






TEST REPORT FROM RADIO FREQUENCY INVESTIGATION LTD.

Test Of: IPWireless U.K. Ltd.
UE P1C Model: GY

To: FCC Part 15: 2001,
Part 21: 2001 & Part 74: 2001


Test Report Serial No:
RFI/MPTB1/RP44493JD01A

This Test Report Is Issued Under The Authority Of Richard Jacklin, Operations Director:  pp	Checked By:  pp
Tested By: 	Release Version No: PDF01
Issue Date: 26 March 2003	Test Dates: 20 February 2003 to 28 February 2003

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The results in this report apply only to the sample(s) tested.

Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, ENGLAND. Tel: +44 (0) 1256 851193 Fax: +44 (0) 1256 851192	Registered in England, No. 211 7901. Registered Office: Ewhurst Park, Ramsdell, Basingstoke, Hampshire RG26 5RQ	
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1. Client Information

Company Name:	IPWireless UK Ltd.
Address:	Units 3-6 Charlton Business Park Crudwell Road Malmesbury SN16 9RU
Contact Name:	Mr P Warburg

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2. Equipment Under Test (EUT)

The following information has been supplied by the client:

2.1. Identification Of Equipment Under Test (EUT)

Brand Name:	IPWireless Broadband Modem
Model Name or Number:	UE P1C
Unique Type Identification:	GY
Serial Number:	GY2A3A-000000511
Country of Manufacture:	UK
FCC ID Number:	PKTP1CGY
Date of Receipt:	19 February 2003

Brand Name:	Phihong
Model Name or Number:	Switching Power Supply
Unique Type Identification:	PSC05R-050
Serial Number:	None stated
Country of Manufacture:	China
Date of Receipt:	19 February 2003

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2.2. Description Of EUT

The equipment under test is a wireless broadband modem.

2.3. Modifications Incorporated In EUT

The EUT has not been modified from what is described by the Model Number and Unique Type Identification stated above.

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2.4. Additional Information Related To Testing

Power Supply Requirement:	Nominal 110V, 60 Hz, AC Mains Supply		
Intended Operating Environment:	Residential, Commercial, Light Industry		
Equipment Category:	Multipoint Distribution Service / Instructional Television Fixed Service Response Station		
Type of Unit:	Wireless Broadband Modem		
Weight:	125 g without battery		
Dimensions:	130 x 40 x 15 mm		
Interface Ports:	USB Port Mains 110 VAC Input Antenna Port		
Transmit Frequency Range	2.506 GHz to 2.680 GHz		
Transmit Channels Tested	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	N/A	2506
	Middle	N/A	2596
	Top	N/A	2680
Receive Frequency Range	2.506 GHz to 2.680 GHz		
Receive Channels Tested	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	N/A	2506
	Middle	N/A	2596
	Top	N/A	2680
Highest Fundamental Frequency	2680 MHz		
Highest Oscillator Frequency	2300 MHz		
Maximum Power Output (EIRP)	25.7 dBm		

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2.5. Support Equipment

The following support equipment was supplied by the applicant and used to exercise the EUT during testing:

Description:	Laptop PC
Brand Name:	Intel/CompUSA PC
Model Name or Number:	Ameri Note RL366C
Serial Number:	3882A452
Cable Length and Type	1 m USB cable
Connected to Port:	USB Port

Description:	AC Power Adaptor	
Brand Name:	LSE Li Shin International Enterprise Corp.	
Model Name or Number:	LSE9802A2050	
Serial Number:	993206426	
Cable Length and Type	2 m Mains Cable	2 m 3 Core
Connected to Port:	AC I/P	AC O/P

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3. Test Specification, Methods And Procedures

3.1. Test Specification

Reference:	FCC Part 74: 2001: Sections 74.935, 74.936 and 74.961
Title:	Code of Federal Regulations, Part 74 (47CFR) Subpart I Instructional Television Fixed Service
Comments:	None.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

Reference:	FCC Part 21: 2001 Sections 21.101, 21.904 and 21.908,
Title:	Code of Federal Regulations, Part 21 (47CFR) Subpart K Multipoint Distribution Service
Comments:	None.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

Reference:	FCC Part 15: 2001 Class B, Sections: 15.107 and 15.109
Title:	Code of Federal Regulations, Part 15 (47CFR) Radio Frequency Devices: Digital Devices.
Comments:	A description of the test facility used for this test is on file with, and has been accepted by, the Federal Communications Commission as required by Section 2.948 of Federal Rules.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

Reference:	FCC Part 2: 2001 Sections 2.1046, 2.1049, 2.1051, 2.1053 and 2.1055
Title:	Code of Federal Regulations, Part 2 (47CFR) Frequency allocations and radio treaty matters; General Rules and Regulations
Comments:	None.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

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3.2. Methods And Procedures

The methods and procedures used were as detailed in:

ANSI/TIA-603-B-2002

Land Mobile Communications Equipment, Measurements and performance Standards.

ANSI C63.2 (1996)

Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

ANSI C63.4 (2001)

Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1998)

Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)

Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16-1 (1999)

Title: Specification for radio disturbance and immunity measuring apparatus and methods. Part 1. Radio disturbance and immunity measuring apparatus.

3.3. Definition Of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the Methods & Procedures section above. Appendix 1 contains a list of the test equipment used.

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4. Deviations From The Test Specification

None

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5. Operation Of The EUT During Testing

5.1. Operating Modes

The EUT was tested in the following operating modes:

Transmitter Modes:

For all conducted antenna port tests, the EUT was transmitting at full power on bottom, middle and top channels on all 15 timeslots.

For radiated tests, the EUT was transmitting at full power on bottom, middle and top channels on 5 timeslots and receiving on 10 timeslots, i.e. normal operating conditions

Receiver Modes:

Testing was performed with the EUT receiving on all timeslots.

5.2. Configuration and Peripherals

The EUT was tested in the following configuration:

All tests were performed with an external AC adaptor connected to 110 VAC, 60 Hz, AC Mains supply, and the USB port connected to a laptop PC

Appendix 3 contains a schematic diagram of the test configuration.

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6. Summary Of Test Results

Transmit Mode

Range Of Measurements	Specification Reference	Mode of Operation	Port Type	Compliance Status
Effective Isotropic Radiated Power (EIRP)	Part 2.1046, Part 21.904 Part 74.935 of CFR 47: 2001	Transmit	Antenna	Complied
Frequency Stability (Temperature Variation)	Part 2.1055, Part 21.101 Part 74.961 of CFR 47: 2001	Transmit	Antenna Terminals	Complied
Frequency Stability (Voltage Variation)	Part 2.1055, Part 21.101 Part 74.961 of CFR 47: 2001	Transmit	Antenna Terminals	Complied
Occupied Bandwidth	Part 2.1049, Part 21.908 Part 74.936 of CFR 47: 2001	Transmit	Antenna Terminals	Complied
Conducted Emissions at Band Edges	Part 2.1051, Part 21.908 Part 74.936 of CFR 47: 2001	Transmit	Antenna Terminals	Complied
Conducted Emissions	Part 2.1051, Part 21.908 Part 74.936 of CFR 47: 2001	Transmit	Antenna Terminals	Complied
Radiated Spurious Emissions	Part 2.1053, Part 21.908 Part 74.936 of CFR 47: 2001	Transmit	Antenna	Complied
Radiated Emissions at Band Edges	Part 2.1053, Part 21.908 Part 74.936 of CFR 47: 2001	Transmit	Antenna	Complied

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Summary Of Test Results (Continued)**Receive Mode**

Range Of Measurements	Specification Reference	Mode of Operation	Port Type	Compliance Status
AC Conducted Spurious Emissions (150 kHz to 30 MHz)	Part 15 of CFR 47: 2001, Section 15.107	Receive/ Idle	AC Mains Input	Complied
Radiated Spurious Emissions (30 MHz to 1 GHz)	Part 15 of CFR 47: 2001, Section 15.109	Receive/ Idle	Enclosure	Complied
Radiated Spurious Emissions (1 GHz to 20 GHz)	Part 15 of CFR 47: 2001, Section 15.109	Receive/ Idle	Enclosure	Complied

6.1. Location Of Tests

All the measurements described in this report were performed at the premises of Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, England.

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7. Measurements, Examinations And Derived Results

7.1. General Comments

7.1.1. This section contains test results only. Details of the test methods and procedures can be found in Appendix 2 of this report.

7.1.2. Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to Section 8 for details of measurement uncertainties.

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7.2. Transmitter Carrier Output Power and Effective Isotropic Radiated Power (EIRP)

7.2.1. The EUT was configured as for conducted RF output power and Effective Isotropic Radiated Power (EIRP) as described in Appendix 2 of this report.

7.2.2. The effective isotropic radiated power (EIRP) was calculated by adding the manufacturer's declared antenna gain to the figure measured for conducted RF output power.

Results EIRP.

Channel	Measured Frequency (MHz)	Conducted RF O/P Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (dBW)	Limit EIRP (dBW)	Margin (dB)	Result
Bottom	2506.00	23.5	2.0	25.5	-4.5	15.2	19.7	Complied
Middle	2596.00	23.6	2.0	25.6	-4.4	15.2	19.6	Complied
Top	2680.00	23.7	2.0	25.7	-4.3	15.2	19.5	Complied

Note 1: It should be noted that EIRP has been calculated by adding the manufacturer's declared antenna gain to the measured conducted power. Thus the stated measurement uncertainty in section 8 of this report is for conducted measurement only.

Note 2: FCC Parts 21.904 and 74.935 state that the EIRP limit is 33.3 W (15.2 dBW) referenced to a 100 kHz bandwidth. The measurements were performed using a wideband power meter as stated in Appendix 2 of this report. Since the total EIRP is less than the power limit in a 100 kHz bandwidth further spectral analysis was not necessary.

Note 3: These results determine that the EUT output power falls in the "<6dBW per 6MHz channel" category of FCC Parts 21.908(d) and 74.936(f) with regard to out-of-band power.

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7.3. Transmitter Frequency Stability: (Temperature Variation)

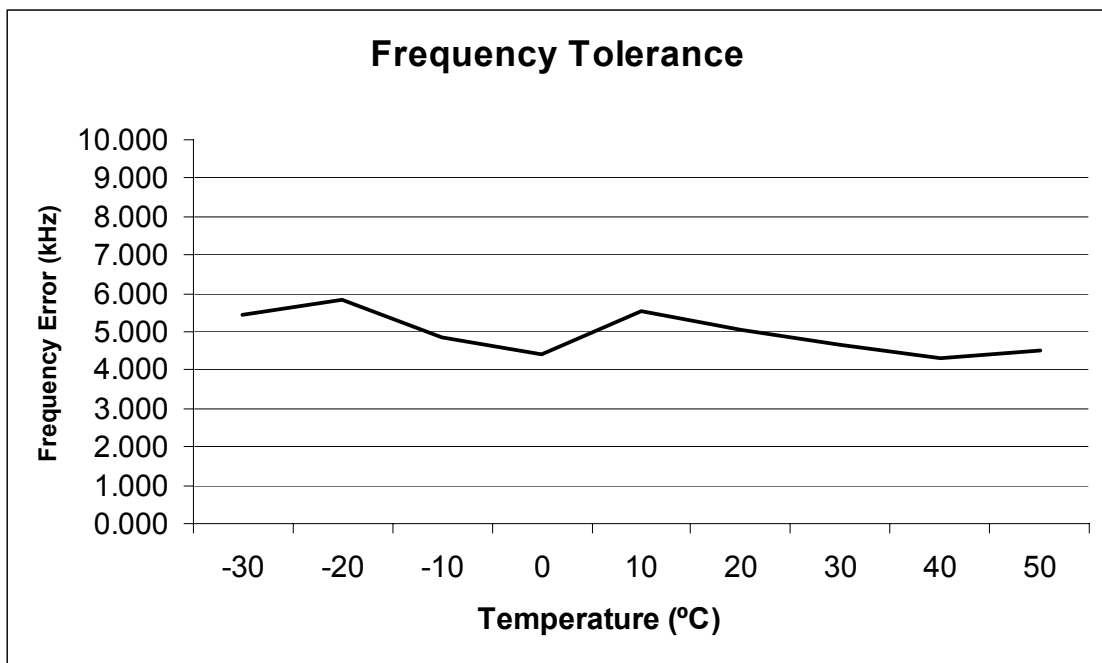
7.3.1. The EUT was configured as for frequency stability measurements as described in Appendix 2 of this report.

7.3.2. Tests were performed to identify the maximum frequency error of the EUT with variations in ambient temperature.

Results Bottom Channel (2506.00 MHz)

Temp (°C)	Measured Frequency (MHz)	Frequency Error (kHz)	Limit 0.001% (kHz)	Margin (kHz)	Result
-30	2506.005450	5.450	25.06	19.610	Complied
-20	2506.005820	5.820	25.06	19.240	Complied
-10	2506.004830	4.830	25.06	20.230	Complied
0	2506.004420	4.420	25.06	20.640	Complied
10	2506.005522	5.520	25.06	19.540	Complied
20	2506.005045	5.045	25.06	20.015	Complied
30	2506.004642	4.642	25.06	20.418	Complied
40	2506.004312	4.312	25.06	20.748	Complied
50	2506.004500	4.500	25.06	20.560	Complied

Frequency Variation From 2506.00 MHz



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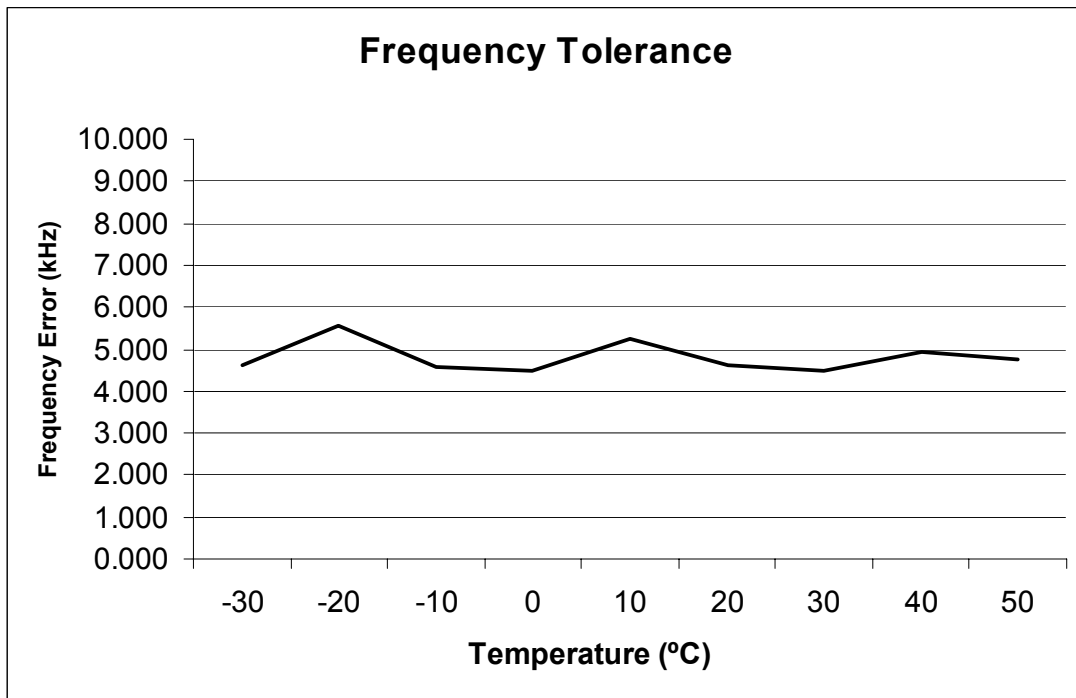
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Transmitter Frequency Stability: (Temperature Variation) (continued)

Results Middle Channel (2596.00 MHz)

Temp (°C)	Measured Frequency (MHz)	Frequency Error (kHz)	Limit 0.001% (kHz)	Margin (kHz)	Result
-30	2596.004640	4.640	25.96	21.320	Complied
-20	2596.005580	5.580	25.96	20.380	Complied
-10	2596.004560	4.560	25.96	21.400	Complied
0	2596.004480	4.480	25.96	21.480	Complied
10	2596.005225	5.225	25.96	20.735	Complied
20	2596.004599	4.599	25.96	21.361	Complied
30	2596.004482	4.482	25.96	21.478	Complied
40	2596.004912	4.912	25.96	21.048	Complied
50	2596.004760	4.760	25.96	21.200	Complied

Frequency Variation From 2596.00 MHz



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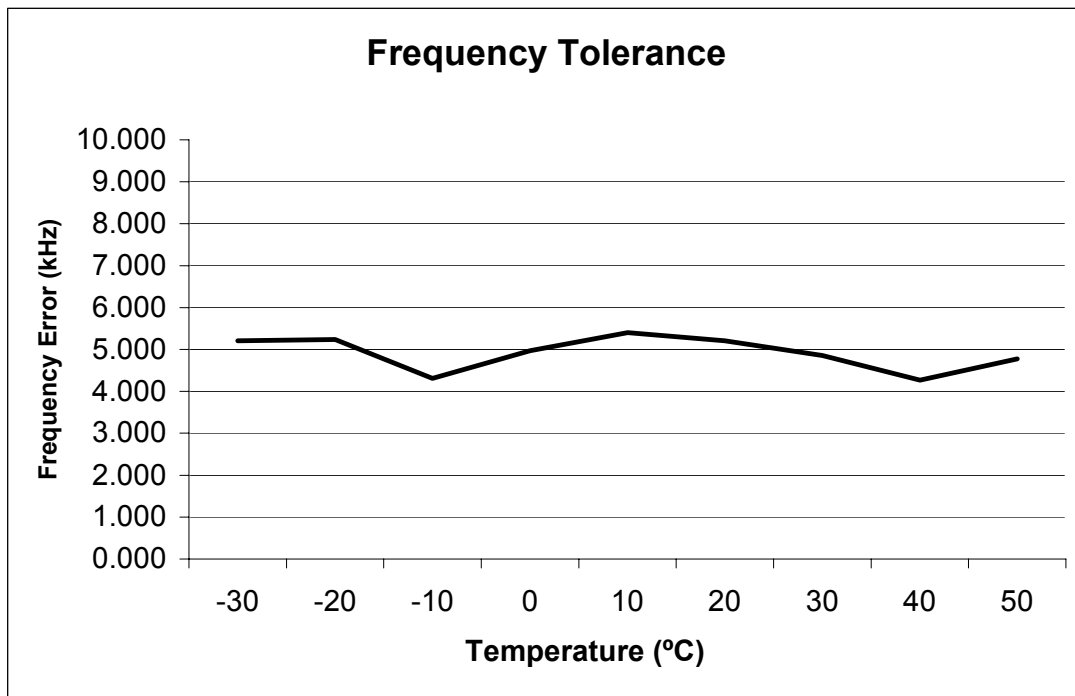
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Transmitter Frequency Stability: (Temperature Variation) (continued)

Results Top Channel (2680.00 MHz)

Temp (°C)	Measured Frequency (MHz)	Frequency Error (kHz)	Limit 0.001% (kHz)	Margin (kHz)	Result
-30	2680.005206	5.206	26.80	21.594	Complied
-20	2680.005240	5.240	26.80	21.560	Complied
-10	2680.004310	4.310	26.80	22.490	Complied
0	2680.004970	4.970	26.80	21.830	Complied
10	2680.005401	5.401	26.80	21.399	Complied
20	2680.005206	5.206	26.80	21.594	Complied
30	2680.004853	4.853	26.80	21.947	Complied
40	2680.004266	4.266	26.80	22.534	Complied
50	2680.004780	4.780	26.80	22.020	Complied

Frequency Variation From 2680.00 MHz



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7.4. Transmitter Frequency Stability: (Voltage Variation)

7.4.1. The EUT was configured as for frequency stability measurements as described in Appendix 2 of this report.

7.4.2. Tests were performed to identify the maximum frequency error of the EUT with variations in nominal operating voltage.

