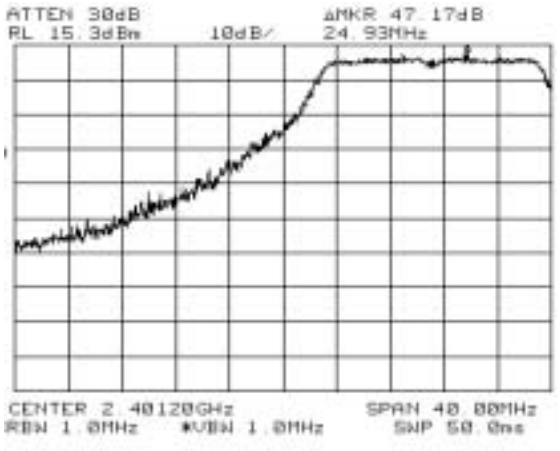
Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1a: Radiated Spurious Emissions, 30 - 25000 MHz. Low Channel @ 2412 MHz

Fundamental Signal Field Strength:

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2410.740	101.0	H	-	-	AVG	265	2.0	RB = 1MHz, VB = 10Hz
2410.740	108.6	H	-	-	PK	265	2.0	RB = VB = 1MHz
2408.833	102.1	V	-	-	AVG	180	1.1	RB = 1MHz, VB = 10Hz
2408.833	110.7	V	-	-	PK	180	1.1	RB = VB = 1MHz





Delta Marker - Peak	47.2 dB	Delta between highest in-band and highest restricted band level
Delta Marker - Average	49.7 dB	

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	63.5	V	74.0	-10.5	Peak	180	1.1	Power Setting 20
2390.000	52.4	V	54.0	-1.6	Average	180	1.1	Power Setting 20

Note 1:	Calculated by subtracting the marker delta values from the fundamental field strength measurements.

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4821.525	48.8	H	54.0	-5.2	AVG	252	1.9	2nd Harmonics
4822.805	42.6	V	54.0	-11.4	AVG	322	1.0	2nd Harmonics
4821.525	60.8	H	74.0	-13.2	PK	252	1.9	2nd Harmonics
4822.805	53.5	V	74.0	-20.5	PK	322	1.0	2nd Harmonics

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.

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1b: Radiated Spurious Emissions, 30 - 25000 MHz. Center Channel @ 2437 MHz

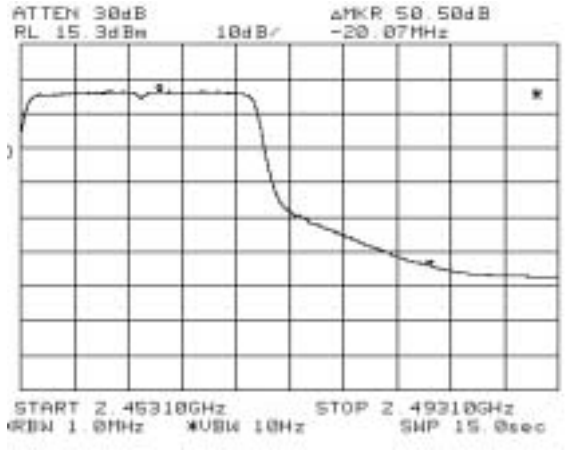
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4874.350	50.6	H	54.0	-3.5	AVG	251	1.9	2nd Harmonics
4874.350	64.2	H	74.0	-9.8	PK	251	1.9	2nd Harmonics
7309.525	44.1	H	54.0	-9.9	AVG	258	1.5	3rd Harmonics
4875.100	41.4	V	54.0	-12.6	AVG	306	1.0	2nd Harmonics
7313.650	39.8	V	54.0	-14.2	AVG	320	1.1	3rd Harmonics
7309.525	56.7	H	74.0	-17.3	PK	258	1.5	3rd Harmonics
4875.100	53.5	V	74.0	-20.5	PK	306	1.0	2nd Harmonics
7313.650	50.7	V	74.0	-23.4	PK	320	1.1	3rd Harmonics

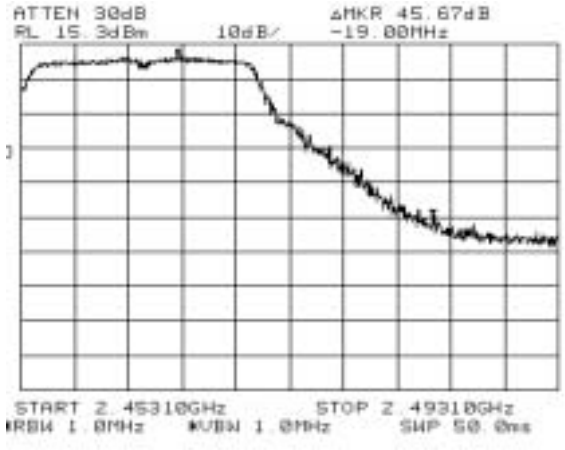
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.

Run #1c: Radiated Spurious Emissions, 30 - 25000 MHz. High Channel @ 2462 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.150	102.2	H	-	-	AVG	209	1.9	RB = 1MHz, VB = 10Hz
2463.150	111.1	H	-	-	PK	209	1.9	RB = VB = 1MHz
2462.980	102.6	V	-	-	AVG	184	1.0	RB = 1MHz, VB = 10Hz
2462.980	111.7	V	-	-	PK	184	1.0	RB = VB = 1MHz





Delta Marker - Peak	45.7 dB	Delta between highest in-band and highest restricted band level
Delta Marker - Average	50.5 dB	

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1c: continue

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.490	66.0	V	74.0	-8.0	Peak	184	1.0	Power Setting 20
2484.490	52.1	V	54.0	-1.9	Average	184	1.0	Power Setting 20

Note 1:	Calculated by subtracting the marker delta values from the fundamental field strength measurements.