Results Bottom Channel (2506.00 MHz)

Supply Voltage (VAC 60 Hz)	Measured Frequency (MHz)	Frequency Error (kHz)	Limit 0.001% (kHz)	Margin (kHz)	Result
93.5	2506.003610	3.610	25.06	21.450	Complied
126.5	2506.004570	4.570	25.06	20.490	Complied

Results Middle Channel (2596.00 MHz)

Supply Voltage (VAC 60 Hz)	Measured Frequency (MHz)	Frequency Error (kHz)	Limit 0.001% (kHz)	Margin (kHz)	Result
93.5	2596.004870	4.870	25.96	21.090	Complied
126.5	2596.004364	4.364	25.96	21.596	Complied

Results Top Channel (2680.00 MHz)

Supply Voltage (VAC 60 Hz)	Measured Frequency (MHz)	Frequency Error (kHz)	Limit 0.001% (kHz)	Margin (kHz)	Result
93.5	2680.004540	4.540	26.80	22.26	Complied
126.5	2680.004190	4.190	26.80	22.61	Complied

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7.5. Transmitter Occupied Bandwidth

7.5.1. The EUT was configured as for Occupied Bandwidth measurements as described in Appendix 2 of this report.

7.5.2. Tests were performed to identify the maximum bandwidth occupied by the fundamental frequency of the EUT.

Results:

Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (MHz)
Bottom	2506.00	200	1000	8.219
Middle	2596.00	200	1000	8.173
Top	2680.00	200	1000	8.173

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7.6. Transmitter Spectrum Mask

7.6.1. The EUT was configured as for Spectrum Mask measurements as described in Appendix 2 of this report.

7.6.2. Tests were performed to determine compliance with the out-of band power requirements at frequencies adjacent to the channel occupied by the fundamental frequency of the EUT.

Results:

Results are presented graphically in Appendix 4, graphs GPH\44493JD01\053, GPH\44493JD01\054 and GPH\44493JD01\055 indicating compliance with the out-of band power requirements within the frequency bands defined by the nominal channel frequency +/- 9 MHz.

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7.7. Transmitter Conducted Emissions at Band Edges

7.7.1. The EUT was configured as for conducted emissions measurements as described in Appendix 2 of this report.

7.7.2. Tests were performed to identify the maximum emissions level at the edges of the 2500 – 2686 MHz frequency band that the EUT will operate over.

Results:**Bottom Band Edge**

Frequency (MHz)	Peak Emission Level (dBm)	Carrier Level (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2498.737	-37.4	23.5	60.9	50.0	10.9	Complied

Top Band Edge

Frequency (MHz)	Peak Emission Level (dBm)	Carrier Level (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2691.047	-45.7	23.7	69.4	56.5	12.9	Complied

Note: The limit is calculated according to FCC Section 21.908(e) for absolute power measurements ($A + 10\log(C_{BW}/R_{BW})$) where $C_{BW} = 12$ MHz and $R_{BW} = 100$ kHz).

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7.8. Transmitter Conducted Emissions

7.8.1. The EUT was configured as for conducted emissions measurements as described in Appendix 2 of this report.

7.8.2. Tests were performed to identify the maximum transmitter conducted emission levels.

Result: Bottom Channel

Frequency (MHz)	Peak Emission Level (dBm)	Carrier Level (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
5015.759	-32.2	23.5	57.7	46.3	11.4	Complied
12541.002	-30.7	23.5	56.2	46.3	9.9	Complied

Result: Middle Channel

Frequency (MHz)	Peak Emission Level (dBm)	Carrier Level (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
5195.840	-30.4	23.6	54.0	46.4	7.6	Complied
12990.621	-48.9	23.6	72.5	46.4	26.1	Complied

Result: Top Channel

Frequency (MHz)	Peak Emission Level (dBm)	Carrier Level (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
5355.960	-28.8	23.7	52.5	46.5	6.0	Complied

Note: The limit is calculated according to FCC Section 21.908(e) for absolute power measurements ($A + 10\log(C_{BW}/R_{BW})$) where $C_{BW} = 12$ MHz and $R_{BW} = 1$ MHz).

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7.9. Transmitter Radiated Emissions

7.9.1. The EUT was configured as for transmitter radiated emissions testing as described in Appendix 2 of this report.

7.9.2. Tests were performed to identify the maximum transmitter radiated emission levels.

Results:- Bottom Channel

Frequency (MHz)	Spurious Emission (dBm)	Carrier EIRP (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2581.180	-25.0	25.5	50.5	46.3	4.2	Complied
5015.781	-38.0	25.5	63.5	46.3	17.2	Complied
7524.486	-32.7	25.5	58.2	46.3	11.9	Complied
10016.345	-32.5	25.5	58.0	46.3	11.7	Complied

Results:- Middle Channel

Frequency (MHz)	Spurious Emission (dBm)	Carrier EIRP (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2672.803	-30.6	25.6	56.2	46.4	9.8	Complied
5195.829	-37.0	25.6	62.6	46.4	16.2	Complied
7794.620	-44.0	25.6	69.6	46.4	23.2	Complied
10391.705	-38.2	25.6	63.8	46.4	25.2	Complied

Results:- Top Channel

Frequency (MHz)	Spurious Emission (dBm)	Carrier EIRP (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2755.208	-34.3	25.7	60.0	46.5	13.5	Complied
5363.977	-28.2	25.7	53.9	46.5	7.4	Complied
8047.031	-40.2	25.7	65.9	46.5	19.4	Complied
10727.885	-37.9	25.7	63.6	46.5	17.1	Complied

Note: The limit is calculated according to FCC Section 21.908(e) for absolute power measurements ($A + 10\log(C_{BW}/R_{BW})$) where $C_{BW} = 12$ MHz and $R_{BW} = 1$ MHz).

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7.10. Transmitter Radiated Emissions At Band Edges

7.10.1. The EUT was configured as for transmitter radiated emissions testing described in Appendix 2 of this report.

7.10.2. Tests were performed to identify the maximum emissions level at the edges of the 2500 – 2686 MHz frequency band that the EUT will operate over.

Results:**Bottom Band Edge**

Frequency (MHz)	Spurious Emission (dBm)	Carrier EIRP (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2498.712	-21.1	25.5	46.6	40.1	6.5	Complied

Top Band Edge

Frequency (MHz)	Spurious Emission (dBm)	Carrier EIRP (dBm)	Spurious Emission (dBc)	Limit (dBc)	Margin (dB)	Result
2690.105	-35.9	25.7	61.6	46.5	15.1	Complied

Note: The limit is calculated according to FCC Section 21.908(e) for absolute power measurements ($A + 10\log(C_{BW}/R_{BW})$ where $C_{BW} = 12$ MHz and $R_{BW} = 1$ MHz).

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7.11. Receive AC Conducted Spurious Emissions

7.11.1. The EUT was configured as for AC conducted emissions measurements as described in Appendix 2 of this report.

7.11.2. Tests were performed to identify the maximum emissions levels on the AC mains line of the EUT.

Results: Quasi-Peak Detector Measurements On Live And Neutral Lines

Frequency (MHz)	Line	Q-P Level (dB μ V)	Q-P Limit (dB μ V)	Margin (dB)	Result
0.16385	Live	45.07	65.27	20.20	Complied
0.55849	Neutral	38.62	56.00	17.38	Complied
7.90145	Live	30.06	60.00	29.94	Complied

Results: Average Detector Measurements On Live And Neutral Lines

Frequency (MHz)	Line	Av. Level (dB μ V)	Av. Limit (dB μ V)	Margin (dB)	Result
0.16385	Live	33.06	55.27	22.21	Complied
0.55849	Neutral	32.75	46.00	13.25	Complied
7.90145	Neutral	23.76	50.00	26.24	Complied

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7.12. Receiver Radiated Emission - 30 MHz to 1.0 GHz

7.12.1. The EUT was configured as for receiver-radiated emissions testing as described in Appendix 2 of this report.

7.12.2. Tests were performed to identify the maximum receiver or standby radiated emissions levels.

Results:

Frequency (MHz)	Ant. Pol.	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
47.31	Vertical	34.3	40.0	5.7	Complied
71.72	Vertical	33.6	40.0	6.4	Complied
85.20	Vertical	29.8	40.0	10.2	Complied
125.19	Vertical	31.9	43.5	11.6	Complied

Test Of: IPWireless U.K. Ltd.

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7.13. Receiver Radiated Emission – 1 GHz to 20 GHz

7.13.1. The EUT was configured as for receiver radiated emissions testing as described in Appendix 2 of this report.

7.13.2. Tests were performed to identify the maximum receiver or standby radiated emissions levels.

Results:**Highest Average Level:**

Frequency (MHz)	Antenna Polarity (H/V)	Average Detector level (dB μ V)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Average Margin (dB)	Result
2262.267	Vertical	17.4	20.6	1.4	39.4	54.0	14.6	Complied

Highest Peak Level:

Frequency (MHz)	Antenna Polarity (H/V)	Peak Detector level (dB μ V)	Antenna factor (dB)	Cable loss (dB)	Actual Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Peak Margin (dB)	Result
2262.267	Vertical	28.8	20.6	1.4	50.8	74.0	23.2	Complied

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8. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level	Calculated Uncertainty
Carrier Output Power	Not applicable	95%	+/- 0.46 dB
Frequency Stability	Not applicable	95%	+/- 20 Hz
Occupied Bandwidth	Not applicable	95%	+/- 0.12 %
Conducted Emissions	9 kHz to 26 GHz	95%	+/- 1.2 dB
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	+/- 5.26 dB
Radiated Spurious Emissions	1 GHz to 26 GHz	95%	+/- 1.78 dB
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	+/- 3.25 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

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Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.
A003	ESH3-Z2 Pulse Limiter	Rohde & Schwarz	ESH3-Z2	357 881/052
A028	Horn Antenna	Eaton	91888-2	304
A031	2 to 4 GHz Eaton Horn Antenna	Eaton	91889-2	557
A067	LISN	Rohde & Schwarz	ESH3-Z5	890603/002
A075	High Power Attenuator 20 dB 150W	Narda	769-20	02878
A090	Narda Step Attenuator 0-60 dB	Narda	743-60	01057
A1037	Chase Bilog Antenna	Chase EMC Ltd	CBL6112B	2413
A145	10 dB Attenuator	Narda	NONE	NONE
A197	Site 2 Controller SC144	Unknown	SC144	150720
A256	WG 18 Microwave Horn	Flann Microwave	18240-20	400
A258	Zenith Variable Power Supply	Zenith Electric	SVA 10	None
A276	OATS Positioning Controller	Rohde & Schwarz	HCC	
A427	WG 14 horn	Flann	14240-20	150
A428	WG 12 horn	Flann	12240-20	134
A429	WG 16 horn	Flann	16240-20	561
A436	WG 20 horn	Flann	20240-20	330
A490	Bilog Antenna	Chase	CBL6111A	1590
A532	RHT & Barometer	RS Components	216-935	N/A
C1078	Rosenberger 3 m Cable	Rosenberger	FA210A1030M5050	28464-2
C1079	Rosenberger 1 m Cable	Rosenberger	FA210A1010M5050	28462-1
C1082	Rosenberger Cable 2 m	Rosenberger	FA210A1020M5050	28463-1
C160	Cables	Rosenberger	UFA210A-1-1181- 70x70	None
C202	Rosenberger cable	Rosenberger	UFA 210A-1-1180- 70X70	1543
C342	Cable	Andrews	None	None
C344	Cable	Rosenberger	UFA210A-1-1181- 70x70	1934
C363	BNC Cable	Rosenberger	RG142	None

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Test Equipment Used (Continued)

RFI No.	Instrument	Manufacturer	Type No.	Serial No.
C457	Cable	Rosenberger	RG142XX-002-RFIB	C457-10081998
C461	Cable	Rosenberger	UFA210A-1-1182-704704	98H0305
E009	Environmental Chamber	Thermotron Corporation	S-8-E Mini Max	25-2407-0
G013	SMHU Signal Generator	Rohde & Schwarz	SMHU	894 055/003
G046	Signal Generator	Gigatronics	7100/.01-20	749474
L0670	EMI Test Receiver – 20 Hz to 26.5 GHz.	Rohde and Schwarz	ESI	100046
M072	FSM Spectrum Analyser	Rohde & Schwarz	FSM	862 967/010 (RF) & 863 912/048 (Display)
M084	NRVS Power Meter	Rohde & Schwarz	NRVS	864268/006
M088	Receiver / Spectrum Analyser System	Rohde & Schwarz	ESBI	DU:835862/018 RU:835387/006
M090	Receiver / Spectrum Analyser System	Rohde & Schwarz	ESBI	DU:838494/005 RU:836833/001
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016
M134	Temperature/Humidity/Pressure Meter	RS Components	None	None
M139	Digital Multimeter	Fluke	11	65830028
M173	Turntable Controller	R.H.Electrical Services	RH351	3510020
M198	Thermal Power Sensor	Rohde & Schwarz	NRV-Z52	827 191/003
S201	Site 1	RFI	1	
S202	Site 2	RFI	2	
S209	Site 9	RFI	9	
S212	Site 12	RFI	12	
S216	Site 16	RFI	16	None

NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

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Appendix 2. Measurement Methods

A2.1 Conducted Output Power

There is no conducted power limit specified in FCC Parts 21 and 74 for this test, it has been recorded as a requirement of FCC Part 2.1046, as such, no compliancy statement has been made for this test.

The Levels obtained are also used in conjunction with spurious attenuation measurements where the results are based on the conducted carrier power (P).

The test was performed in an indoor laboratory environment.

The EUT was connected to a power meter with an average power head, cable, and RF attenuators.

The connection was made to the EUT antenna port.

The total loss of the cables & attenuators were measured and entered as a reference level offset into the power meter to correct for the losses.

The EUT was set to a specified channel and the transmitter set to operate at full power.

This test was carried out on the bottom, middle and top channels.

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A2.2 Effective Isotropic Radiated Power (EIRP)

In order to obtain an EIRP measurement the manufacturer's declared antenna gain was added to the measured conducted output power.

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A2.3 Frequency Stability

The test was performed in a laboratory environment.

The EUT was situated within an environmental test chamber and connected via cables and attenuator(s) to the spectrum analyser.

Measurements were performed with the EUT operating under extremes of temperature in 10 degree increments within the range -30 to 50 Deg C.

Measurements were also performed at voltage extremes as stated in the specification.

The requirement was to determine the frequency stability of the device under specified environmental operating conditions.

Measurements were made on the top, middle and bottom channels using the spectrum analyser.

The EUT was switched off for a minimum of 30 minutes between each stage of testing while the environmental chamber stabilised at the next temperature within the stated temperature range.

Once the environmental chamber had reached thermal equilibrium, the nominal frequency of the EUT was measured and recorded. The recorded frequency was compared to the requirements of the specification.

In order to show compliance, the EUT must remain maintain a frequency tolerance not exceeding 0.005% according to Section 21.101 and 0.001% according to Section 74.961.

The reported data shows the nominal frequency drift and its margin from the declared frequency. If this margin is positive, the result is compliant. If it is negative, the result is non-compliant. There is also a frequency chart presented offering the frequency variation around nominal.

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A2.4 Occupied Bandwidth

The test was performed in a laboratory environment.

The EUT was connected to a spectrum analyser at its antenna port.

Measurements were performed to determine the occupied bandwidth in accordance with FCC Part 2.1049. The occupied bandwidth was measured from the fundamental emission at the bottom, middle and top channels.

The EUT is a Broadband Wireless Modem; therefore no modulation input port was available. The occupied bandwidth was measured with the EUT transmitting on all timeslots and using normal modulation.

The occupied bandwidth was measured using the built in occupied bandwidth function of the Rohde and Schwarz ESI spectrum analyser. It was set to measure the bandwidth where 99% of the signal power was contained. The analyser settings were set as per those outlined in the ESI user manual for this measurement, i.e., RBW \leq 1/20 of occupied bandwidth. A value of 200 kHz was used.

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A2.5 Conducted Emissions Measurements

The test was performed in a laboratory environment.

Spurious emission measurements at the antenna port were performed from the lowest declared frequency to 10 times the highest EUT fundamental frequency as shown in Section 2.4 of this report, rounded up for convenience.

A spectrum analyser was connected to the antenna port of the EUT via a suitable cable and RF attenuator. The total loss of both the cable and the attenuator were measured and entered as a reference level offset into the measuring receiver to correct for the losses.

The frequency band described above was investigated with the transmitter operating at full power on the bottom, middle and top channels. Any spurious emissions noted were then measured.

The recorded emission level was then calculated as a spurious attenuation level using the following formula as described in TIA_EIA_603A.

$$\text{dB} = 10 \log_{10} \left(\frac{\text{TX power in watts}}{0.001} \right) - \text{spurious level (dBm)}$$

For frequencies further than 3MHz from the applicable channel edge the emissions shall be attenuated by at least $43 + 10 \log(P)$ dB below the transmitter power (P), where (P) is the average 6 MHz channel transmitter output power level measured for the channel under test. Since the transmitter output power was measured as an absolute level using a power meter the attenuation limit was adjusted according to FCC Section 21.908(e) for absolute power measurements $(A + 10 \log(C_{\text{BW}}/R_{\text{BW}}))$ where $C_{\text{BW}} = 12$ MHz and $R_{\text{BW}} =$ bandwidth for the emissions measurement, 100 kHz or 1MHz).

The tabulated results in the results section of this report show the spurious emission in dBm and as attenuation relative to the carrier in dBc.

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Conducted Emissions Measurements (Continued)

For the frequency ranges close to and including the fundamental frequency, plots of the spectral distribution were recorded using a spectrum analyser for the EUT transmitting on bottom, middle & top channels. Plots can be found at Appendix 4. The method is in accordance with the relative power measurement method from FCC Part 21.908(e). A resolution bandwidth of 100 kHz was used throughout thus no bandwidth adjustment was required to the limits.

FCC Part 21.908(d) states that the maximum out-of-band power of an MDS response station using all or part of a 6 MHz channel, employing digital modulation and transmitting with an EIRP no greater than -6 dBW per 6 MHz channel shall be attenuated at the channel edges at least 25 dB relative to the average 6 MHz channel transmitter output power level (P), then attenuated along a linear slope to at least 40 dB or $33+10\log(P)$ dB, whichever is the lesser attenuation, at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB or $43+10\log(P)$ dB, whichever is the lesser attenuation, at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB or $43+40\log(P)$ dB, whichever is the lesser attenuation, at all other frequencies.

The test equipment settings for conducted antenna port measurements were as follows:

Receiver Function	Settings
Detector Type:	Average
Mode:	Max Hold
Bandwidth:	1 MHz >1GHz
Bandwidth:	10 kHz <1GHz
Amplitude Range:	100 dB
Step Size:	Continuous sweep
Sweep Time:	Coupled

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A2.6 FCC Part 15: AC Mains Conducted Emissions

The test was performed in a laboratory environment.

AC mains conducted emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

The test was performed in a shielded enclosure with the equipment arranged as detailed in the standard on a wooden bench using the floor of the screened enclosure as the ground reference plane.

Initial measurements in the form of swept scans covering the entire measurement band were performed in order to identify frequencies on which the EUT was generating interference. In order to minimise the time taken for these swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidths (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

During the swept measurements (and also during subsequent final measurements on single frequencies) any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT.

Following the initial scans, a graph was produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested (at individual frequencies) using the appropriate detector function.

The test equipment settings for conducted emissions measurements were as follows:

Receiver Function	Initial Scan	Final Measurements
Detector Type:	Peak	Quasi-Peak (CISPR)/Average
Mode:	Max Hold	Not applicable
Bandwidth:	10 kHz*	9 kHz*
Amplitude Range:	60 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

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A2.7 Transmitter Radiated Emissions

Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Initial pre-scans covering the entire measurement band from the lowest generated frequency declared up to 10 times the highest fundamental frequency stated in Section 2.5 of this report (rounded up for convenience) were performed within a screened chamber below 4 GHz and on an open area test site above 4 GHz in order to identify frequencies on which the EUT was generating interference. This determined the frequencies from the EUT that required further examination. Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT.

The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m, below 4 GHz; above 4 GHz a 1 m measurement distance was used. A limit line was set to the specification limit. Levels within 20 dB of this limit were measured where possible, on occasion; the receiver noise floor came within the 20 dB boundary. On these occasions, the system noise floor may have been recorded.

An open area test site using the appropriate test distance and spectrum analyser with an average detector was used for final measurements.

On the open area test site, at each frequency where a signal was found, the levels were maximised by initially rotating the turntable through 360° and then varying the antenna height between 1 m and 4 m in the horizontal polarisation. At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT. The procedure was repeated for the vertical polarisation.

Once the final amplitude (maximised) had been obtained and noted, the EUT was replaced by a substitution antenna, and a substitution method applied.

The substitution antennas used were a horn antenna for measurements greater than or equal to 1 GHz and a dipole for measurements below 1 GHz.

The centre of the substitution antenna was set to approximately the same centre location as the EUT. The substitution antenna was set to the horizontal polarity. The substitution antenna was then connected to and fed by a signal generator tuned to the EUT's frequency under test.

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Transmitter Radiated Emissions (Continued)

The test antenna was then raised and lowered to obtain a maximum reading on the spectrum analyser. The level of the signal generator output was then adjusted until the previously recorded maximum level for this set of conditions was obtained. This procedure was repeated with both antennas vertically polarised. The EIRP was then taken as:-

$$\text{EIRP} = \text{Signal Generator Level} - \text{Cable Loss} + \text{Antenna Gain}$$

Once the EIRP was obtained, the difference between it and the level of the fundamental emission for the EIRP of the channel under test was noted at the spurious attenuation level in dBc. The following formula was used as described in TIA_EIA_603B

$$\text{dB} = 10 \log_{10} \left(\frac{\text{TX power in watts}}{0.001} \right) - \text{spurious level (dBm)}$$

The limit stated in the standard states that emissions shall be attenuated by at least $43 + 10 \log(P)$ dB below the transmitter power (P), where (P) is the average 6 MHz channel transmitter output power level for the channel under test.

The tabulated results in the result section of this report show the spurious emission in dBm and as attenuation relative to the carrier in dBc.

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A2.8 Receiver Radiated Emissions

Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Initial pre-scans covering the entire measurement band from the lowest generated frequency declared up to 5 times the highest clock frequency stated in section 2.5 of this report (rounded up for convenience) were performed within a screened chamber below 4 GHz and on an open area test site above 4 GHz generating interference. This determined the frequencies from the EUT that required further examination. In order to minimise the time taken for the swept measurements, a peak detector was used in conjunction with the appropriate detector measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT.

The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m, below 4 GHz; above 4 GHz a 1 m measurement distance was used. A limit line was set to the specification limit. Levels within 20 dB of this limit were measured where possible, on occasion; the receiver noise floor came within the 20 dB boundary. On these occasions, the system noise floor may have been recorded.

An open area test site using the appropriate test distance and measuring receiver with a Quasi-Peak detector was used for measurements below 1000 MHz, for measurements above 1000 MHz average and peak detectors were used.

For the final measurements the EUT was arranged on a non-conducting turntable on a standard test site compliant with ANSI C63.4 – 2001 Clause 5.4.

On the open area test site, at each frequency where a signal was found, the levels were maximised by initially rotating the turntable through 360° and then varying the antenna height between 1 m and 4 m in the horizontal polarisation. At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT. The procedure was repeated for the vertical polarisation. Final measurements were taken at a 10 m measurement distance.

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Receiver Radiated Emissions (Continued)

The final field strength was determined as the indicated level in dBuV plus cable loss and antenna factor.

The test equipment settings for radiated emissions measurements were as follows:

Receiver Function	Initial Scan	Final Measurements Below 1 GHz	Final Measurements Above 1 GHz
Detector Type:	Peak	Quasi-Peak (CISPR)	Peak/Average
Mode:	Max Hold	Not applicable	Not applicable
Bandwidth:	(120 kHz < 1 GHz) (1 MHz > 1 GHz)	120 kHz	1 MHz (If Applicable)
Amplitude Range:	60 dB	20 dB	20 dB (typical)
Step Size:	Continuous sweep	Not applicable	Not applicable
Sweep Time:	Coupled	Not applicable	Not applicable

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Appendix 3. Test Configuration Drawings

This Appendix contains the following drawings:

Drawing Reference Number	Title
DRG\44493JD01\EMICON	Test configuration for measurement of conducted emissions
DRG\44493JD01\EMIRAD	Test configuration for measurement of radiated emissions
DRG\44493JD01\001	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test

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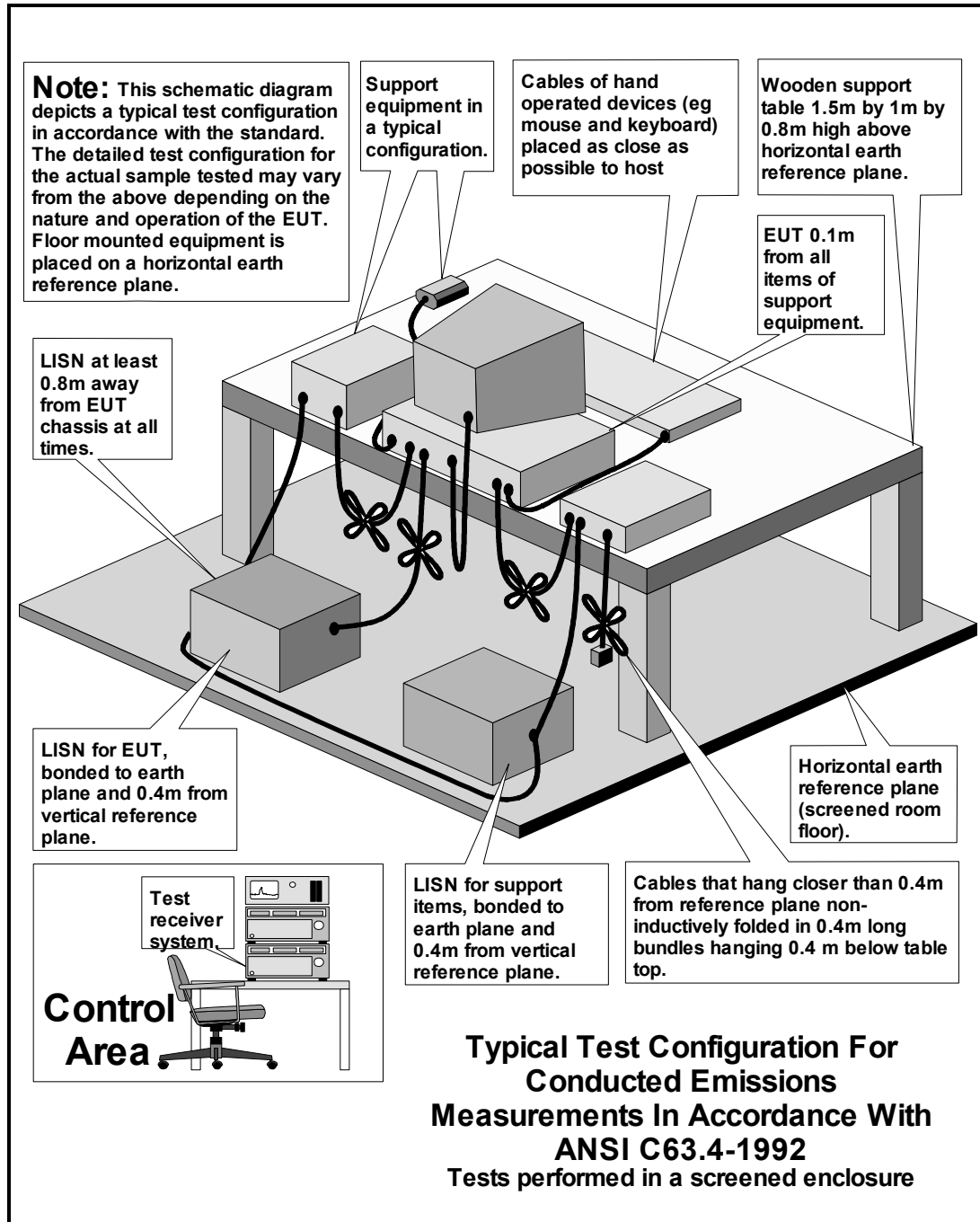
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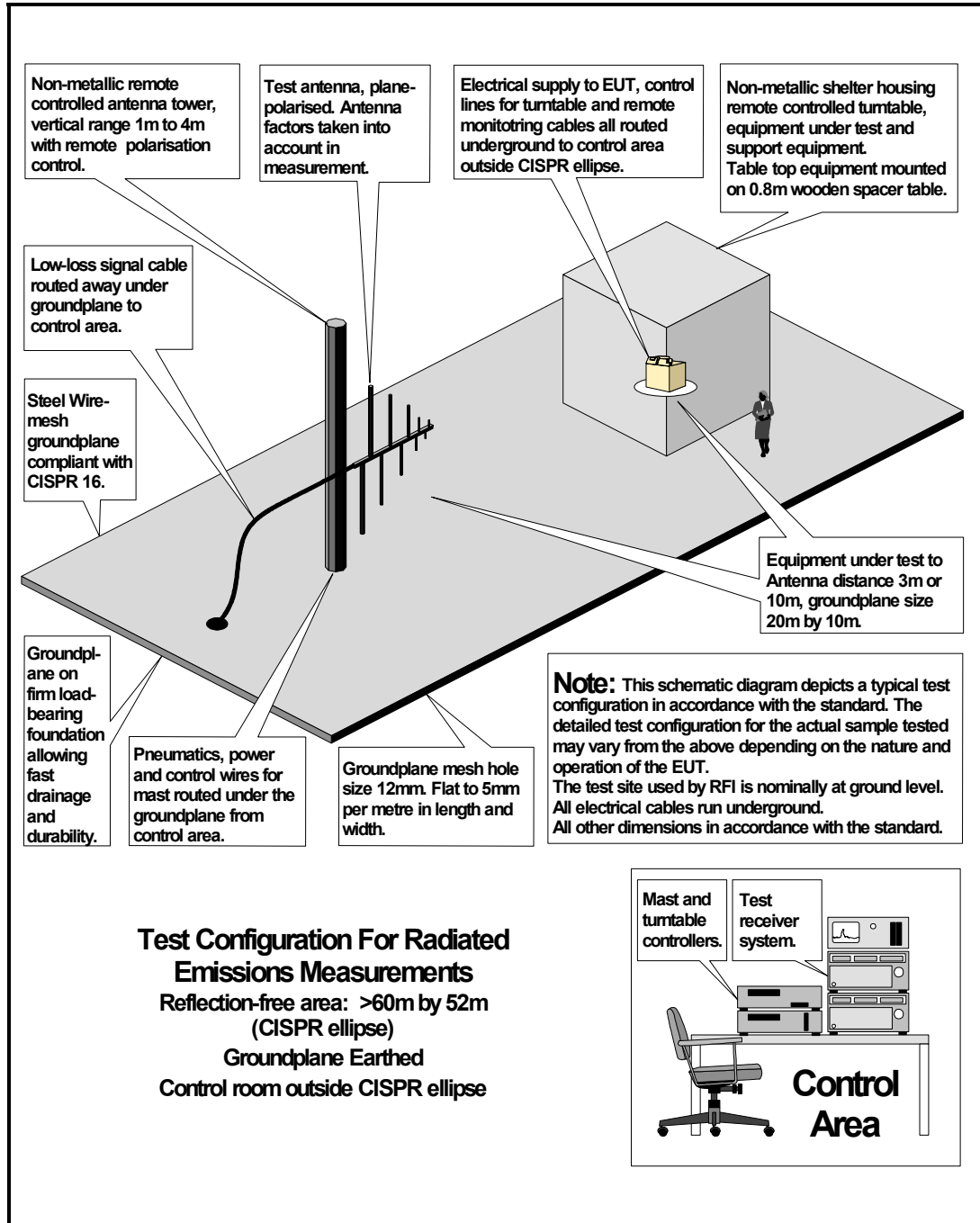


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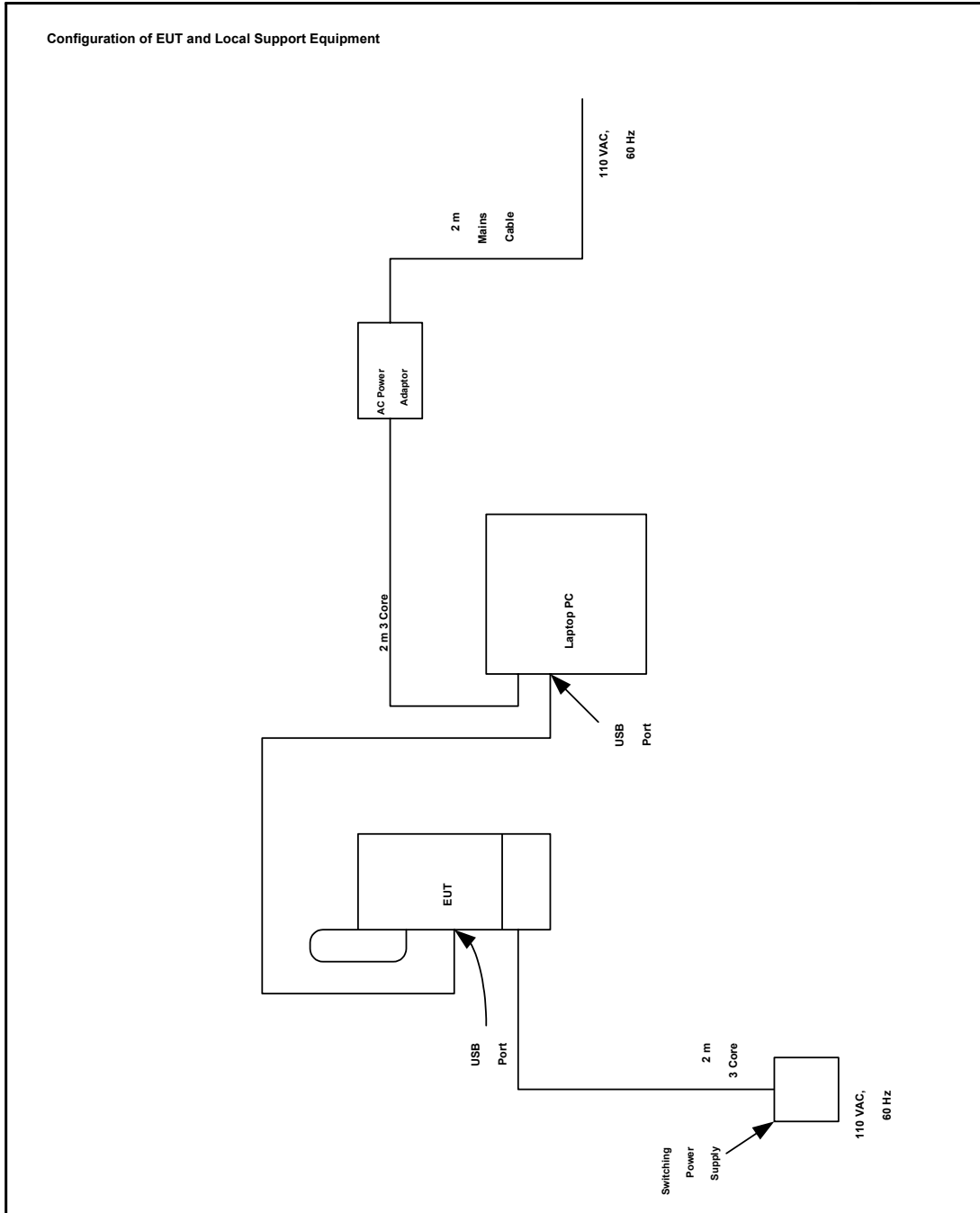


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Appendix 4. Graphical Test Results

This Appendix contains the following graphs:

Graph Reference Number	Title
GPH\44493JD01\001	Radiated Spurious Emissions – Rx Mode (30.0 MHz to 1.0 GHz)
GPH\44493JD01\002	Radiated Spurious Emissions – Rx Mode (1.0 GHz to 2.0 GHz)
GPH\44493JD01\003	Radiated Spurious Emissions – Rx Mode (2.0 GHz to 4.0 GHz)
GPH\44493JD01\021	Radiated Spurious Emissions – Rx Mode (4.0 GHz to 6.0 GHz)
GPH\44493JD01\020	Radiated Spurious Emissions – Rx Mode (6.0 GHz to 8.0 GHz)
GPH\44493JD01\019	Radiated Spurious Emissions – Rx Mode (8.0 GHz to 12.5 GHz)
GPH\44493JD01\006	Radiated Spurious Emissions – Tx Mode – Bottom Channel (30.0 MHz to 1.0 GHz)
GPH\44493JD01\011	Radiated Spurious Emissions – Tx Mode – Bottom Channel (1.0 GHz to 2.0 GHz)
GPH\44493JD01\012	Radiated Spurious Emissions – Tx Mode – Bottom Channel (2.0 GHz to 4.0 GHz)
GPH\44493JD01\022	Radiated Spurious Emissions – Tx Mode – Bottom Channel (4.0 GHz to 6.0 GHz)
GPH\44493JD01\027	Radiated Spurious Emissions – Tx Mode – Bottom Channel (6.0 GHz to 8.0 GHz)
GPH\44493JD01\028	Radiated Spurious Emissions – Tx Mode – Bottom Channel (8.0 GHz to 12.5 GHz)
GPH\44493JD01\033	Radiated Spurious Emissions – Tx Mode – Bottom Channel (12.5 GHz to 18.0 GHz)
GPH\44493JD01\034	Radiated Spurious Emissions – Tx Mode – Bottom Channel (18.0 GHz to 26.5 GHz)
GPH\44493JD01\007	Radiated Spurious Emissions - Tx Mode – Middle Channel (30.0 MHz to 1.0 GHz)
GPH\44493JD01\010	Radiated Spurious Emissions - Tx Mode – Middle Channel (1.0 GHz to 2.0 GHz)
GPH\44493JD01\013	Radiated Spurious Emissions - Tx Mode – Middle Channel (2.0 GHz to 4.0 GHz)

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Graphical Test Results (continued)

Graph Reference Number	Title
GPH\44493JD01\023	Radiated Spurious Emissions - Tx Mode – Middle Channel (4.0 GHz to 6.0 GHz)
GPH\44493JD01\026	Radiated Spurious Emissions - Tx Mode – Middle Channel (6.0 GHz to 8.0 GHz)
GPH\44493JD01\029	Radiated Spurious Emissions - Tx Mode – Middle Channel (8.0 GHz to 12.5 GHz)
GPH\44493JD01\032	Radiated Spurious Emissions - Tx Mode – Middle Channel (12.5 GHz to 18.0 GHz)
GPH\44493JD01\035	Radiated Spurious Emissions - Tx Mode – Middle Channel (18.0 GHz to 26.5 GHz)
GPH\44493JD01\008	Radiated Spurious Emissions – Tx Mode – Top Channel (30.0 MHz to 1.0 GHz)
GPH\44493JD01\009	Radiated Spurious Emissions – Tx Mode – Top Channel (1.0 GHz to 2.0 GHz)
GPH\44493JD01\014	Radiated Spurious Emissions – Tx Mode – Top Channel (2.0 GHz to 4.0 GHz)
GPH\44493JD01\024	Radiated Spurious Emissions – Tx Mode – Top Channel (4.0 GHz to 6.0 GHz)
GPH\44493JD01\025	Radiated Spurious Emissions – Tx Mode – Top Channel (6.0 GHz to 8.0 GHz)
GPH\44493JD01\030	Radiated Spurious Emissions – Tx Mode – Top Channel (8.0 GHz to 12.5 GHz)
GPH\44493JD01\031	Radiated Spurious Emissions – Tx Mode – Top Channel (12.5 GHz to 18.0 GHz)
GPH\44493JD01\036	Radiated Spurious Emissions – Tx Mode – Top Channel (18.0 GHz to 26.5 GHz)
GPH\44493JD01\037	Radiated Spurious Emissions – Band Edge – Bottom Channel
GPH\44493JD01\038	Radiated Spurious Emissions – Band Edge – Top Channel
GPH\44493JD01\039	Conducted Spurious Emissions – Bottom Channel (9 kHz to 1.0 GHz)
GPH\44493JD01\040	Conducted Spurious Emissions – Bottom Channel (1 GHz to 2.497 GHz)
GPH\44493JD01\041	Conducted Spurious Emissions – Bottom Channel (2.515 GHz to 10.0 GHz)

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

Graphical Test Results (continued)

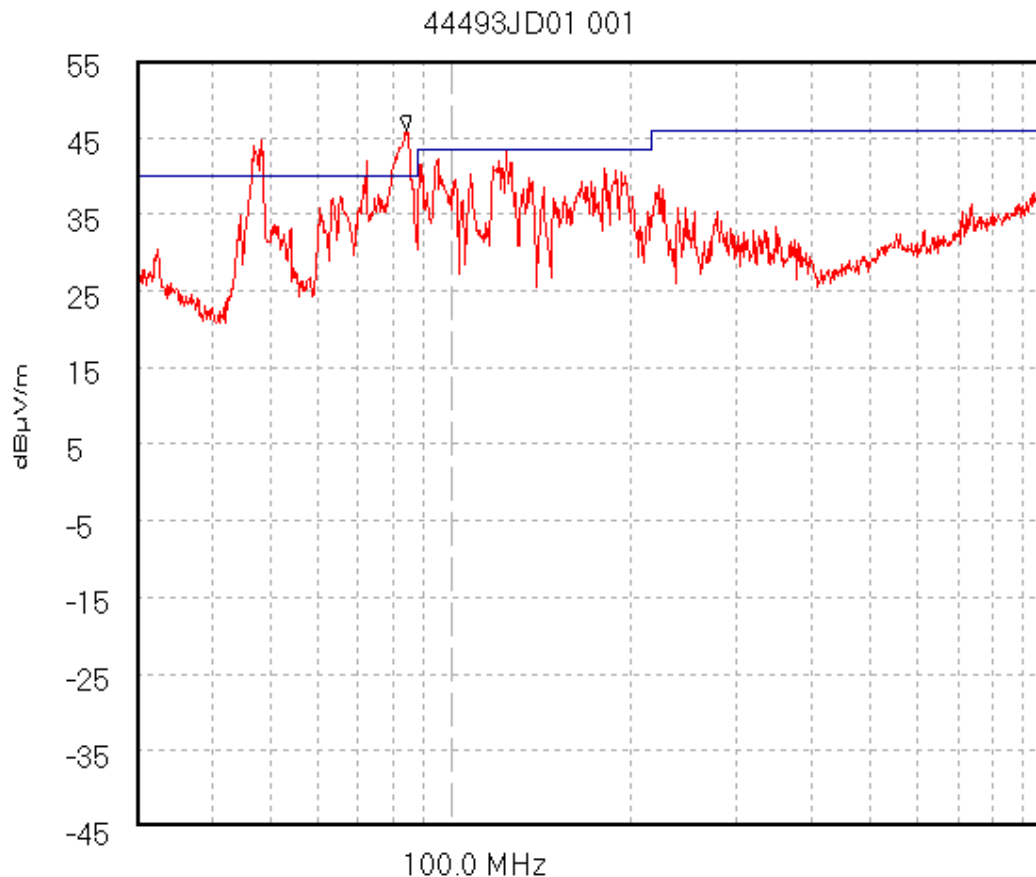
Graph Reference Number	Title
GPH\44493JD01\042	Conducted Spurious Emissions – Bottom Channel (10.0 GHz to 27.0 GHz)
GPH\44493JD01\043	Conducted Spurious Emissions – Middle Channel (9 kHz to 1.0 GHz)
GPH\44493JD01\044	Conducted Spurious Emissions – Middle Channel (1 GHz to 2.587 GHz)
GPH\44493JD01\045	Conducted Spurious Emissions – Middle Channel (2.605 GHz to 10.0 GHz)
GPH\44493JD01\046	Conducted Spurious Emissions – Middle Channel (10.0 GHz to 27.0 GHz)
GPH\44493JD01\047	Conducted Spurious Emissions – Top Channel (9 kHz to 1.0 GHz)
GPH\44493JD01\048	Conducted Spurious Emissions – Top Channel (1 GHz to 2.671 GHz)
GPH\44493JD01\049	Conducted Spurious Emissions – Top Channel (2.689 GHz to 10.0 GHz)
GPH\44493JD01\050	Conducted Spurious Emissions – Top Channel (10.0 GHz to 27.0 GHz)
GPH\44493JD01\051	Conducted Spurious Emissions – Band Edge – Bottom Channel
GPH\44493JD01\052	Conducted Spurious Emissions – Band Edge – Top Channel
GPH\44493JD01\053	Out-of-Band Spectrum Mask – Bottom Channel
GPH\44493JD01\054	Out-of-Band Spectrum Mask – Middle Channel
GPH\44493JD01\055	Out-of-Band Spectrum Mask – Top Channel
GPH\44493JD01\056	Occupied Bandwidth – Bottom Channel
GPH\44493JD01\057	Occupied Bandwidth – Middle Channel
GPH\44493JD01\058	Occupied Bandwidth – Top Channel
GPH\44493JD01\059	AC Conducted Emissions – Rx Mode

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\001
Radiated Spurious Emissions. Rx Mode.



— Trace 1
— 15_109_Class_B

Start 30.0 MHz; Stop 1.0 GHz - Log Scale

Ref 55 dBµV/m; Ref Offset 0.0 dB; 10 dB/div

RBW 120.0 kHz; VBW 100.0 kHz; Att 10 dB; Swp 380.0 mS

Peak 84.57 MHz, 45.99 dBµV/m

Limit/Mask: 15_109_Class_B; ; Limit Test Failed

Transducer Factors: A490

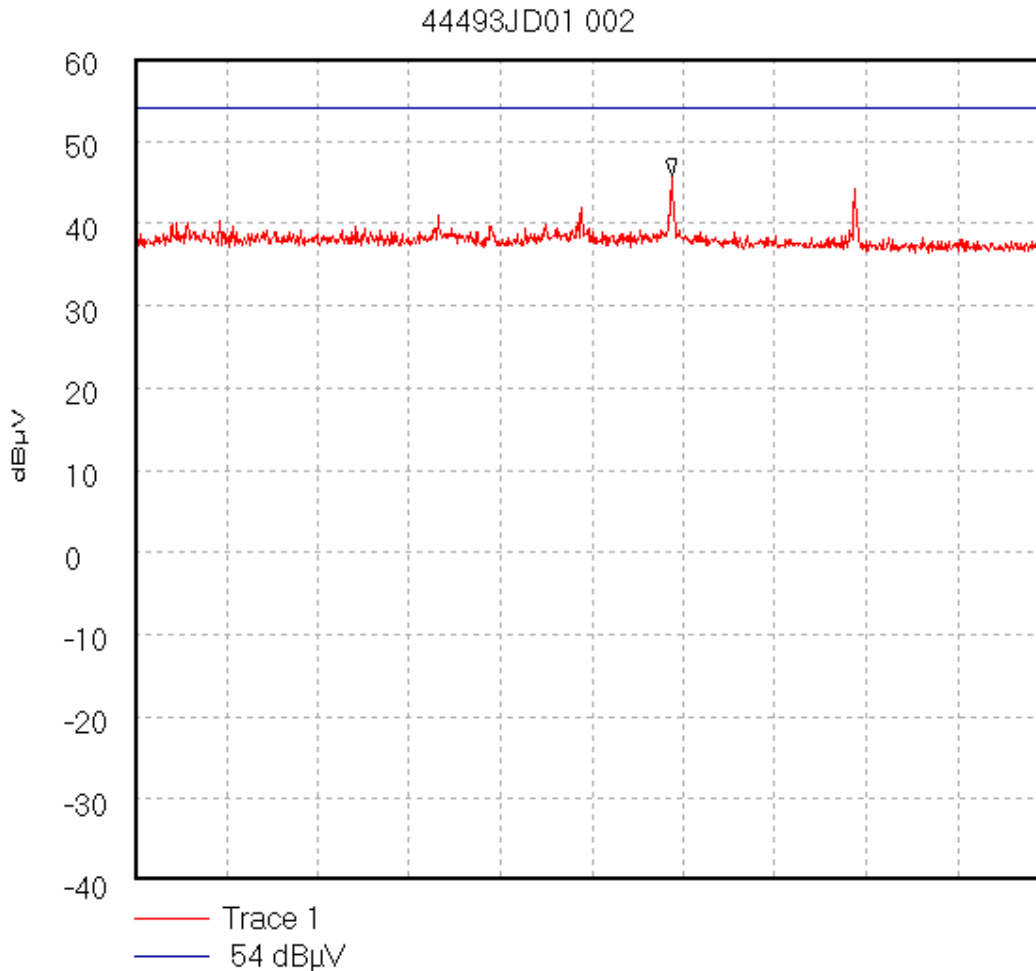
24/02/2003 11:26:27

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\002
Radiated Spurious Emissions. Rx Mode.



Start 1.0 GHz; Stop 2.0 GHz

Ref 60 dBµV; Ref Offset 0.0 dB; 10 dB/div

RBW 1000.0 kHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 1.588 GHz, 45.78 dBµV

Display Line: 54 dBµV; ; Limit Test Failed

Transducer Factors: 1 to 2

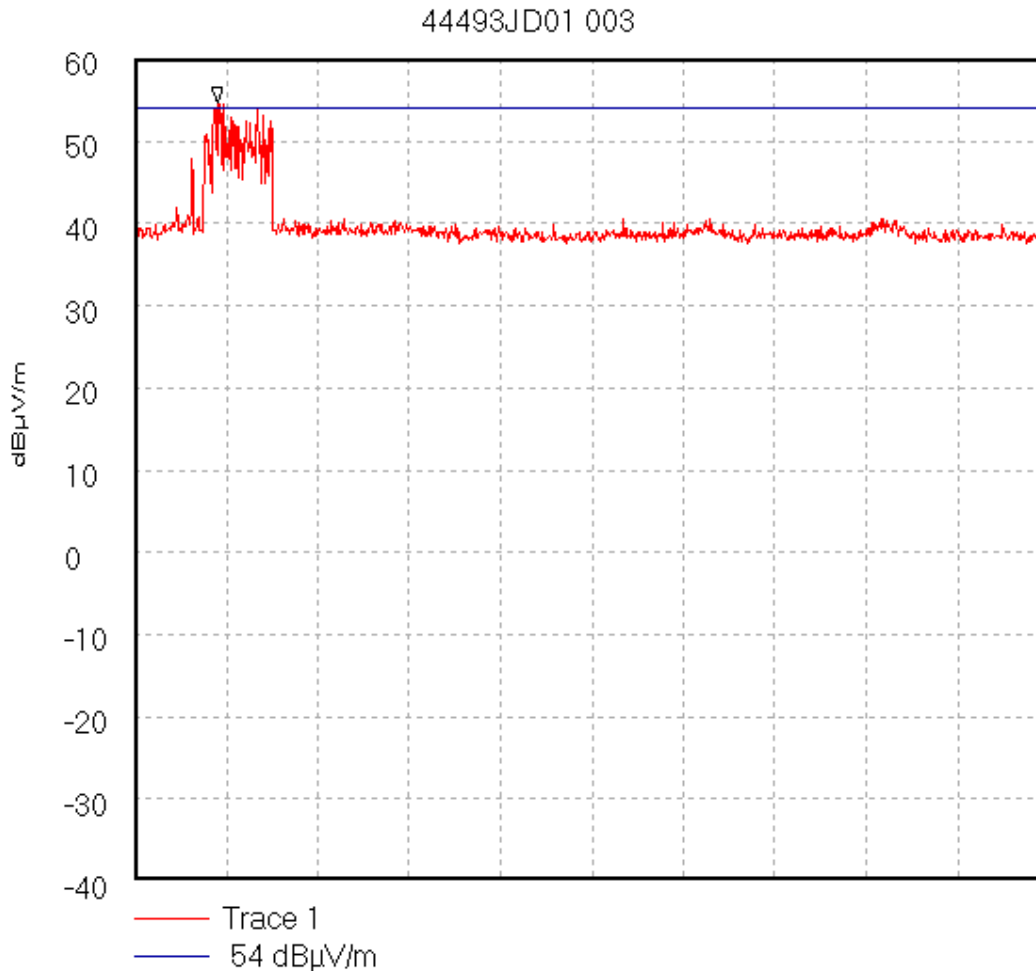
24/02/2003 11:57:51

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\003
Radiated Spurious Emissions. Rx Mode.



Start 2.0 GHz; Stop 4.0 GHz
Ref 60 dBµV/m; Ref Offset 0.0 dB; 10 dB/div
RBW 1000.0 kHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 2.182 GHz, 54.6 dBµV/m
Display Line: 54 dBµV/m; ; Limit Test Failed
Transducer Factors: 2 to 4
24/02/2003 13:29:16

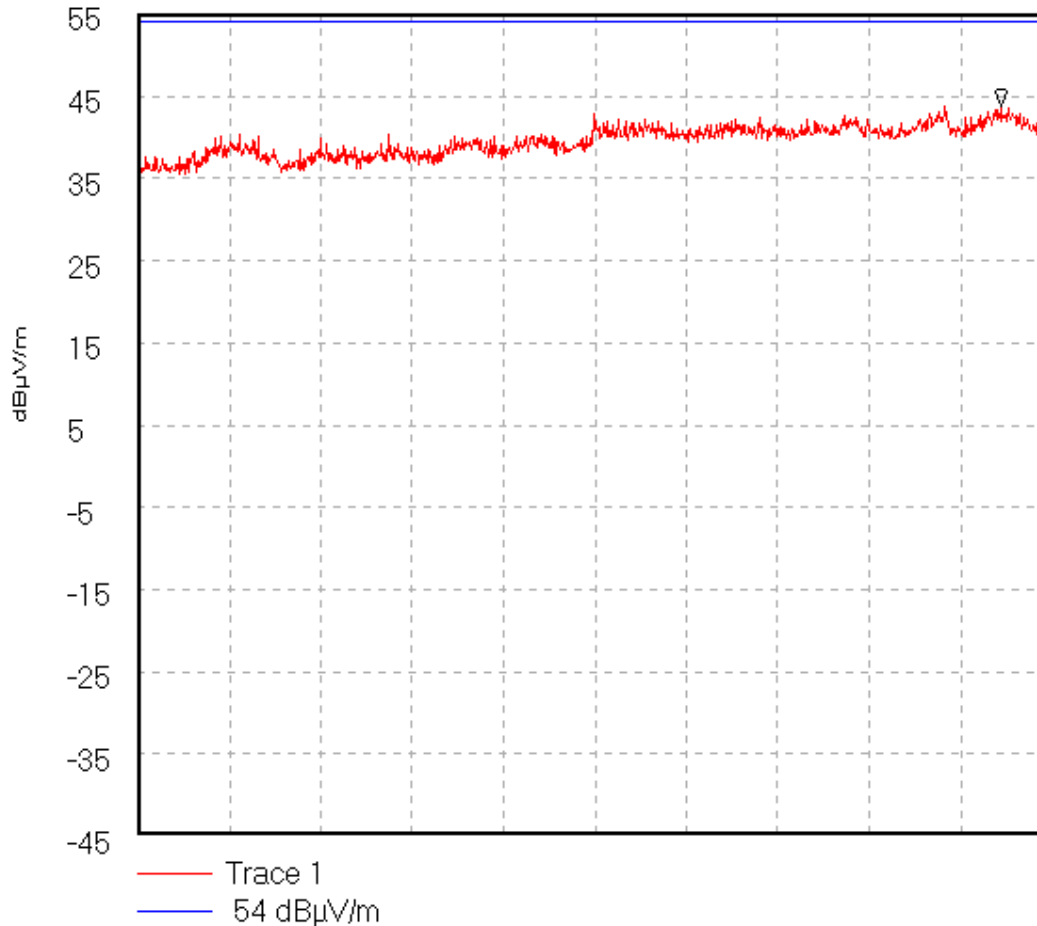
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\021
Radiated Spurious Emissions. Rx Mode.