Other Spurious Emissions

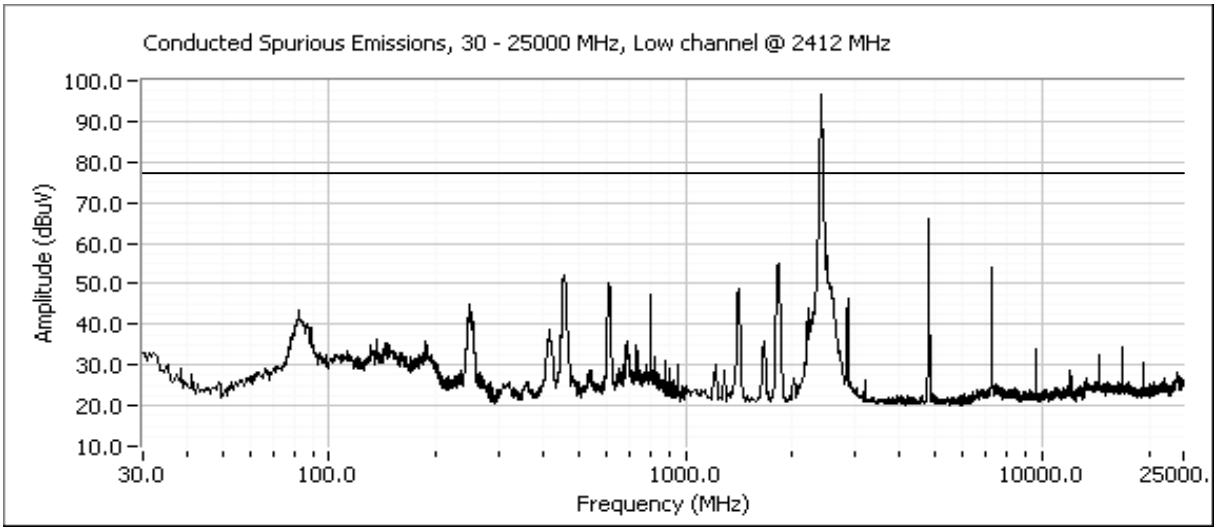
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
7386.375	45.0	H	54.0	-9.1	AVG	341	1.4	3rd Harmonics
4924.720	44.1	H	54.0	-9.9	AVG	66	1.3	2nd Harmonics
12317.30	40.8	H	54.0	-13.2	AVG	358	1.0	5th Harmonics (Noise Floor)
7386.13	40.7	V	54.0	-13.3	AVG	11	1.2	3rd Harmonics
4921.40	40.3	V	54.0	-13.7	AVG	262	1.0	2nd Harmonics
7386.375	57.9	H	74.0	-16.1	PK	341	1.4	3rd Harmonics
4924.720	54.8	H	74.0	-19.2	PK	66	1.3	2nd Harmonics
7386.13	52.5	V	74.0	-21.5	PK	11	1.2	3rd Harmonics
4921.40	52.4	V	74.0	-21.6	PK	262	1.0	2nd Harmonics
12317.30	51.1	H	74.0	-22.9	PK	358	1.0	5th Harmonics (Noise Floor)

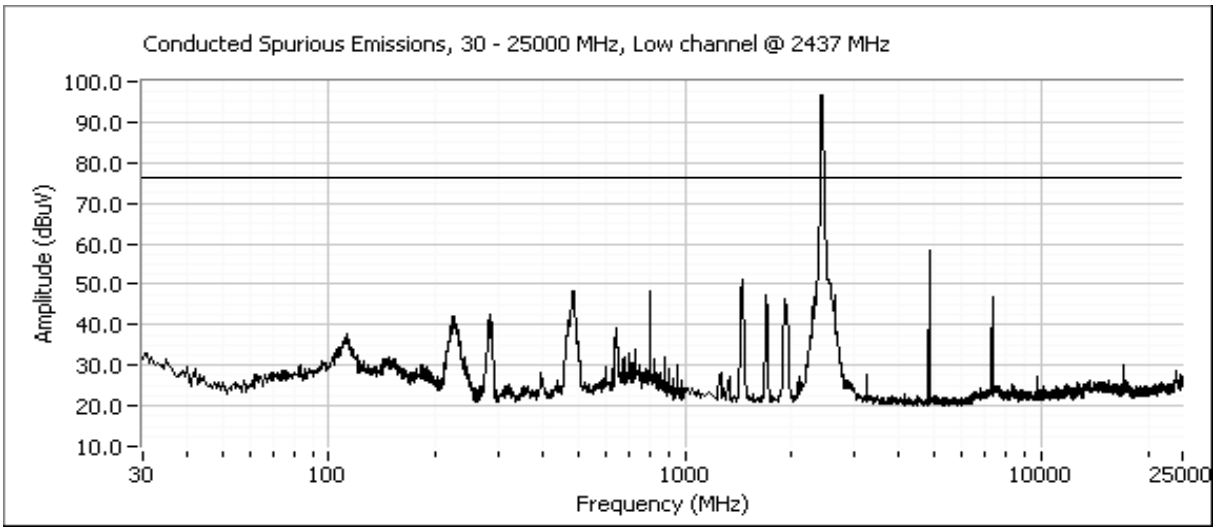
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1d: Antenna Conducted Spurious Emissions, 30 - 25000 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.

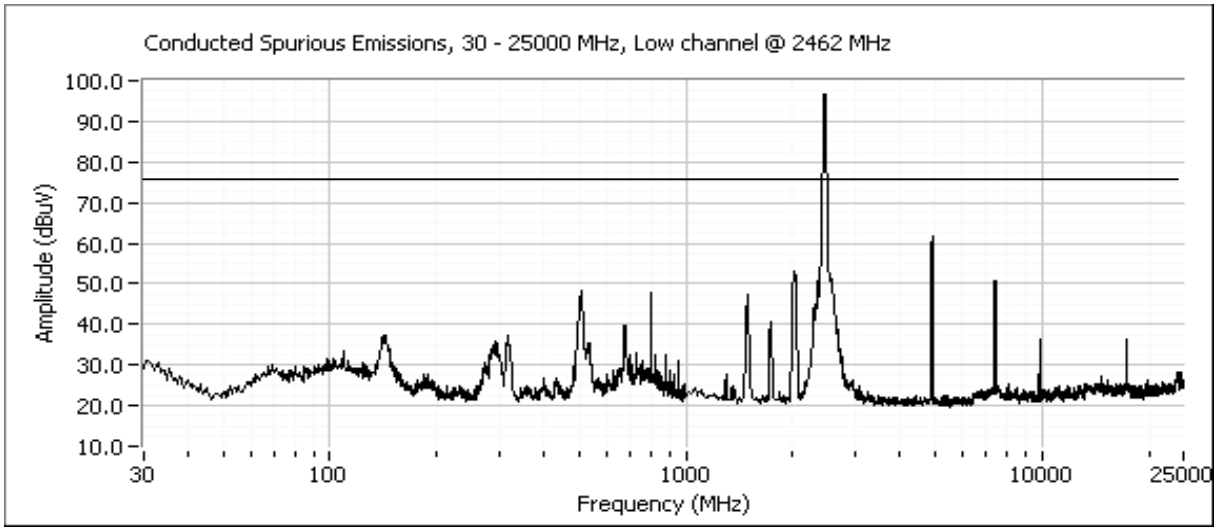




Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1d: Antenna Conducted Spurious Emissions, 30 - 25000 MHz.

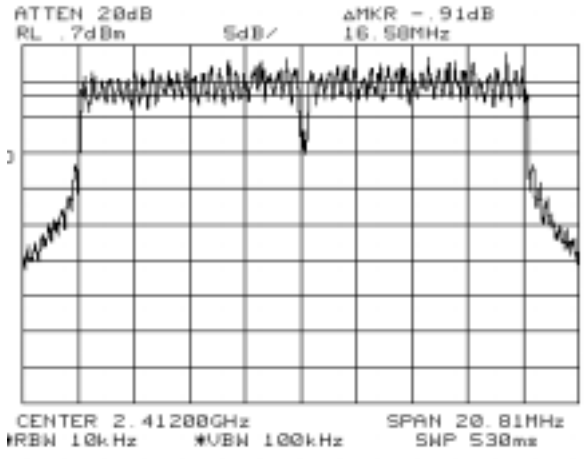
Refer to plots below. Scans made using RBW=VB=100 KHz with the limit line set at 20dB below the highest in-band signal level.

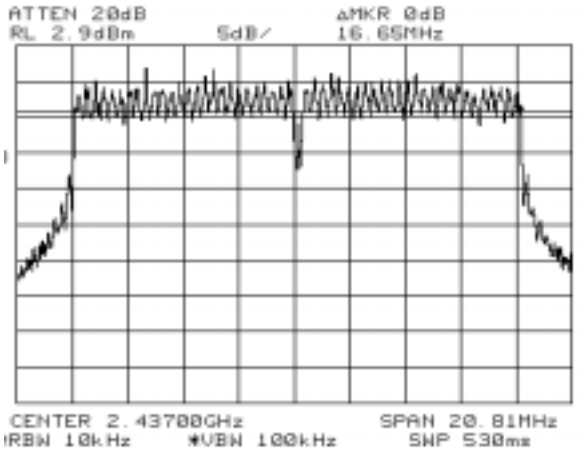


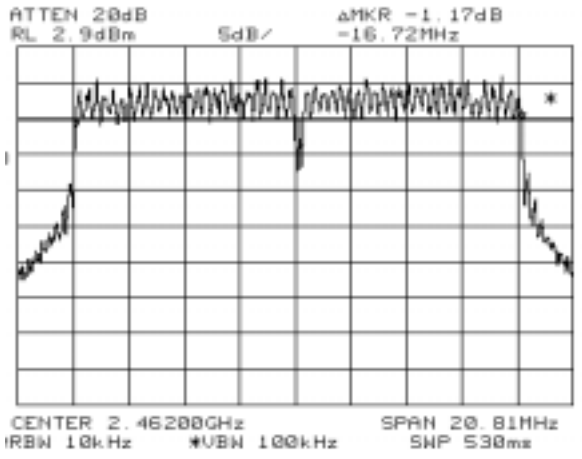
Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	6dB Signal Bandwidth	99% Signal Bandwidth
20	2412	10kHz	16.58	16.6
20	2437	10kHz	16.65	16.6
20	2462	10kHz	16.72	16.6







Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #3: Output Power

Maximum antenna gain: 2 dBi

Power Setting	Frequency (MHz)	Peak Output Power dBm	Peak Output Power W	EIRP W	Average Power Note 2 dBm	Average Power Note 2 W
20	2412	26.8	0.479	0.759	18.1	0.065
20	2437	26.6	0.457	0.724	18.0	0.063
20	2462	26.2	0.417	0.661	17.6	0.058

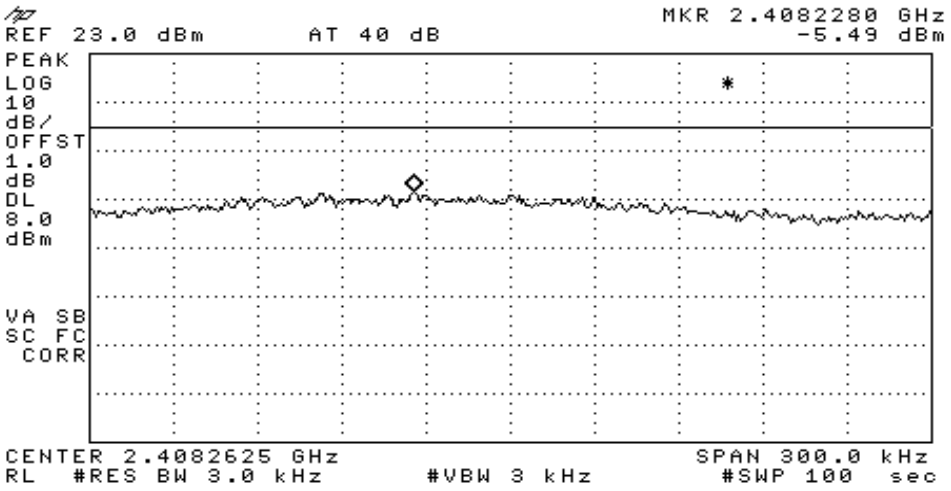
Note 1:	Output power measured using a peak power meter
Note 2:	Output power measured using an average power sensor - this value is for reference purposes only.