44493JD01 021



Start 4.0 GHz; Stop 6.0 GHz

Ref 55 dBµV/m; Ref Offset 0.0 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 5.889 GHz, 43.83 dBµV/m

Display Line: 54 dBµV/m;

Transducer Factors: 4to6horn

26/02/03 14:32:50

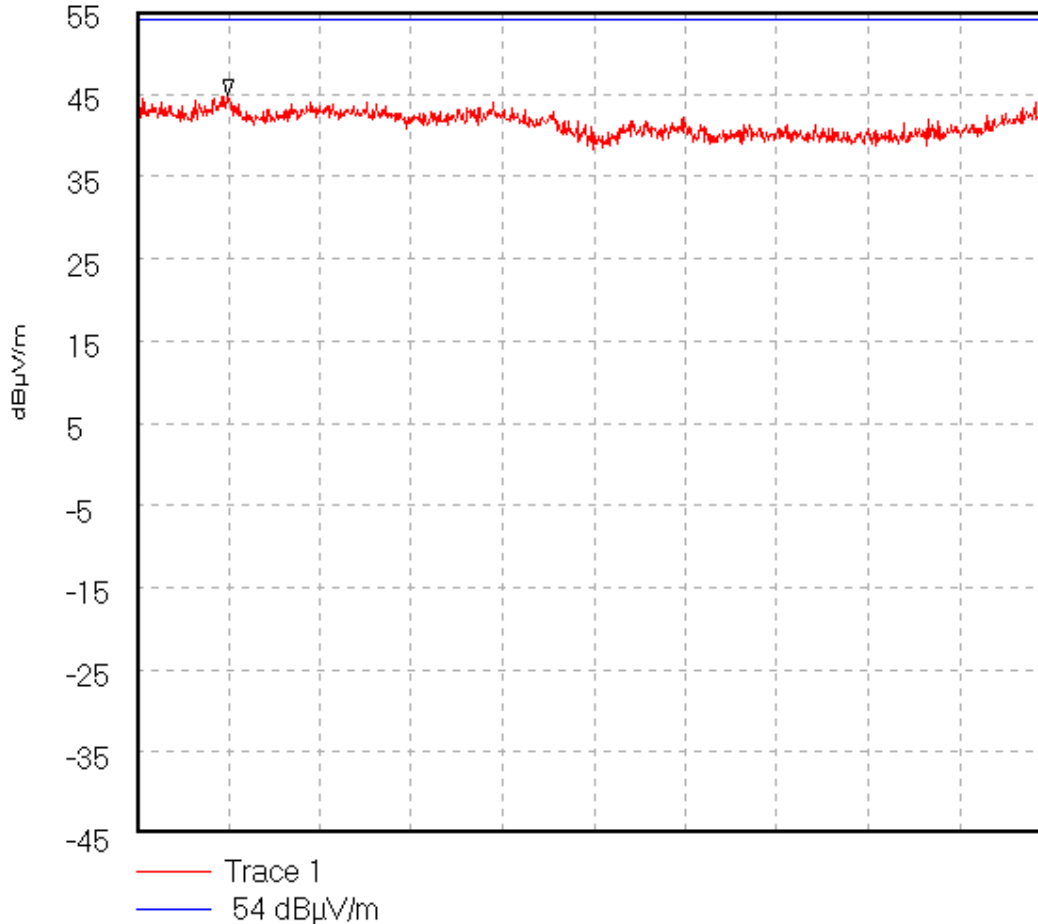
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\020
Radiated Spurious Emissions. Rx Mode.

44493JD01 020



Start 6.0 GHz; Stop 8.0 GHz
Ref 55 dBµV/m; Ref Offset 0.0 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 6.2 GHz, 44.77 dBµV/m
Display Line: 54 dBµV/m;
Transducer Factors: 6to8g_Horn
26/02/03 14:28:40

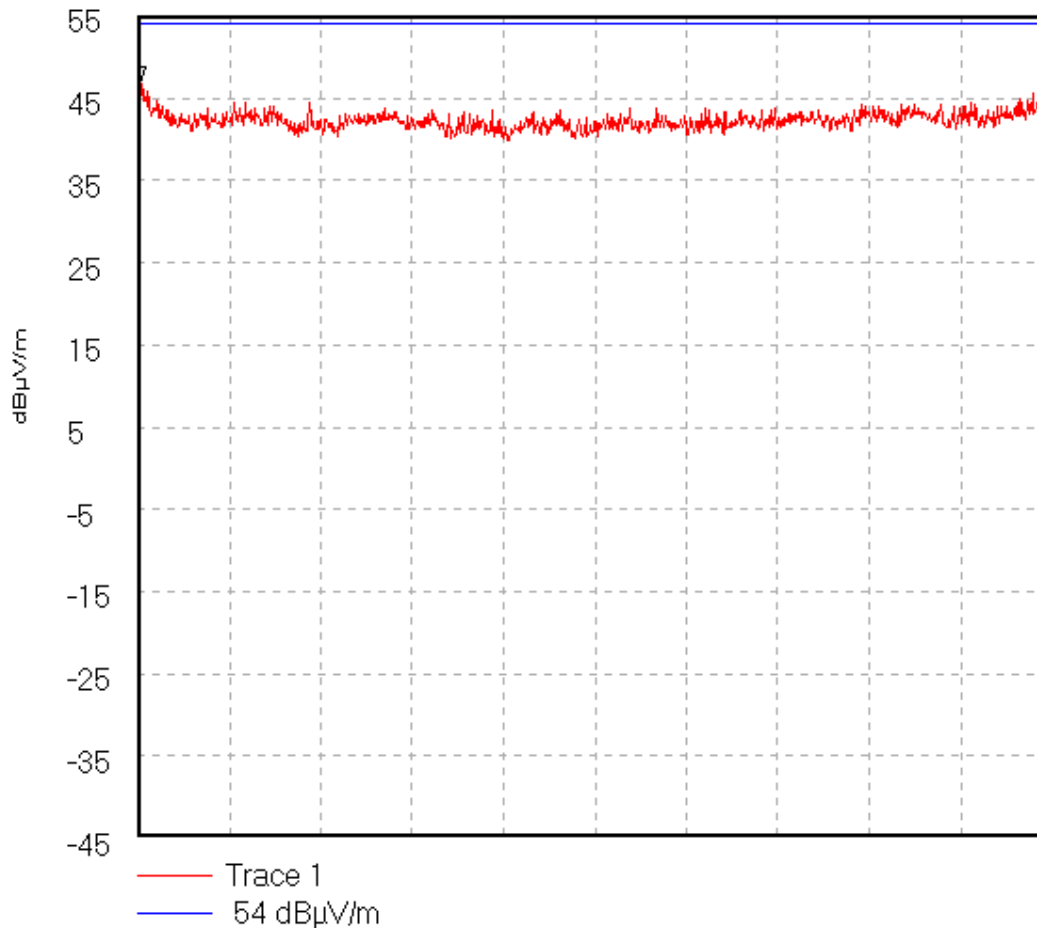
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\019
Radiated Spurious Emissions. Rx Mode.

44493JD01 019



Start 8.0 GHz; Stop 12.5 GHz
Ref 55 dBµV/m; Ref Offset 0.0 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 8.015 GHz, 46.8 dBµV/m
Display Line: 54 dBµV/m;
Transducer Factors: 8to12G_Horn
26/02/03 14:25:13

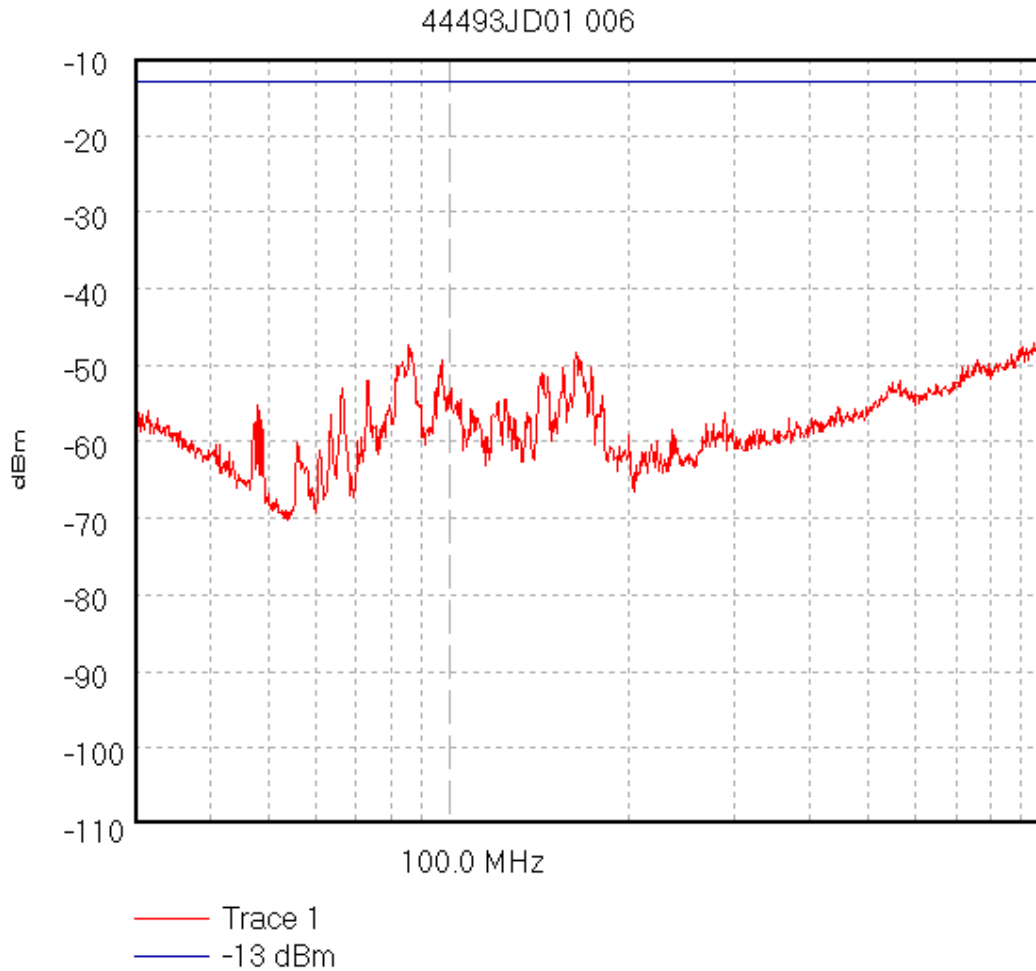
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\006

Radiated Spurious Emissions. Tx Mode - Bottom Channel.



Start 30.0 MHz; Stop 1.0 GHz - Log Scale

Ref -10 dBm; Ref Offset 10.0 dB; 10 dB/div

RBW 120.0 kHz; VBW 100.0 kHz; Att 10 dB; Swp 380.0 mS

Peak 996.111 MHz, -45.72 dBm

Display Line: -13 dBm; ; Limit Test Passed

Transducer Factors: A490

26/02/2003 09:47:55

Test Of: IPWireless U.K. Ltd.

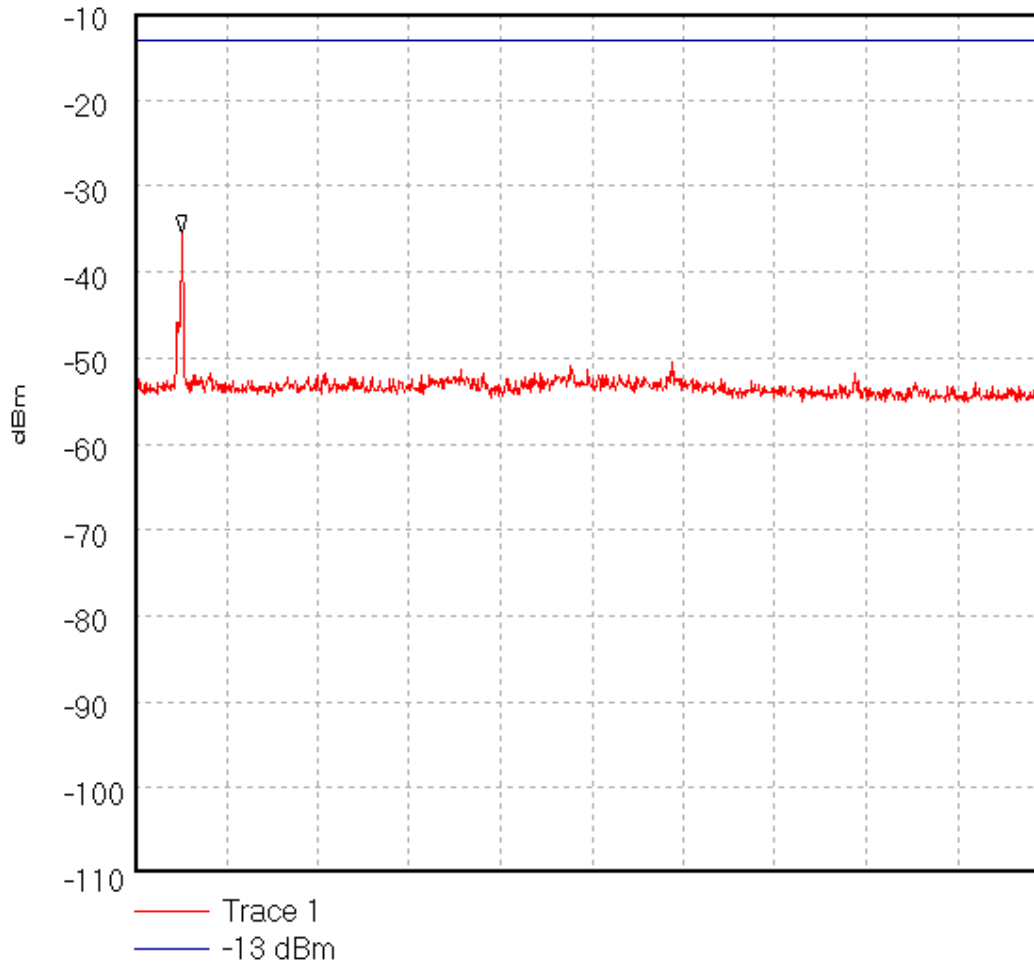
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\011

Radiated Spurious Emissions. Tx Mode - Bottom Channel.

44493JD01 011



Start 1.0 GHz; Stop 2.0 GHz
Ref -10 dBm; Ref Offset 30.2 dB; 10 dB/div
RBW 1000.0 kHz; VBW 1.0 MHz; Att 10 dB; Swp 20.0 mS
Peak 1.052 GHz, -35.52 dBm
Display Line: -13 dBm; ; Limit Test Passed
26/02/2003 10:40:44

Test Of: IPWireless U.K. Ltd.

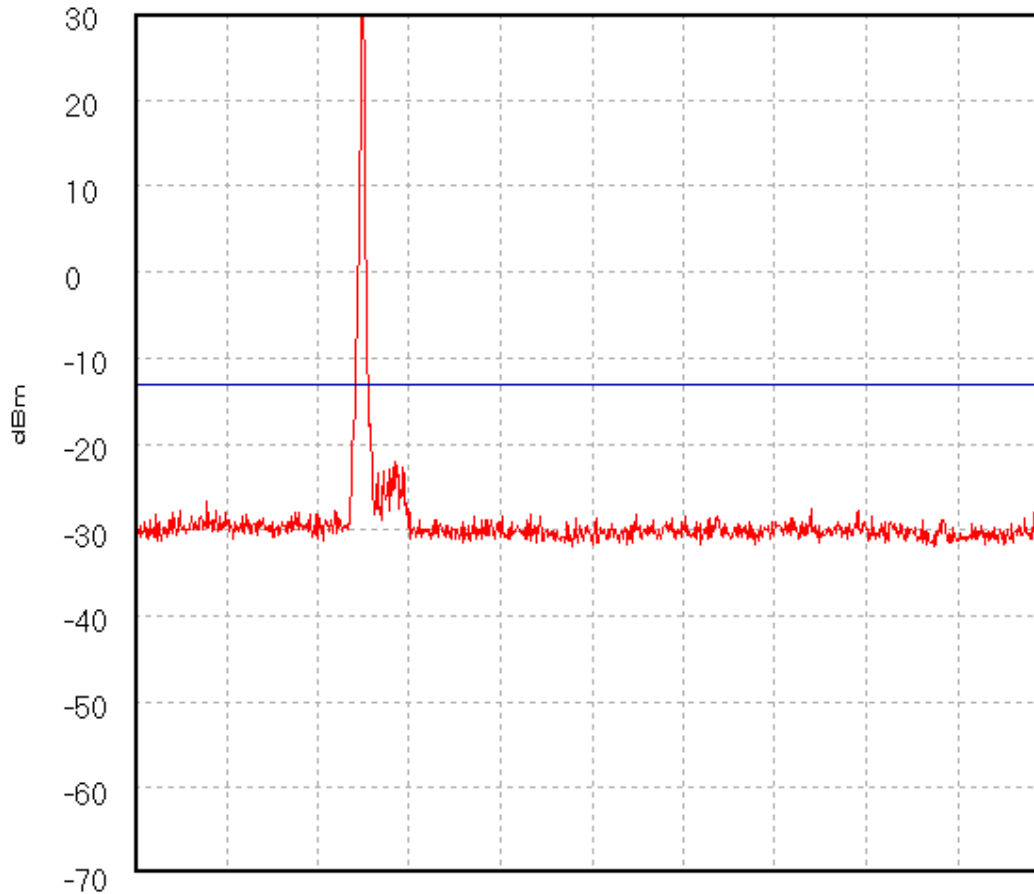
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\012

Radiated Spurious Emissions. Tx Mode - Bottom Channel.