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

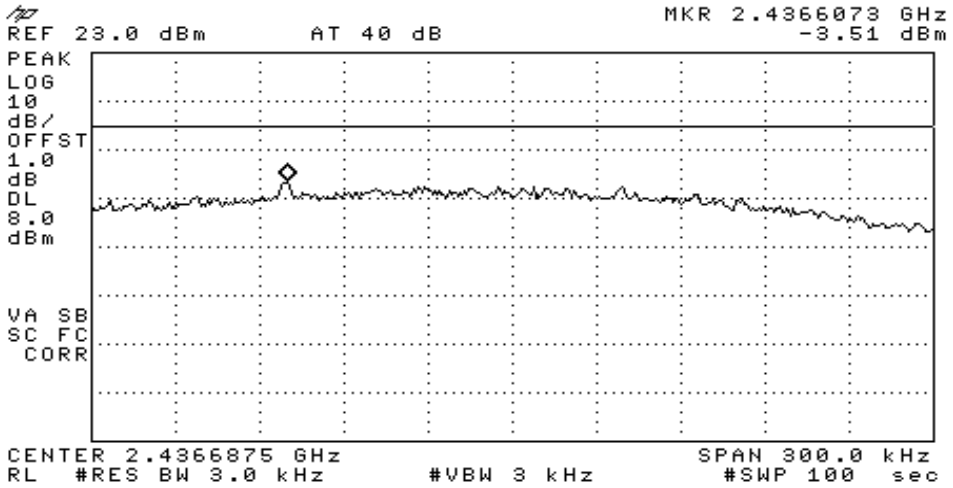
Run #4: Power Spectral Density

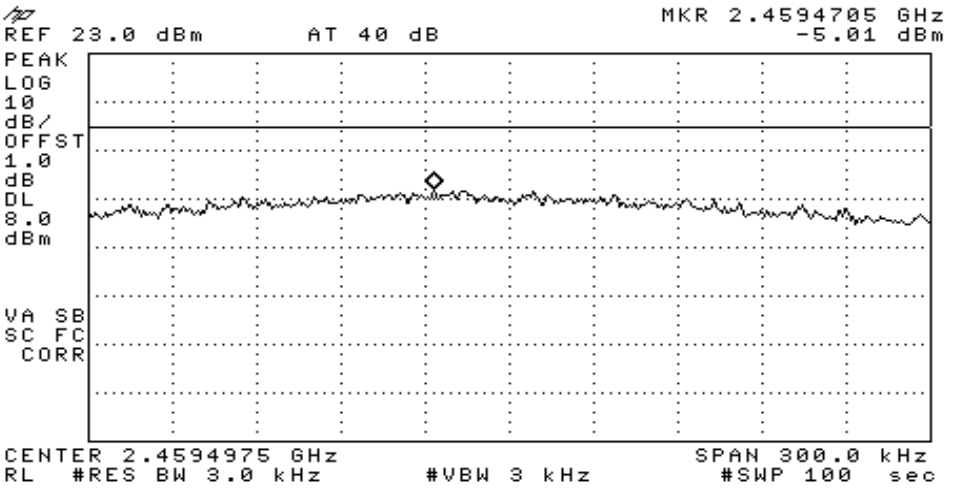
Power Setting	Operating Frequency (MHz)	Freq. @ PPSD	Res BW	P.S.D. (dBm/3kHz)
20	2412	2408.22	3kHz	-5.49
20	2437	2436.61	3kHz	-3.51
20	2462	2459.47	3kHz	-5.01

Note 1:	Freq. @ PPSD: Frequency of the Peak Power Spectral Density (PPSD)
Note 2:	Power spectral density measured using RB=3 kHz, VB=10kHz with a sweep time set to ensure a dwell time of at least 1 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal.



Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A





Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and 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: 9/2/2005
Test Engineer: Jmartinez
Test Location: SVOATS #2

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT was located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT.

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: 61 %

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 30 - 25000 MHz Spurious Emissions in Restricted Bands	FCC Part 15.209 / 15.247(c)	Pass	53.9dBuV/m (493.7 uV/m) @ 4874 MHz (- 0.1dB)
2	6dB Bandwidth	15.247(a)	Pass	12.15 MHz
3	Output Power	15.247(b)	Pass	21.8 dBm
4	Power Spectral Density (PSD)	15.247(d)	Pass	-2.61 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.

EUT Configuration:

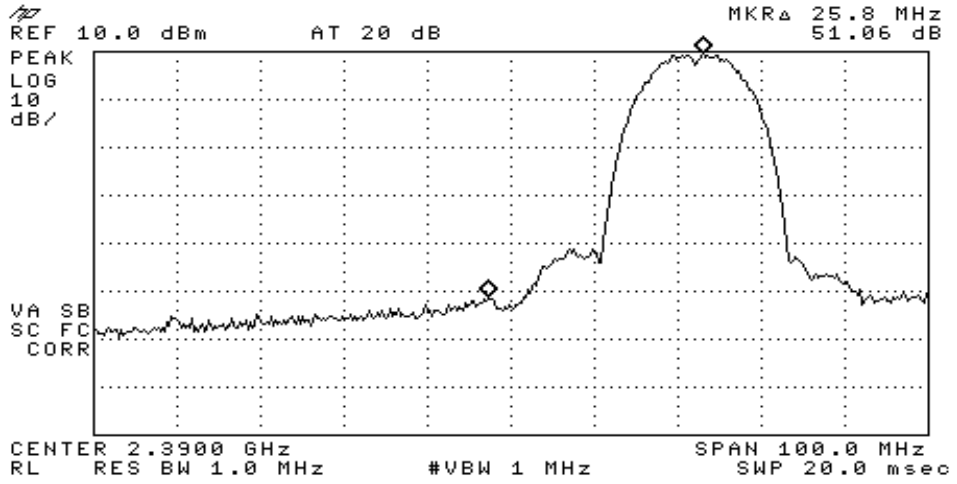
Output Power Setting:	20
Antenna:	A
Output Mode:	TX100
Rate:	1 Mbps

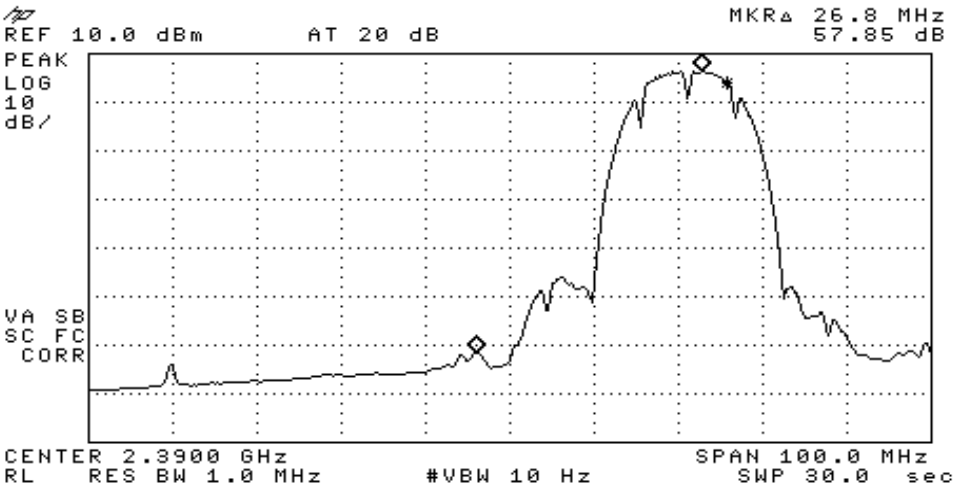
Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1a: Radiated Spurious Emissions, 30 - 12500 MHz. Low Channel @ 2412 MHz

Fundamental Signal Field Strength:

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2413.950	102.7	V	-	-	AVG	233	1.0	RB = 1MHz, VB = 10Hz
2413.950	105.4	V	-	-	PK	233	1.0	RB = VB = 1MHz
2410.900	99.7	H	-	-	AVG	119	1.2	RB = 1MHz, VB = 10Hz
2410.900	102.5	H	-	-	PK	119	1.2	RB = VB = 1MHz





Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Delta Marker - Peak	51.1 dB
Delta Marker - Average	57.9 dB

Delta between highest in-band and highest restricted band level

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000	54.4	V	74.0	-19.7	Peak	-	-	Power Setting 20
2390.000	44.8	V	54.0	-9.2	Average	-	-	Power Setting 20

Note 1:	Calculated by subtracting the marker delta values from the fundamental field strength measurements.

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4823.888	51.5	H	54.0	-2.5	AVG	268	1.7	Power Setting = 20
4823.888	57.1	H	74.0	-16.9	PK	268	1.7	Power Setting = 20
4824.038	48.3	V	54.0	-5.7	AVG	174	1.0	Power Setting = 20
4824.038	56.0	V	74.0	-18.0	PK	174	1.0	Power Setting = 20
7236.735	37.9	H	-	-	AVG	174	1.6	Power Setting = 20
7236.735	47.0	H	-	-	PK	174	1.6	Power Setting = 20
9647.940	43.1	H	-	-	AVG	23	1.3	Power Setting = 20
9647.940	51.3	H	-	-	PK	23	1.3	Power Setting = 20
12060.54	39.6	H	54.0	-14.4	AVG	276	1.1	Power Setting = 20
12060.54	51.2	H	74.0	-22.8	PK	276	1.1	Power Setting = 20
7237.840	35.3	V	-	-	AVG	322	1.5	Power Setting = 20
7237.840	45.8	V	-	-	PK	322	1.5	Power Setting = 20
9648.015	43.9	V	-	-	AVG	3	1.2	Power Setting = 20
9648.015	50.3	V	-	-	PK	3	1.2	Power Setting = 20
12059.33	39.6	V	54.0	-14.4	AVG	301	1.0	Power Setting = 20
12059.33	50.5	V	74.0	-23.5	PK	301	1.0	Power Setting = 20

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.

Elliott

EMC Test Data

Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1b: Radiated Spurious Emissions, 30 - 12500 MHz. Center Channel @ 2437 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4874.023	53.9	H	54.0	-0.1	AVG	209	1.8	Power Setting = 23
4874.023	58.7	H	74.0	-15.3	PK	209	1.8	Power Setting = 23
7313.100	41.0	V	54.0	-13.0	AVG	22	1.0	Power Setting = 23
7313.100	49.1	V	74.0	-24.9	PK	22	1.0	Power Setting = 23
9747.910	55.4	V	-	-	AVG	2	1.3	Power Setting = 23
9747.910	57.8	V	-	-	PK	2	1.3	Power Setting = 23
12186.42	39.7	V	54.0	-14.3	AVG	22	1.2	Power Setting = 23
12186.42	50.2	V	74.0	-23.8	PK	22	1.2	Power Setting = 23
7311.680	46.5	H	54.0	-7.5	AVG	167	1.5	Power Setting = 23
7311.680	52.8	H	74.0	-21.3	PK	167	1.5	Power Setting = 23
9747.933	51.0	H	-	-	AVG	223	1.4	Power Setting = 23
9747.933	54.7	H	-	-	PK	223	1.4	Power Setting = 23
12185.53	39.7	H	54.0	-14.3	AVG	360	1.5	Power Setting = 23
12185.53	50.5	H	74.0	-23.5	PK	360	1.5	Power Setting = 23

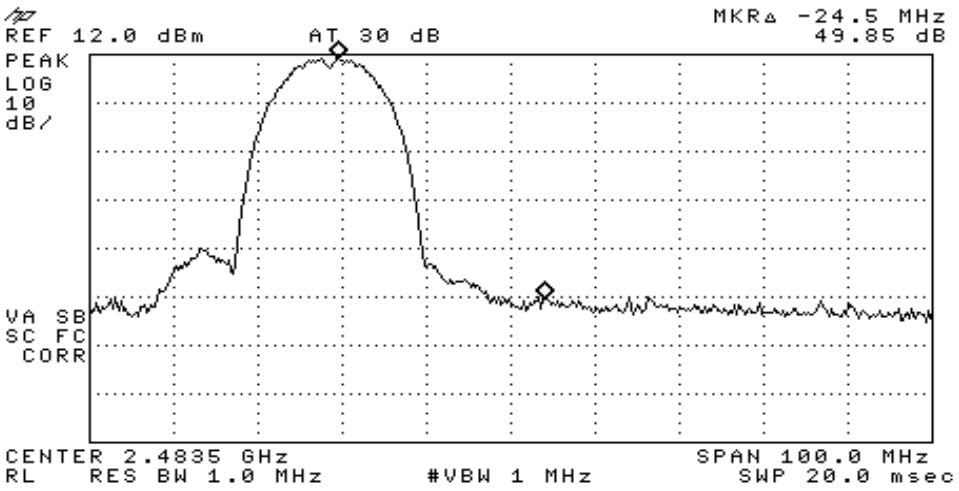
Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.

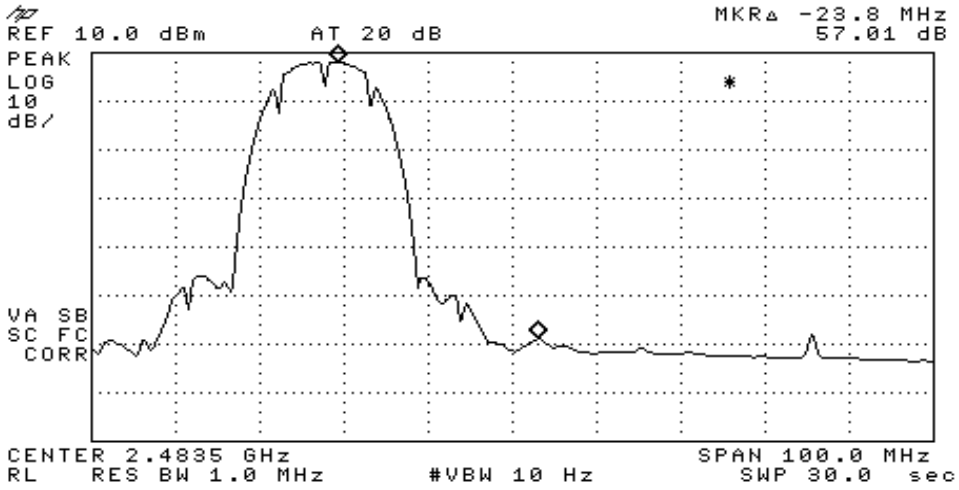
Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1c: Radiated Spurious Emissions, 30 - 12500 MHz. High Channel @ 2462 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2463.050	103.7	H	-	-	AVG	87	1.6	RB = 1MHz, VB = 10Hz
2463.050	107.1	H	-	-	PK	87	1.6	RB = VB = 1MHz
2460.850	102.6	V	-	-	AVG	235	1.0	RB = 1MHz, VB = 10Hz
2460.850	105.9	V	-	-	PK	235	1.0	RB = VB = 1MHz





Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Delta Marker - Peak	49.9 dB	Delta between highest in-band and highest restricted band level
Delta Marker - Average	57.0 dB	

Run #1c: continue

Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.490	57.3	V	74.0	-16.7	Peak	-	-	Power Setting 20
2484.490	46.7	V	54.0	-7.3	Average	-	-	Power Setting 20

Note 1:	Calculated by subtracting the marker delta values from the fundamental field strength measurements.