44493JD01 012



— Trace 1
— -13 dBm

Start 2.0 GHz; Stop 4.0 GHz

Ref 30 dBm; Ref Offset 37.7 dB; 10 dB/div

RBW 1000.0 kHz; VBW 1.0 MHz; Att 20 dB; Swp 20.0 mS

Peak 2.496 GHz, 32.74 dBm

Display Line: -13 dBm; ; Limit Test Failed

26/02/2003 10:54:18

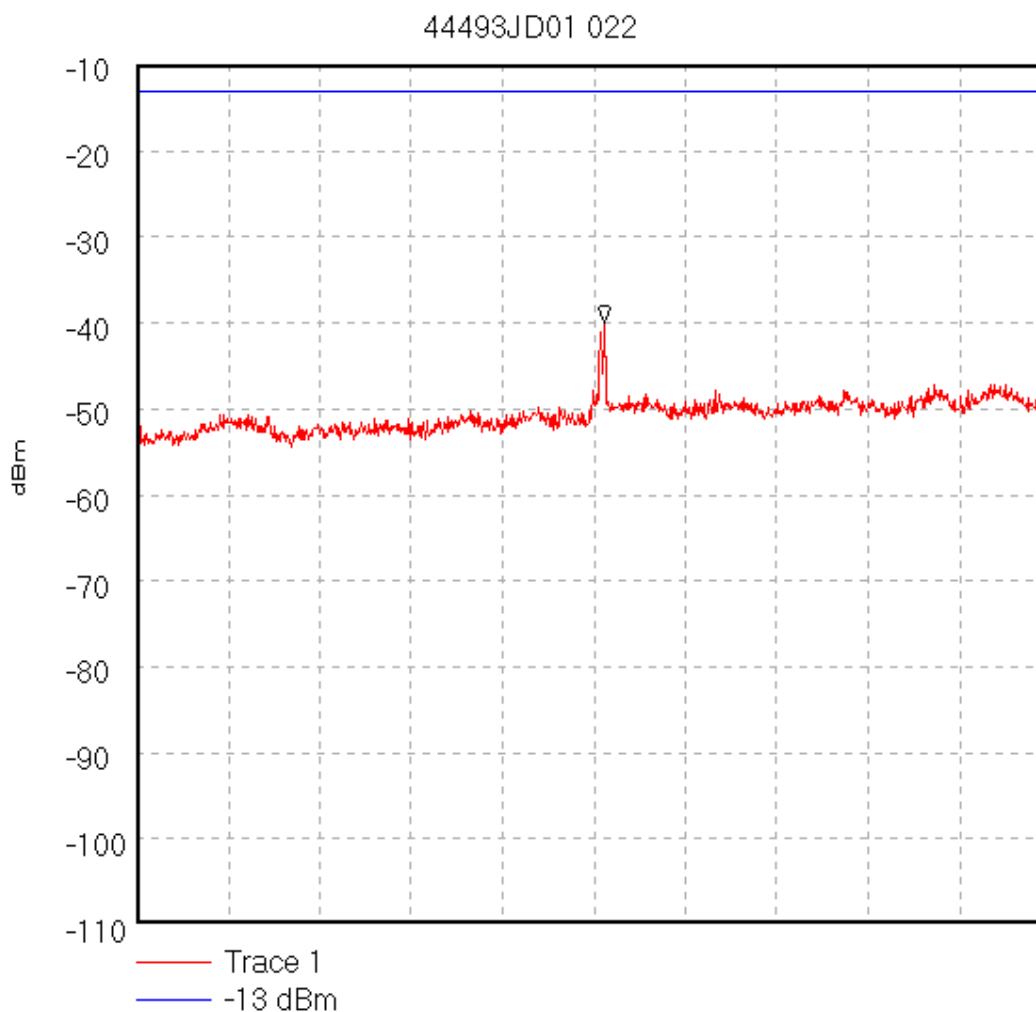
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\022

Radiated Spurious Emissions. Tx Mode - Bottom Channel.



Start 4.0 GHz; Stop 6.0 GHz

Ref -10 dBm; Ref Offset 30.3 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 5.024 GHz, -40.04 dBm

Display Line: -13 dBm;

26/02/03 14:45:32

Test Of: IPWireless U.K. Ltd.

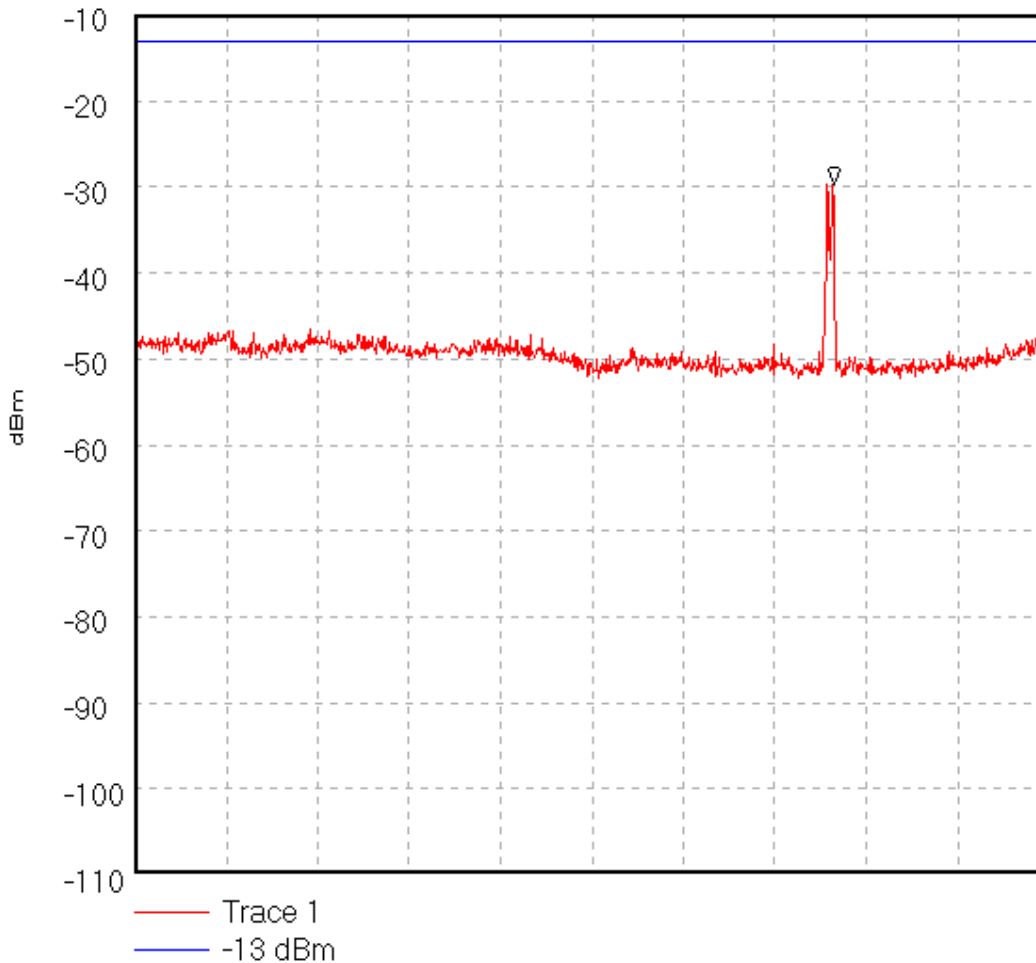
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\027

Radiated Spurious Emissions. Tx Mode - Bottom Channel.

44493JD01 027



Start 6.0 GHz; Stop 8.0 GHz

Ref -10 dBm; Ref Offset 32.8 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 7.529 GHz, -29.7 dBm

Display Line: -13 dBm;

26/02/03 15:08:09

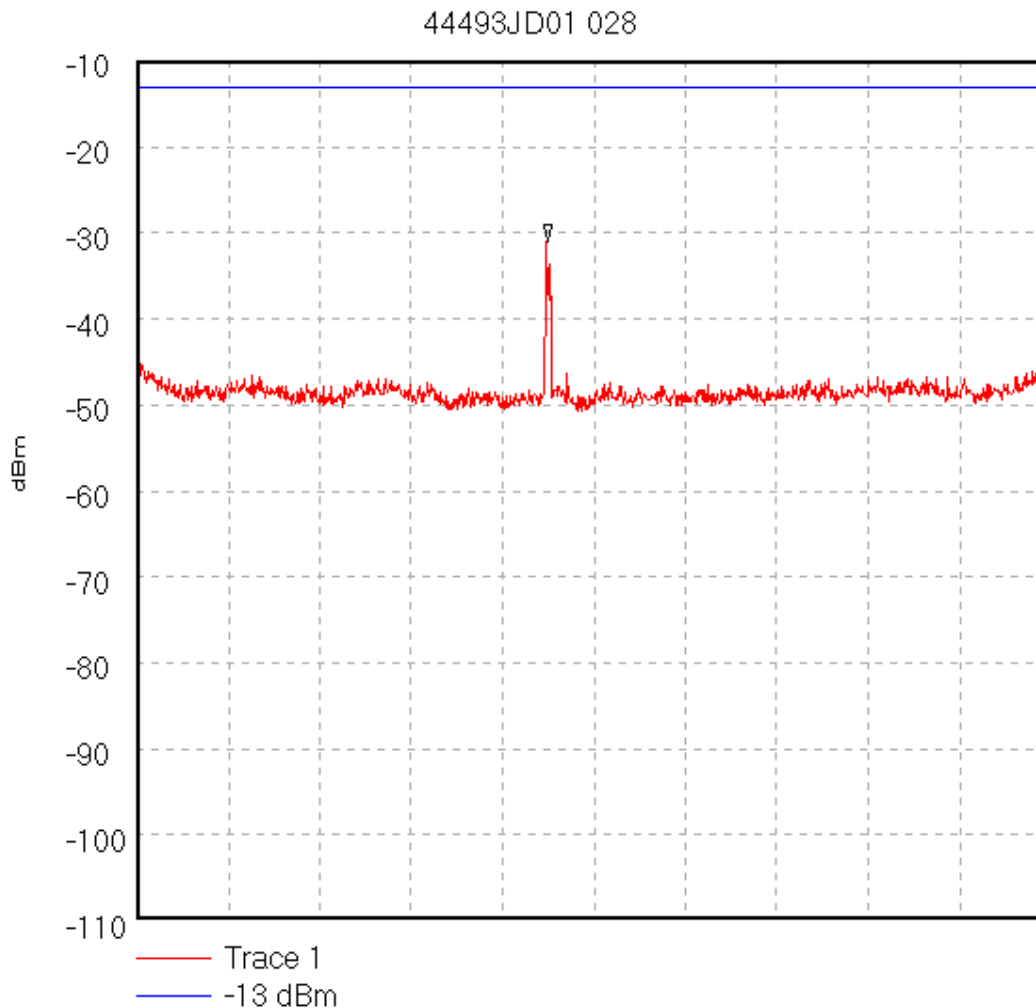
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\028

Radiated Spurious Emissions. Tx Mode - Bottom Channel.



Start 8.0 GHz; Stop 12.5 GHz

Ref -10 dBm; Ref Offset 36.1 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 10.02 GHz, -31.1 dBm

Display Line: -13 dBm;

26/02/03 15:14:19

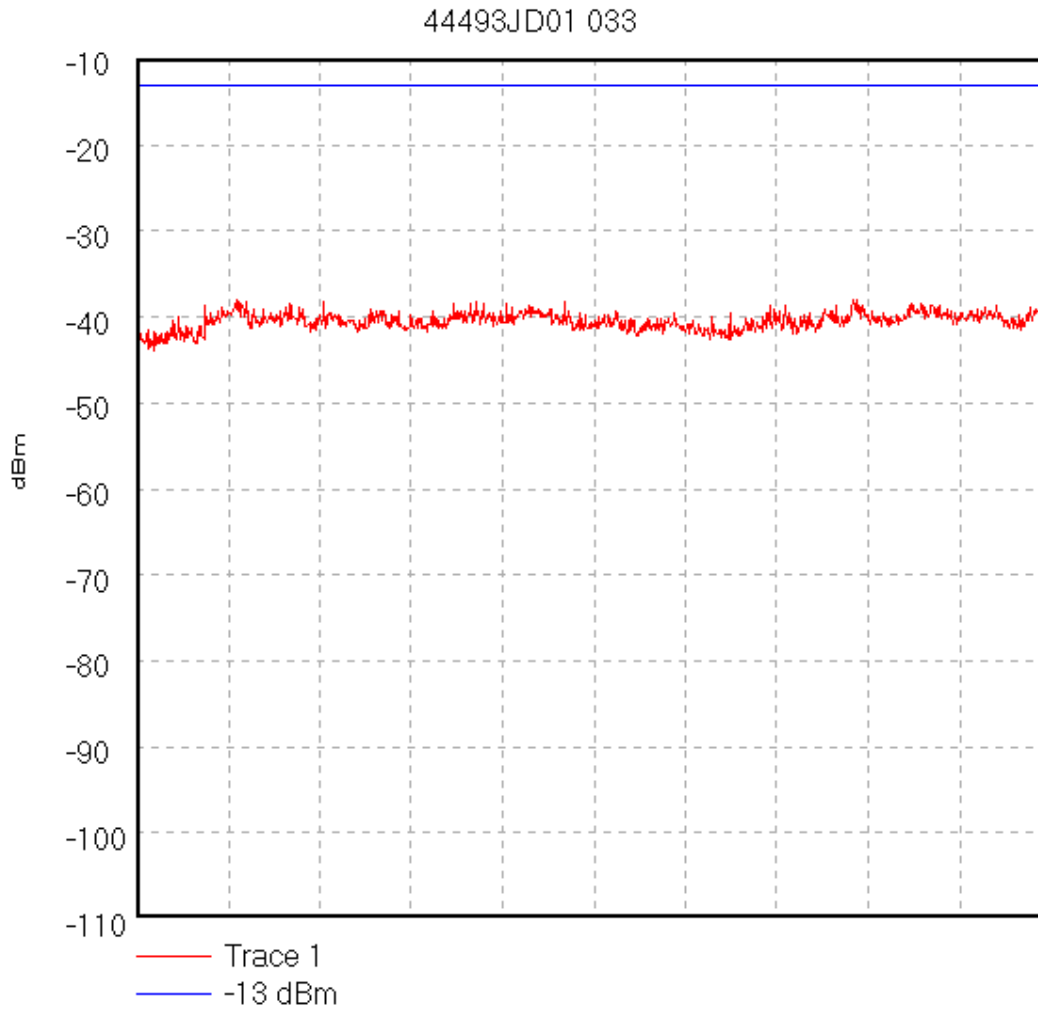
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\033

Radiated Spurious Emissions. Tx Mode - Bottom Channel.



Start 12.5 GHz; Stop 18.0 GHz
Ref -10 dBm; Ref Offset 41.0 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 17.957 GHz, -37.22 dBm
Display Line: -13 dBm;
26/02/03 15:54:48

Test Of: IPWireless U.K. Ltd.

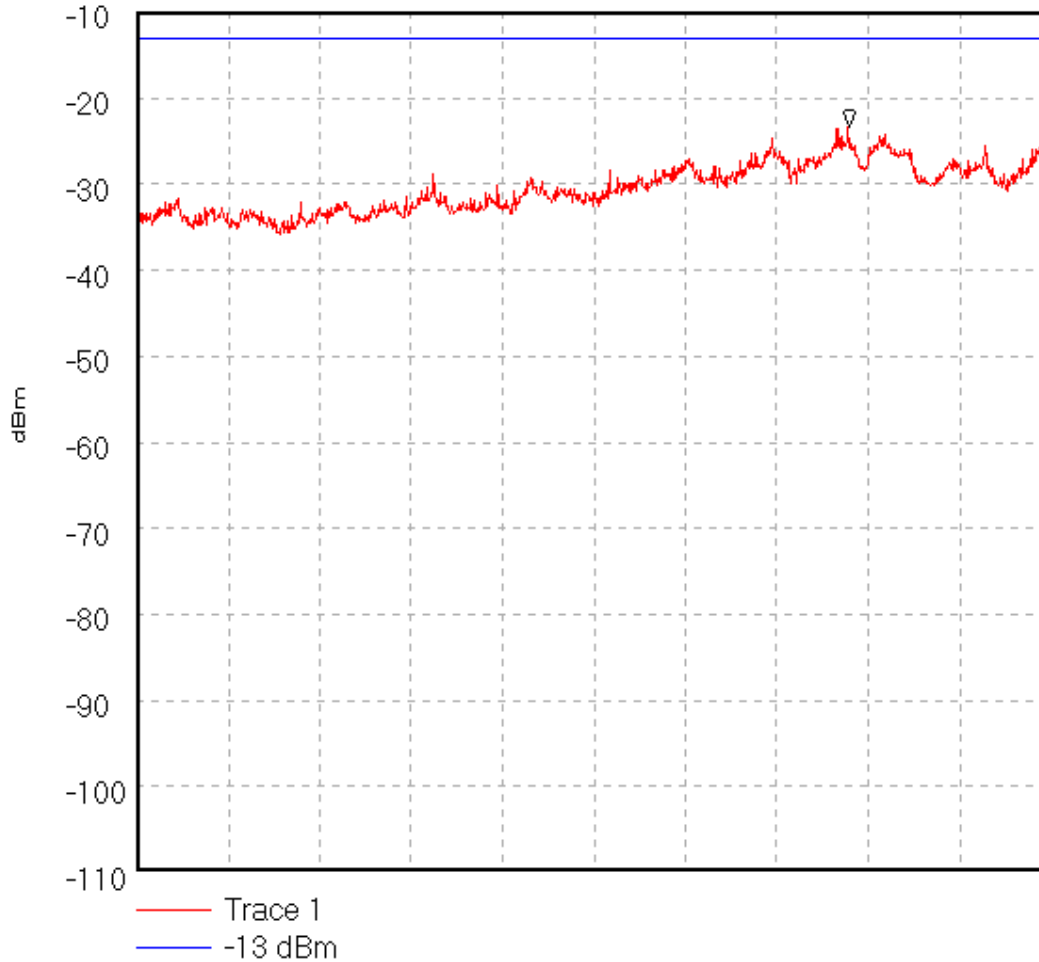
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\034

Radiated Spurious Emissions. Tx Mode - Bottom Channel.

44493JD01 034



Start 18.0 GHz; Stop 26.5 GHz
Ref -10 dBm; Ref Offset 46.7 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 40.0 mS
Peak 24.621 GHz, -23.33 dBm
Display Line: -13 dBm;
26/02/03 16:00:19

Test Of: IPWireless U.K. Ltd.

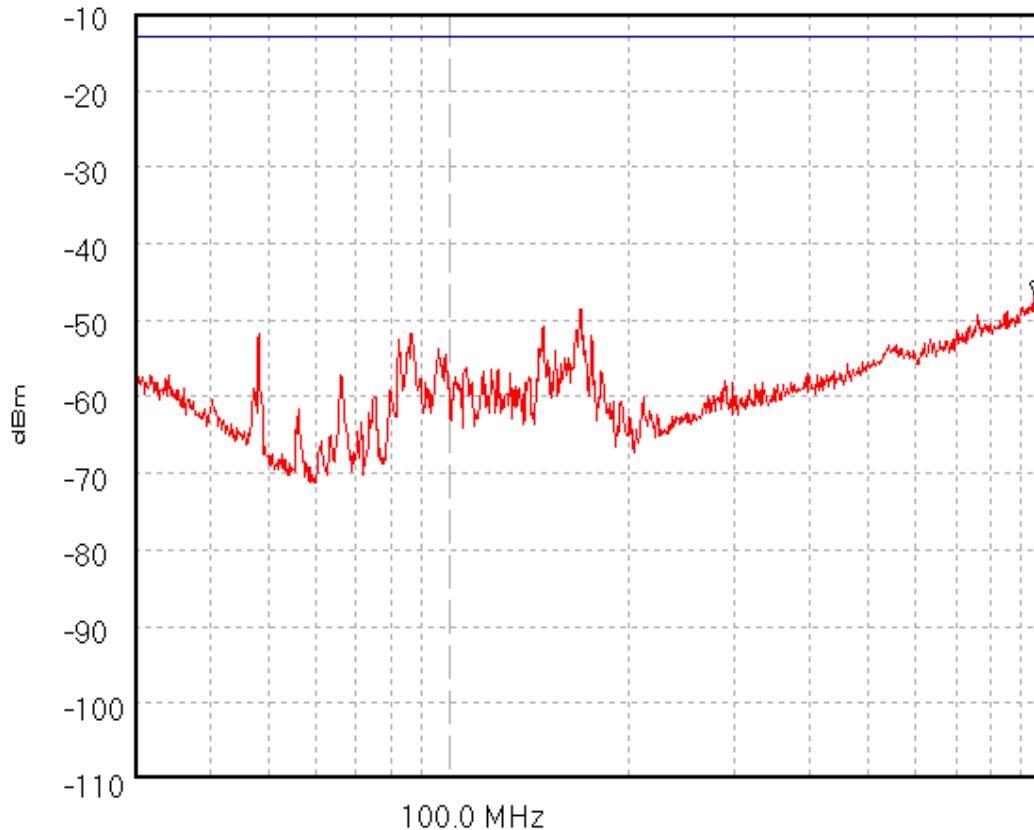
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\007

Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 007



— Trace 1
— -13 dBm

Start 30.0 MHz; Stop 1.0 GHz - Log Scale
Ref -10 dBm; Ref Offset 10.0 dB; 10 dB/div
RBW 120.0 kHz; VBW 100.0 kHz; Att 10 dB; Swp 80.0 mS
Peak 950.611 MHz, -46.97 dBm
Display Line: -13 dBm; ; Limit Test Passed
Transducer Factors: A490
26/02/2003 09:57:41

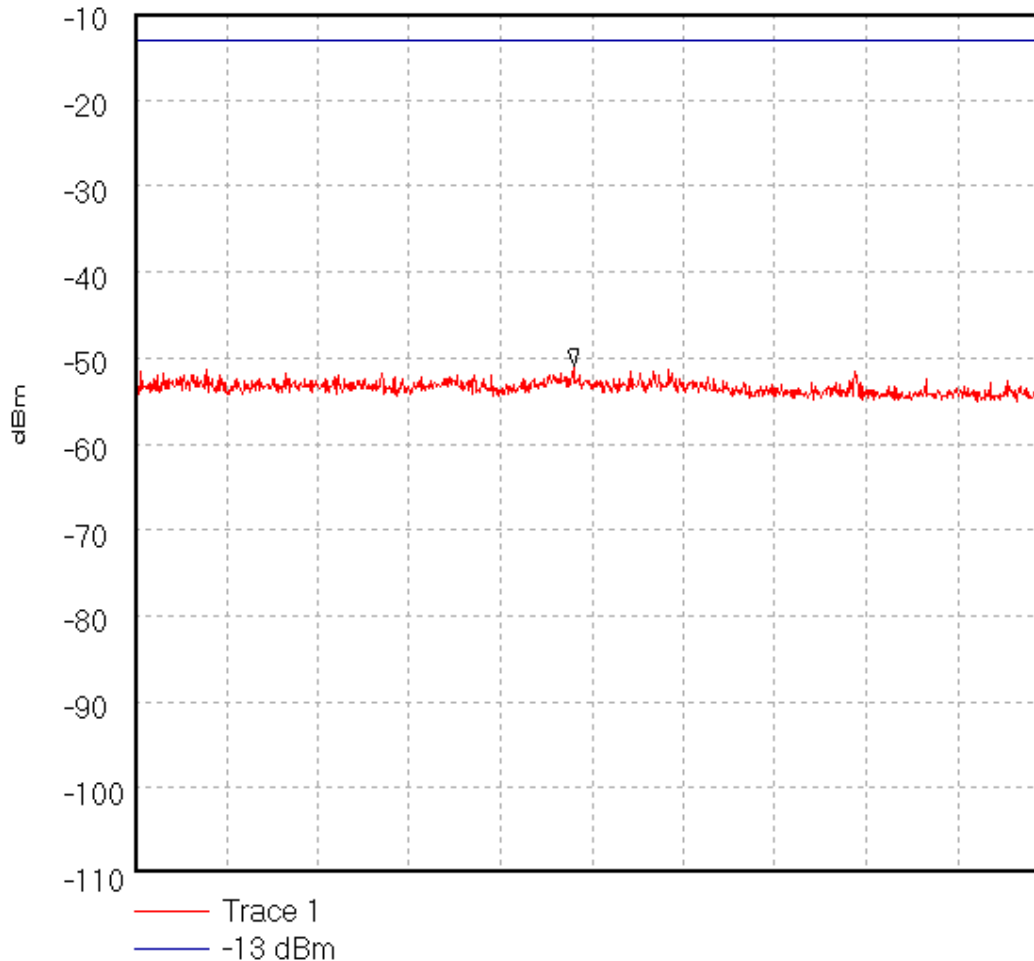
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\010
Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 010



Start 1.0 GHz; Stop 2.0 GHz
Ref -10 dBm; Ref Offset 30.2 dB; 10 dB/div
RBW 1000.0 kHz; VBW 1.0 MHz; Att 10 dB; Swp 20.0 mS
Peak 1.48 GHz, -50.93 dBm
Display Line: -13 dBm; ; Limit Test Passed
26/02/2003 10:31:18

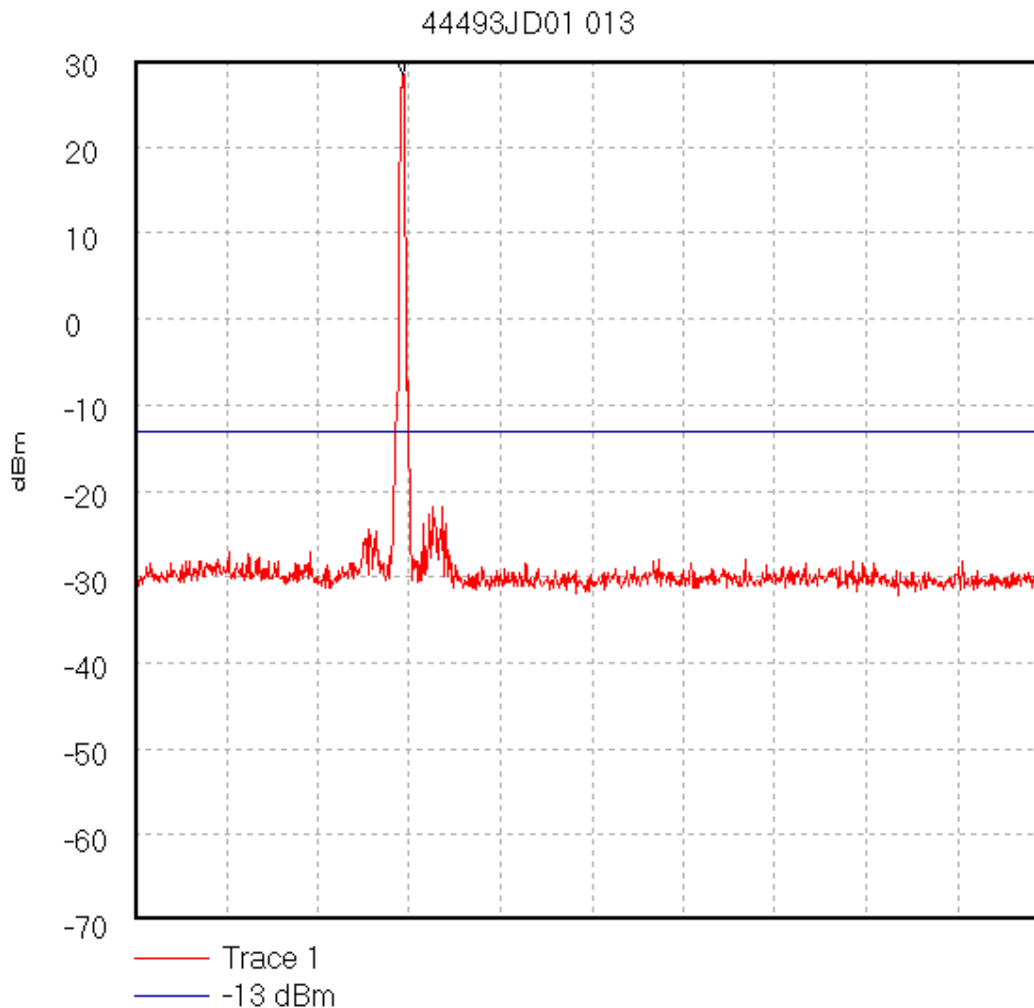
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\013

Radiated Spurious Emissions. Tx Mode - Middle Channel.



Start 2.0 GHz; Stop 4.0 GHz

Ref 30 dBm; Ref Offset 37.7 dB; 10 dB/div

RBW 1000.0 kHz; VBW 1.0 MHz; Att 20 dB; Swp 20.0 mS

Peak 2.587 GHz, 28.46 dBm

Display Line: -13 dBm; ; Limit Test Failed

26/02/2003 11:01:00

Test Of: IPWireless U.K. Ltd.

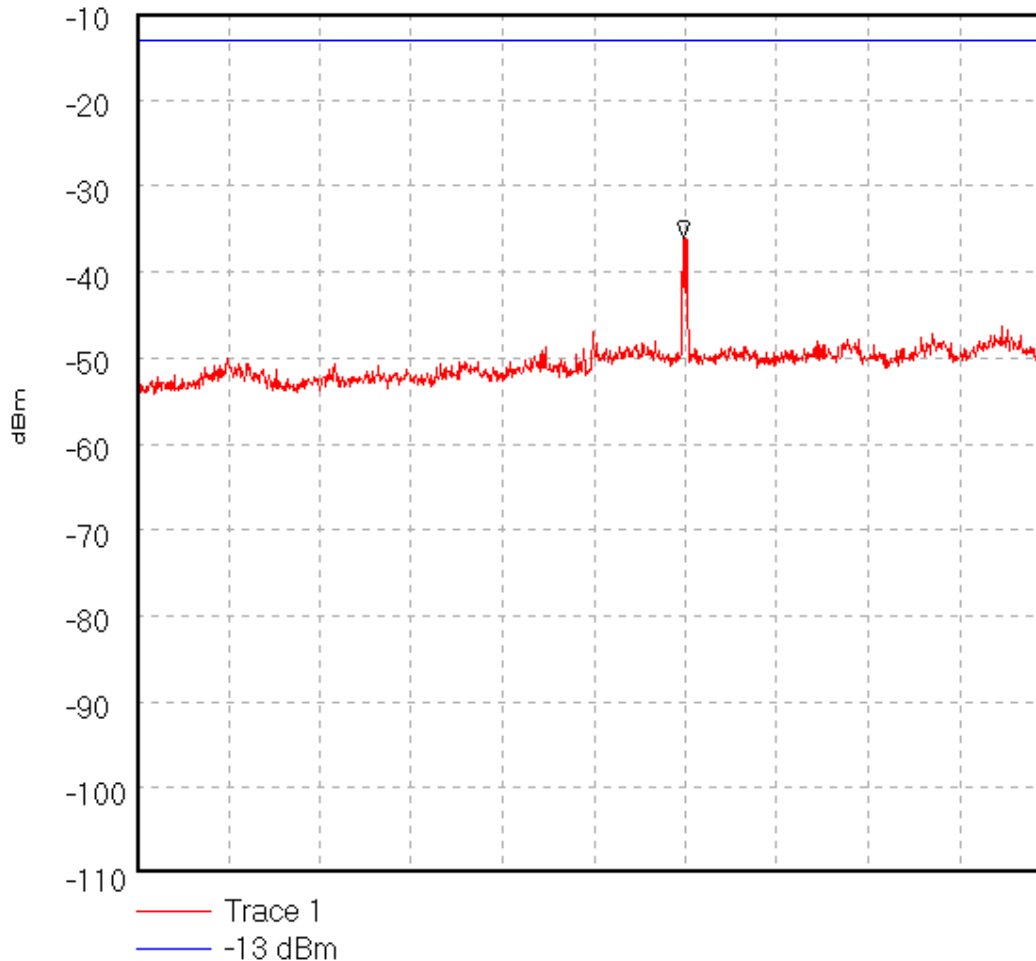
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\023

Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 023



Start 4.0 GHz; Stop 6.0 GHz

Ref -10 dBm; Ref Offset 30.3 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 5.196 GHz, -36.02 dBm

Display Line: -13 dBm;

26/02/03 14:50:18

Test Of: IPWireless U.K. Ltd.

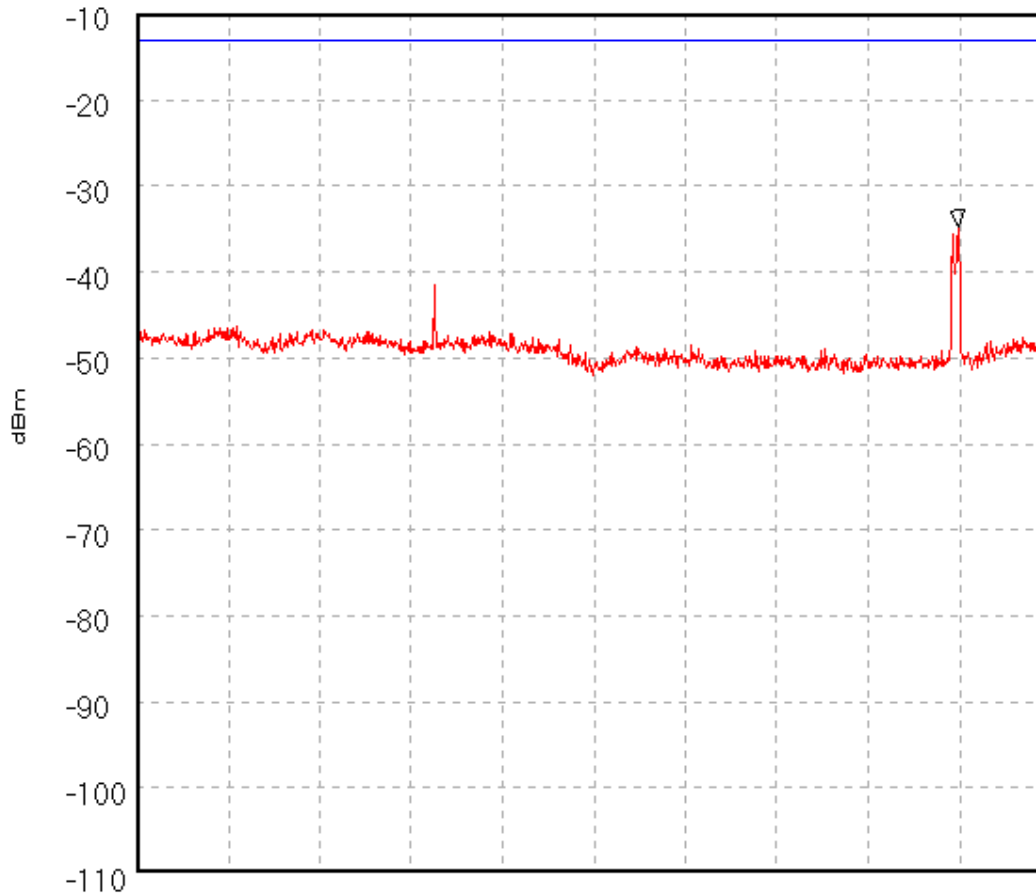
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\026

Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 026



Trace 1
-13 dBm

Start 6.0 GHz; Stop 8.0 GHz

Ref -10 dBm; Ref Offset 32.8 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 7.8 GHz, -34.83 dBm

Display Line: -13 dBm;

26/02/03 15:02:42

Test Of: IPWireless U.K. Ltd.

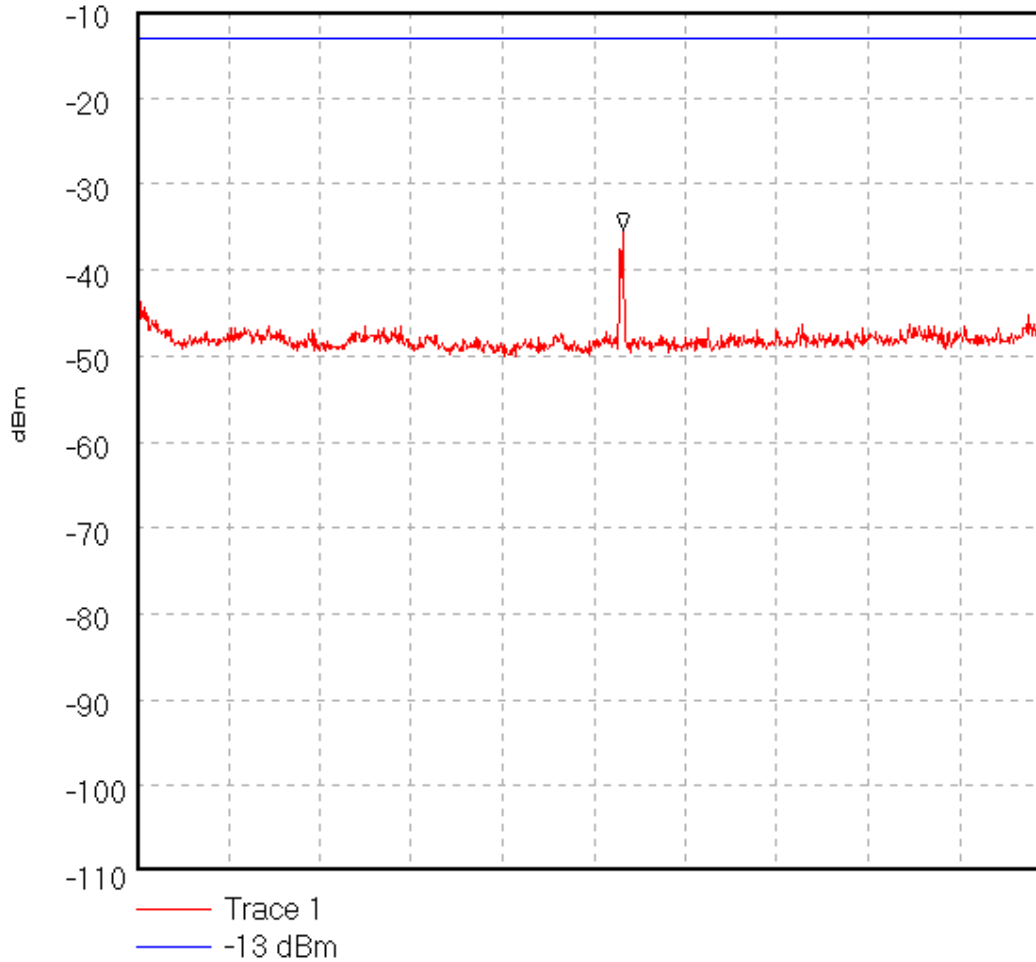
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\029

Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 029



Start 8.0 GHz; Stop 12.5 GHz

Ref -10 dBm; Ref Offset 36.1 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 10.395 GHz, -35.34 dBm

Display Line: -13 dBm;

26/02/03 15:20:24

Test Of: IPWireless U.K. Ltd.