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4923.940	48.4	V	54.0	-5.6	AVG	137	1.8	Power Setting 20
4923.940	56.5	V	74.0	-17.6	PK	137	1.8	Power Setting 20
4923.993	49.6	H	54.0	-4.4	AVG	121	1.9	Power Setting 20
4923.993	56.4	H	74.0	-17.6	PK	121	1.9	Power Setting 20
7383.790	43.6	H	54.0	-10.4	AVG	169	1.5	Power Setting 20
7383.790	51.2	H	74.0	-22.8	PK	169	1.5	Power Setting 20
9847.955	44.4	H	-	-	AVG	21	1.3	Power Setting 20
9847.955	51.2	H	-	-	PK	21	1.3	Power Setting 20
12309.50	39.3	H	54.0	-14.7	AVG	239	1.0	Power Setting 20
12309.50	50.5	H	74.0	-23.5	PK	239	1.0	Power Setting 20
7386.710	40.6	V	54.0	-13.4	AVG	21	1.7	Power Setting 20
7386.710	49.3	V	74.0	-24.7	PK	21	1.7	Power Setting 20
9847.918	47.4	V	-	-	AVG	0	1.1	Power Setting 20
9847.918	53.0	V	-	-	PK	0	1.1	Power Setting 20
12308.55	39.3	V	54.0	-14.7	AVG	298	1.1	Power Setting 20
12308.55	49.8	V	74.0	-24.2	PK	298	1.1	Power Setting 20

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.

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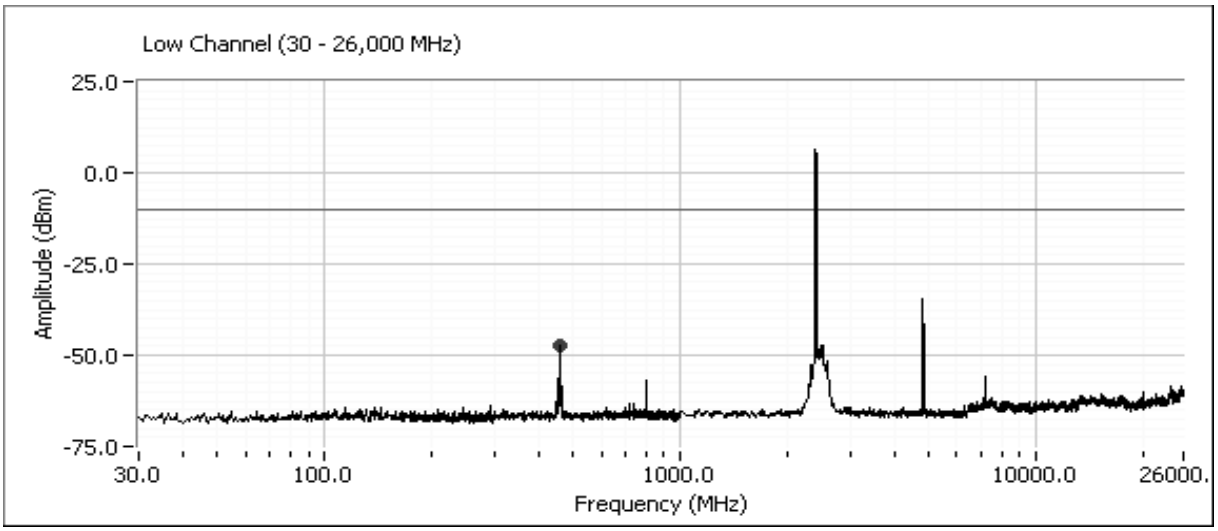
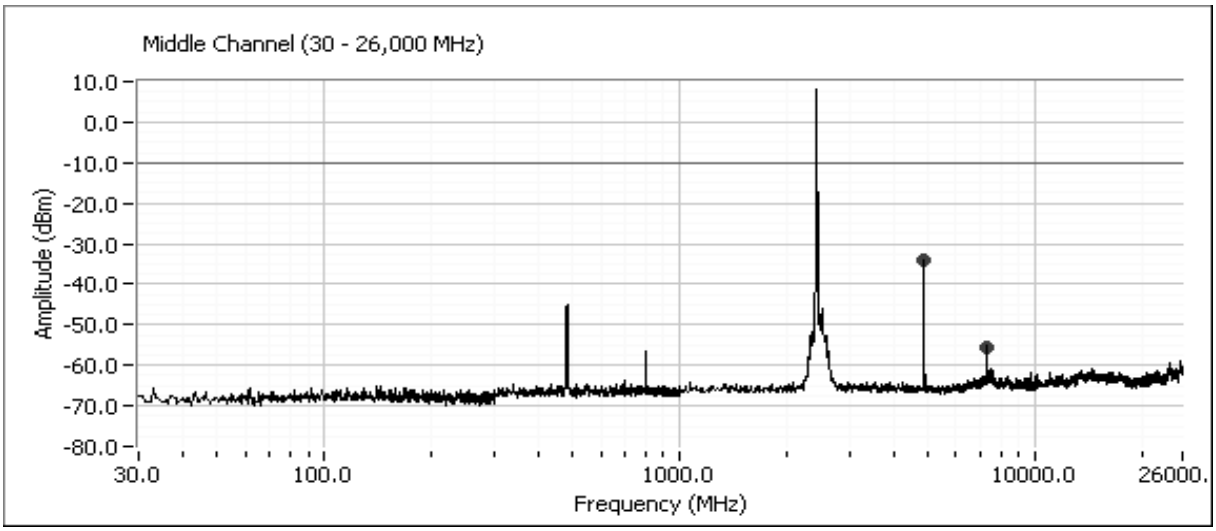
Spec:	EN55022	Class:	N/A

Run #1d: Antenna Conducted Spurious Emissions, 30 - 25000 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.

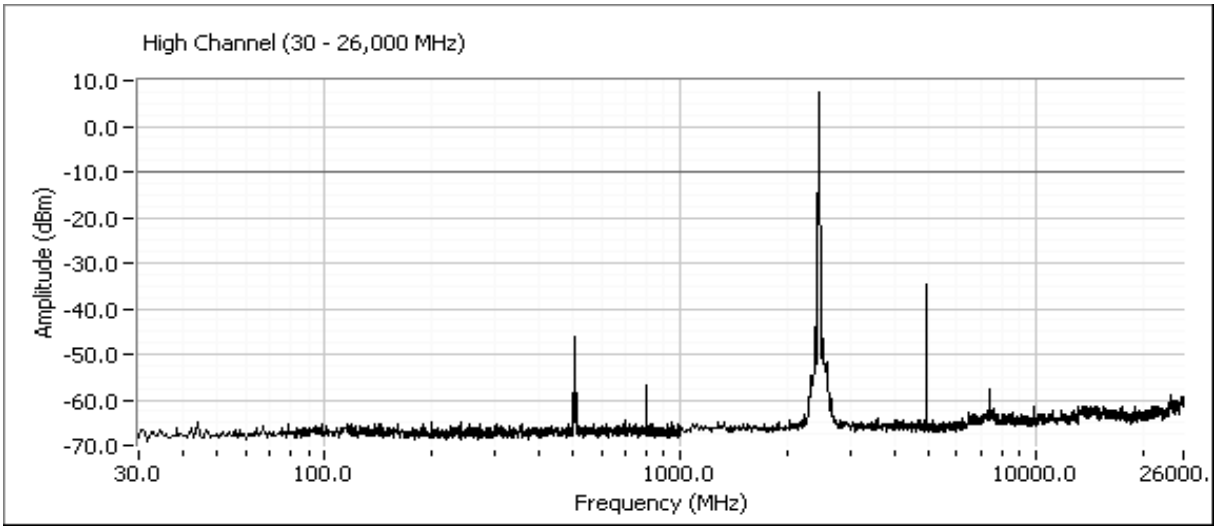




Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #1d: Antenna Conducted Spurious Emissions, 30 - 25000 MHz.

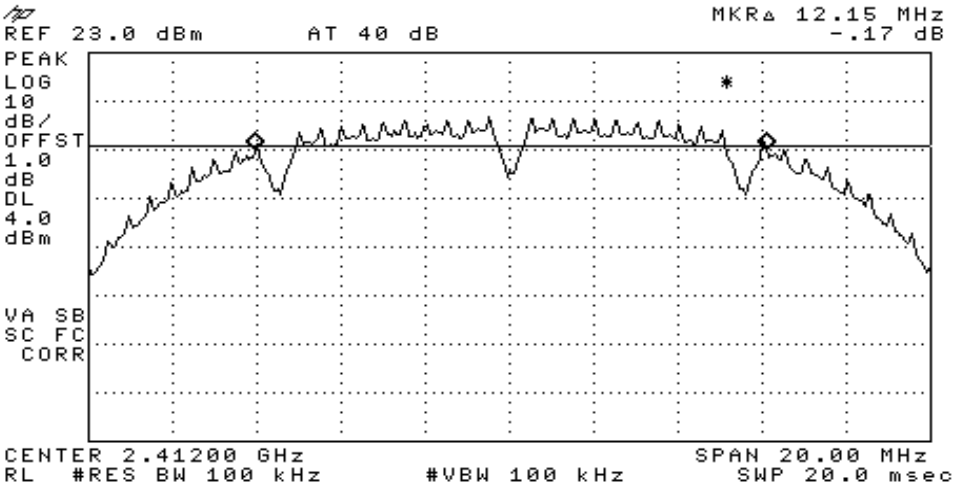
Refer to plots below. Scans made using RBW=VB=100 KHz with the limit line set at 20dB below the highest in-band signal level.

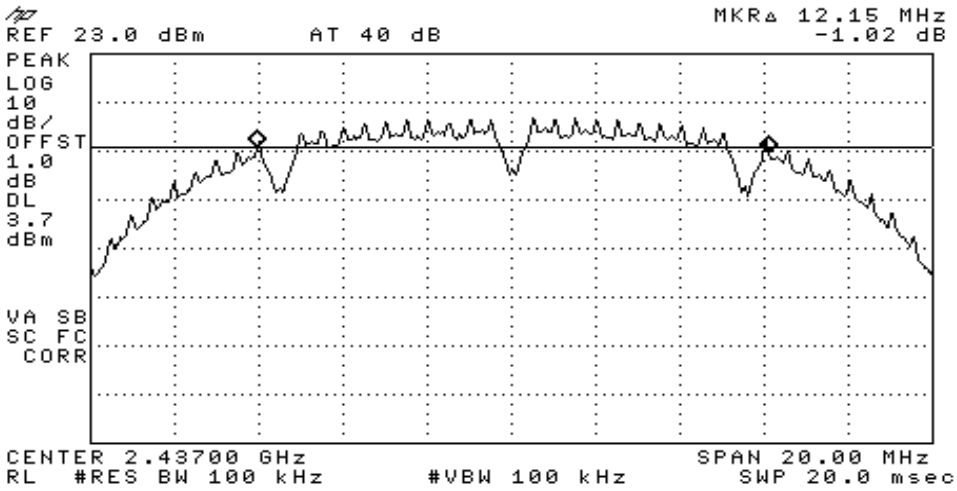


Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

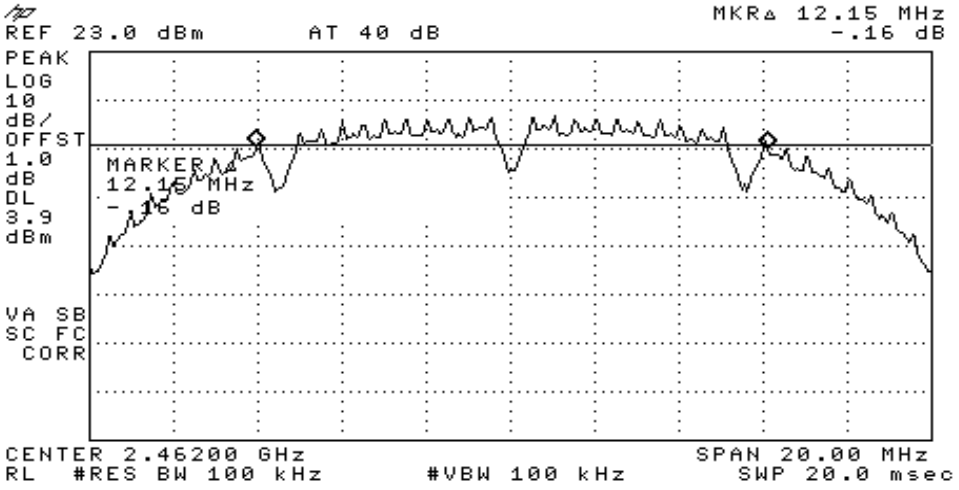
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	6dB Signal Bandwidth (MHz)	99% Signal Bandwidth (MHz)
20	2412	100kHz	12.15	15.5
20	2437	100kHz	12.15	15.6
20	2462	100kHz	12.15	15.5





Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A



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Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A

Run #3: Output Power

Maximum antenna gain: 2 dBi

Power Setting	Frequency (MHz)	Peak Output Power dBm	Peak Output Power W	EIRP W	Average Power Note 2 dBm	Average Power Note 2 W
20	2412	21.3	0.135	0.214	19.2	0.083
20	2437	19.9	0.098	0.156	19.1	0.083
20	2462	21.8	0.151	0.240	19.8	0.083

Note 1:	Output power measured using a peak power meter
Note 2:	Output power measured using an average power sensor - this value is for reference purposes only.

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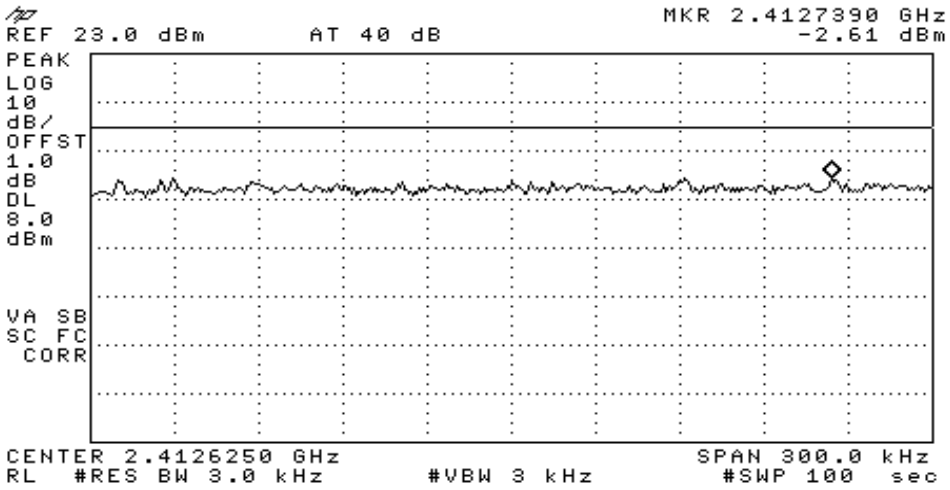
Spec:	EN55022	Class:	N/A

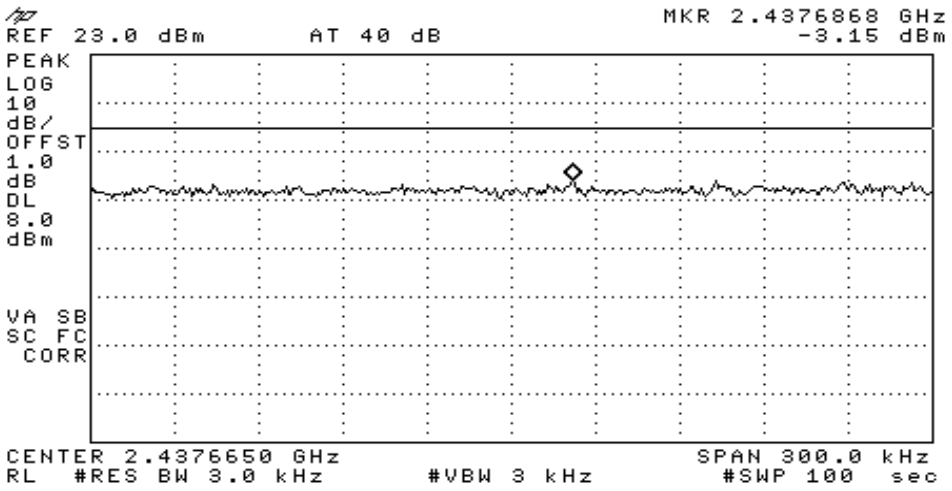
Run #4: Power Spectral Density

Power Setting	Operating Frequency (MHz)	Freq. @ PPSD	Res BW	P.S.D. (dBm/3kHz)
20	2412	2412.73	3kHz	-2.61
20	2437	2437.68	3kHz	-3.15
20	2462	2461.26	3kHz	-3.15

Note 1:	Freq. @ PPSD: Frequency of the Peak Power Spectral Density (PPSD)
Note 2:	Power spectral density measured using RB=3 kHz, VB=10kHz with a sweep time set to ensure a dwell time of at least 1 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal.



Client:	2Wire	Job Number:	J60845
Model:	RG3700HGV-00 and RG370HGV-00	T-Log Number:	T60846
		Account Manager:	Mark Hill
Contact:	Jeremy Muir		
Spec:	EN55022	Class:	N/A



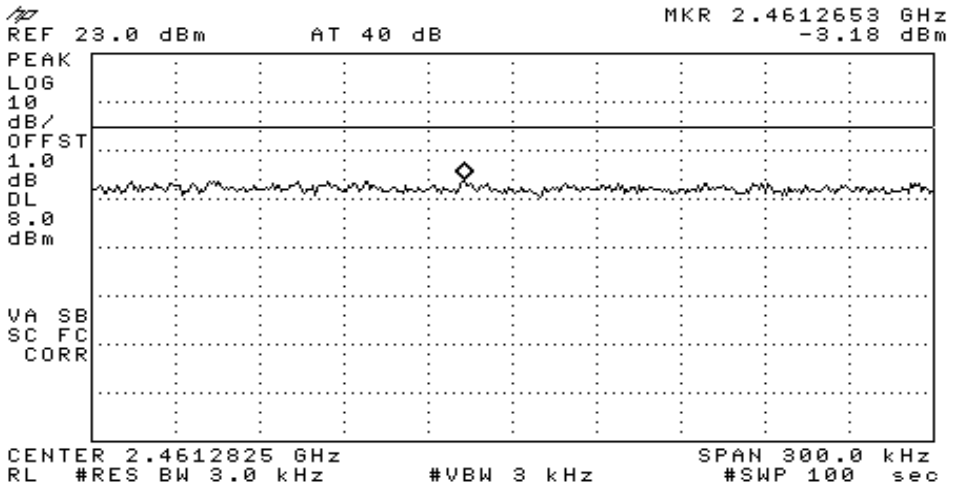


EXHIBIT 3: Test Configuration Photographs

Uploaded as separate attachment

EXHIBIT 4: Proposed FCC ID Label & Label Location

Uploaded as separate attachment

EXHIBIT 5: Detailed Photographs of 2Wire, Inc. Model RG3700HGV-00Construction

Uploaded as separate attachment

EXHIBIT 6: Operator's Manual for 2Wire, Inc. Model RG3700HGV-00

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EXHIBIT 7: Block Diagram of 2Wire, Inc. Model RG3700HGV-00

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EXHIBIT 8: Schematic Diagrams for 2Wire, Inc. Model RG3700HGV-00

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EXHIBIT 9: Theory of Operation for 2Wire, Inc. Model RG3700HGV-00

Uploaded as separate attachment

EXHIBIT 10: RF Exposure Information

Uploaded as separate attachment