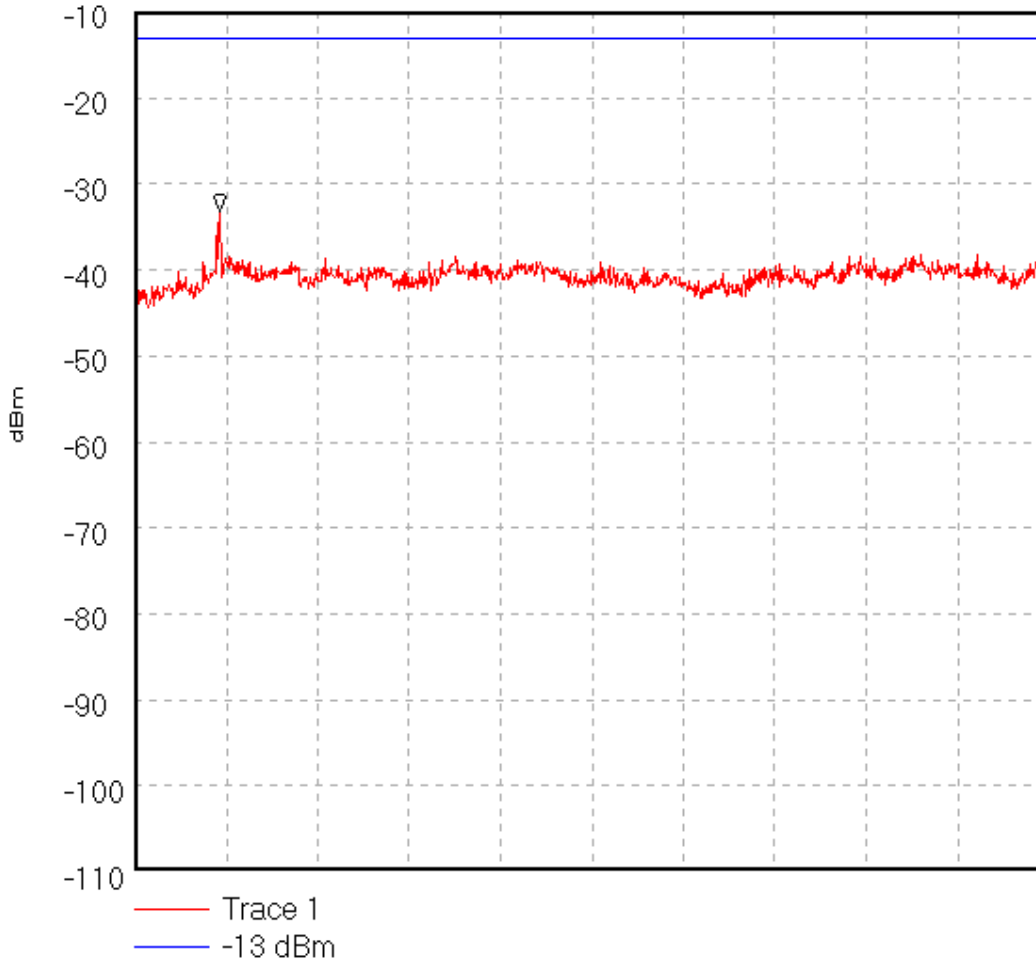
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\032

Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 032



Start 12.5 GHz; Stop 18.0 GHz

Ref -10 dBm; Ref Offset 41.0 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 13.007 GHz, -33.15 dBm

Display Line: -13 dBm;

26/02/03 15:42:36

Test Of: IPWireless U.K. Ltd.

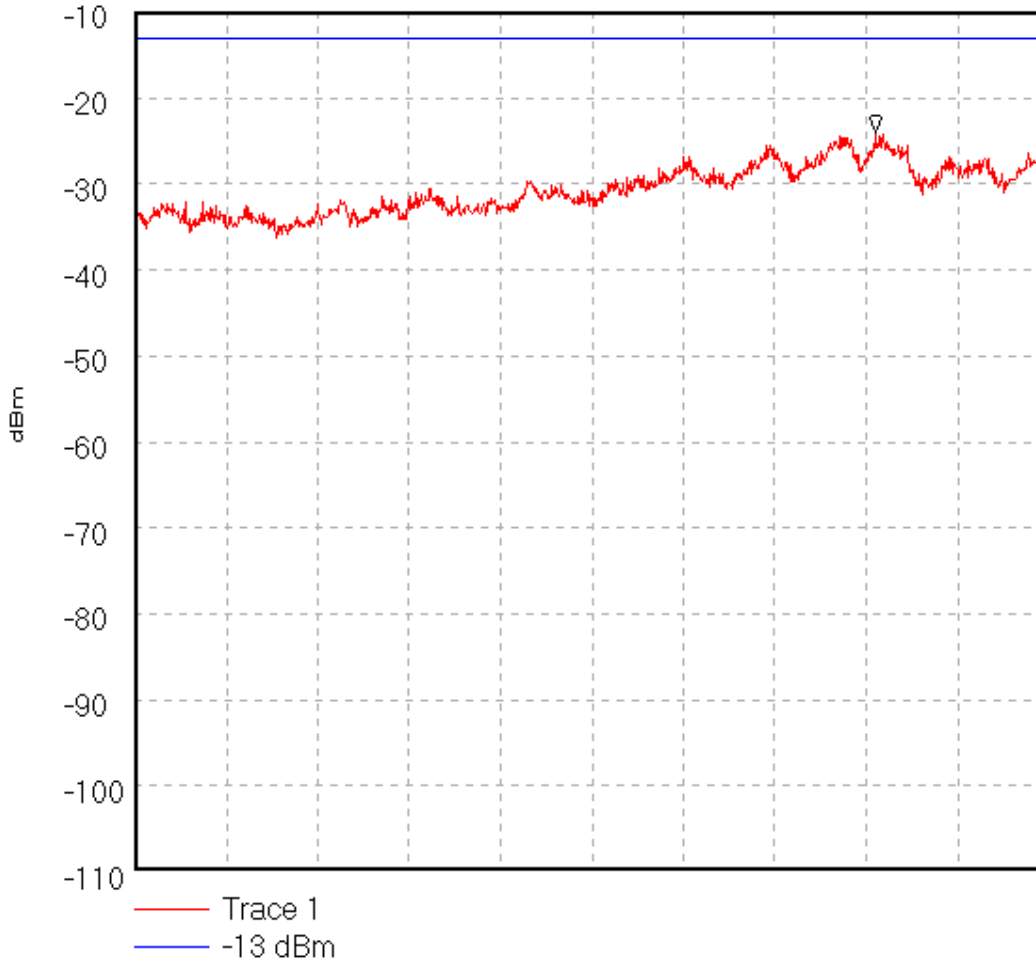
UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\035

Radiated Spurious Emissions. Tx Mode - Middle Channel.

44493JD01 035



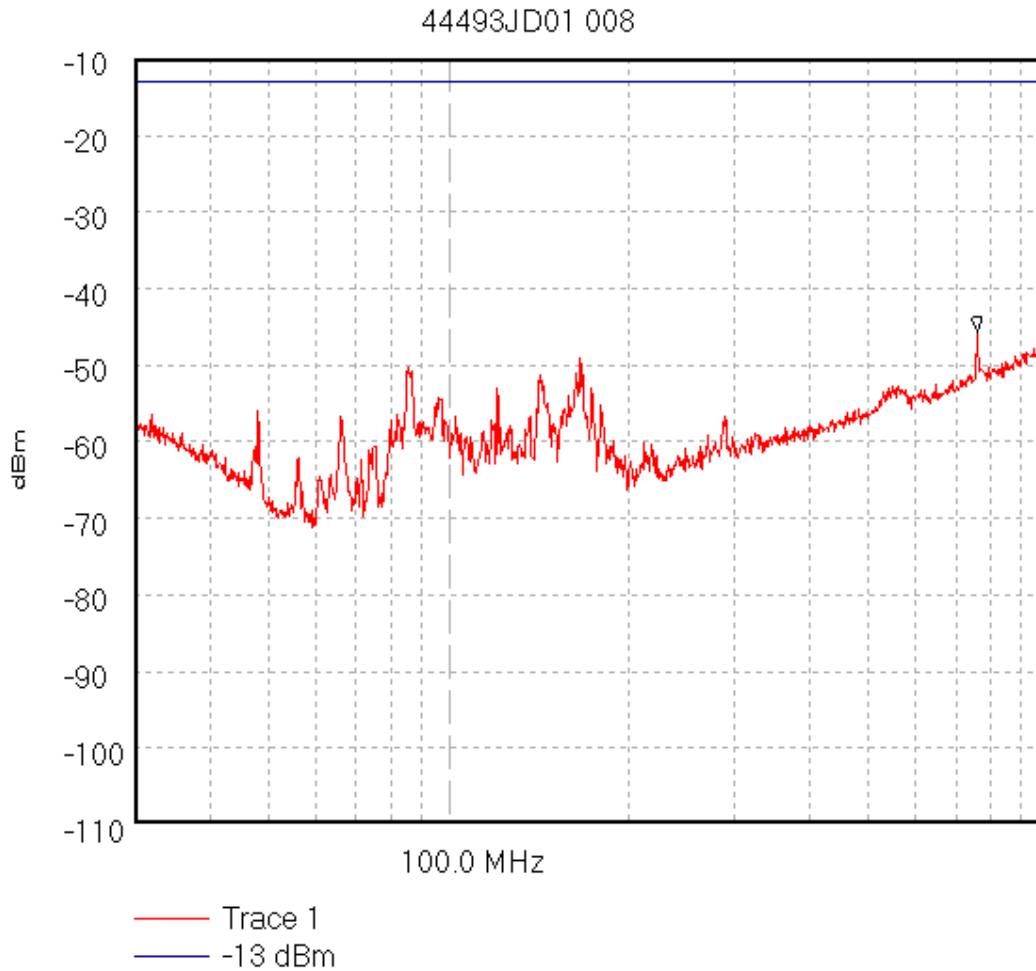
Start 18.0 GHz; Stop 26.5 GHz
Ref -10 dBm; Ref Offset 46.7 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 40.0 mS
Peak 24.894 GHz, -24.06 dBm
Display Line: -13 dBm;
26/02/03 16:06:04

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\008
Radiated Spurious Emissions. Tx Mode - Top Channel.



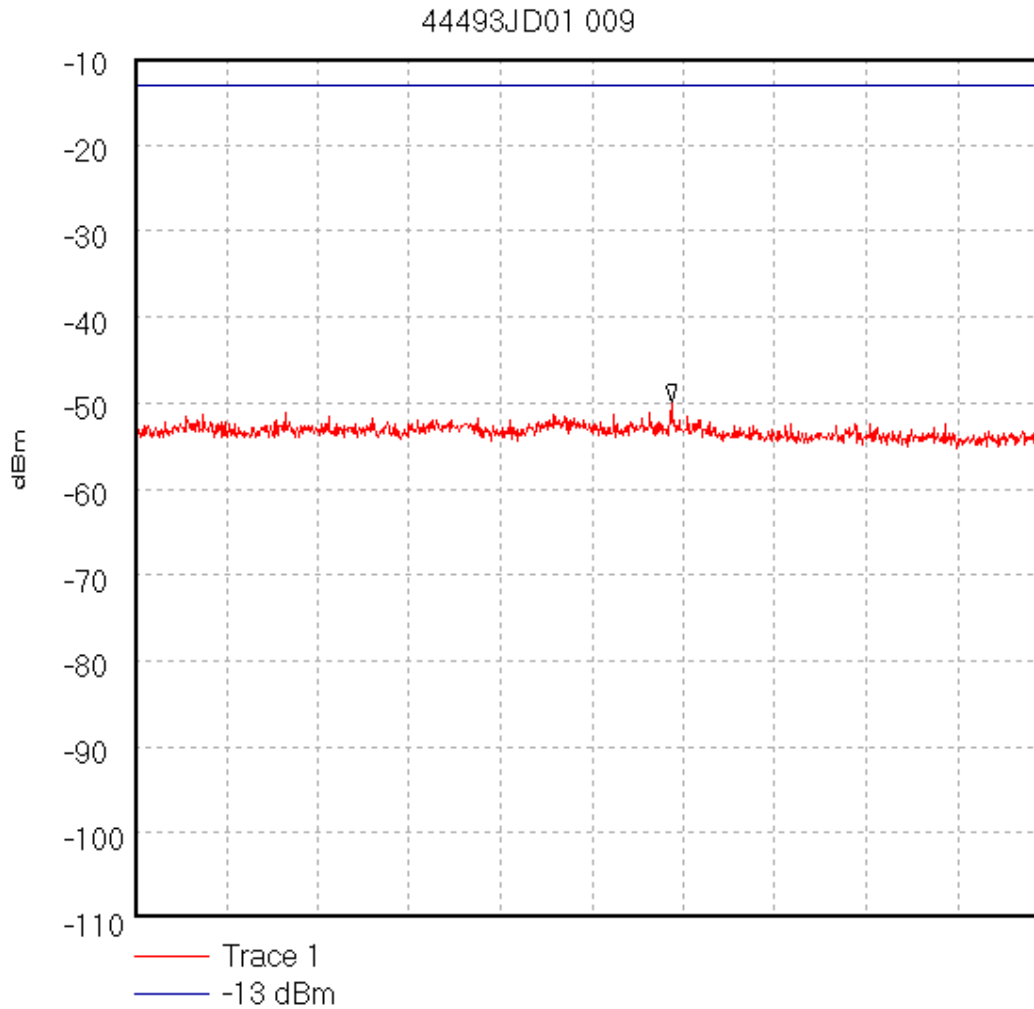
Start 30.0 MHz; Stop 1.0 GHz - Log Scale
Ref -10 dBm; Ref Offset 10.0 dB; 10 dB/div
RBW 120.0 kHz; VBW 100.0 kHz; Att 10 dB; Swp 80.0 mS
Peak 761.297 MHz, -45.67 dBm
Display Line: -13 dBm; ; Limit Test Passed
Transducer Factors: A490
26/02/2003 10:06:57

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\009
Radiated Spurious Emissions. Tx Mode - Top Channel.



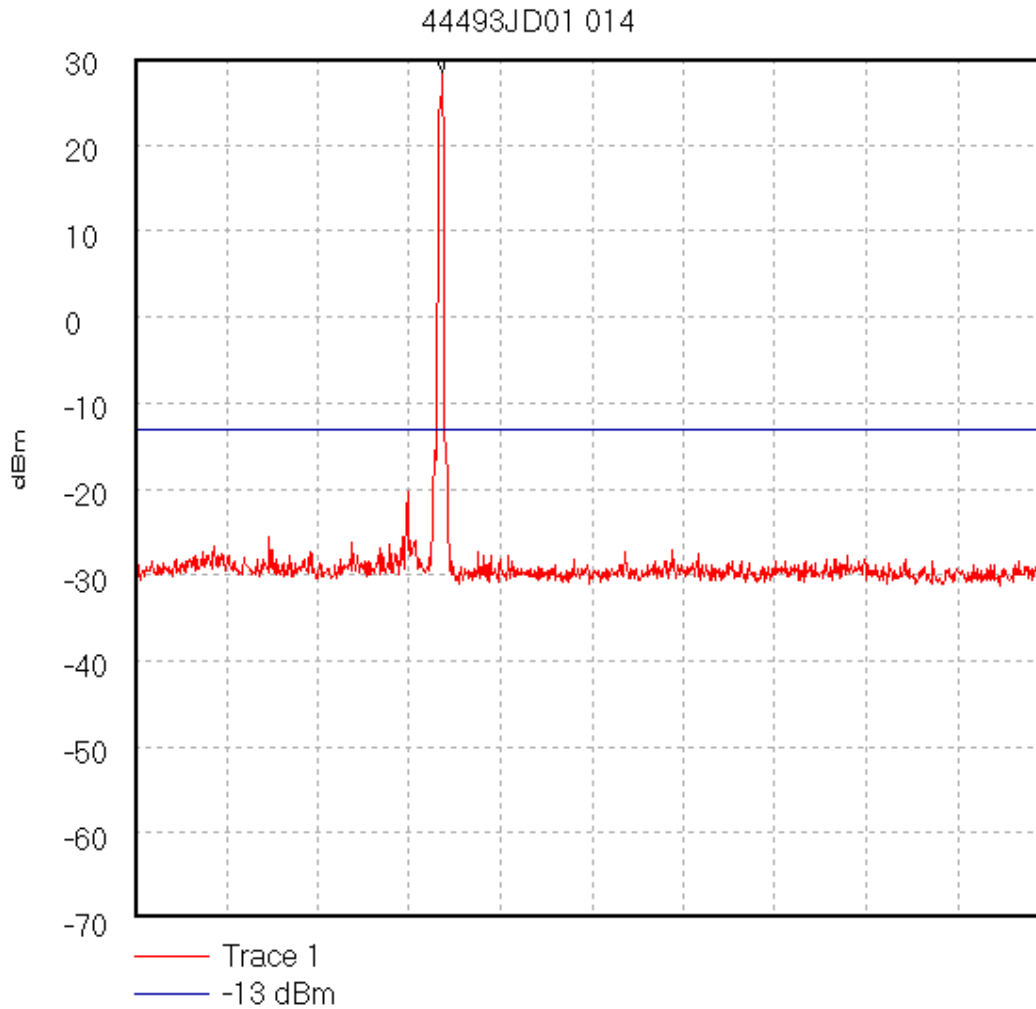
Start 1.0 GHz; Stop 2.0 GHz
Ref -10 dBm; Ref Offset 30.2 dB; 10 dB/div
RBW 1000.0 kHz; VBW 1.0 MHz; Att 10 dB; Swp 20.0 mS
Peak 1.588 GHz, -49.91 dBm
Display Line: -13 dBm; ; Limit Test Passed
26/02/2003 10:25:20

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\014
Radiated Spurious Emissions. Tx Mode - Top Channel.



Start 2.0 GHz; Stop 4.0 GHz

Ref 30 dBm; Ref Offset 37.7 dB; 10 dB/div

RBW 1000.0 kHz; VBW 1.0 MHz; Att 20 dB; Swp 20.0 mS

Peak 2.673 GHz, 28.43 dBm

Display Line: -13 dBm; ; Limit Test Failed

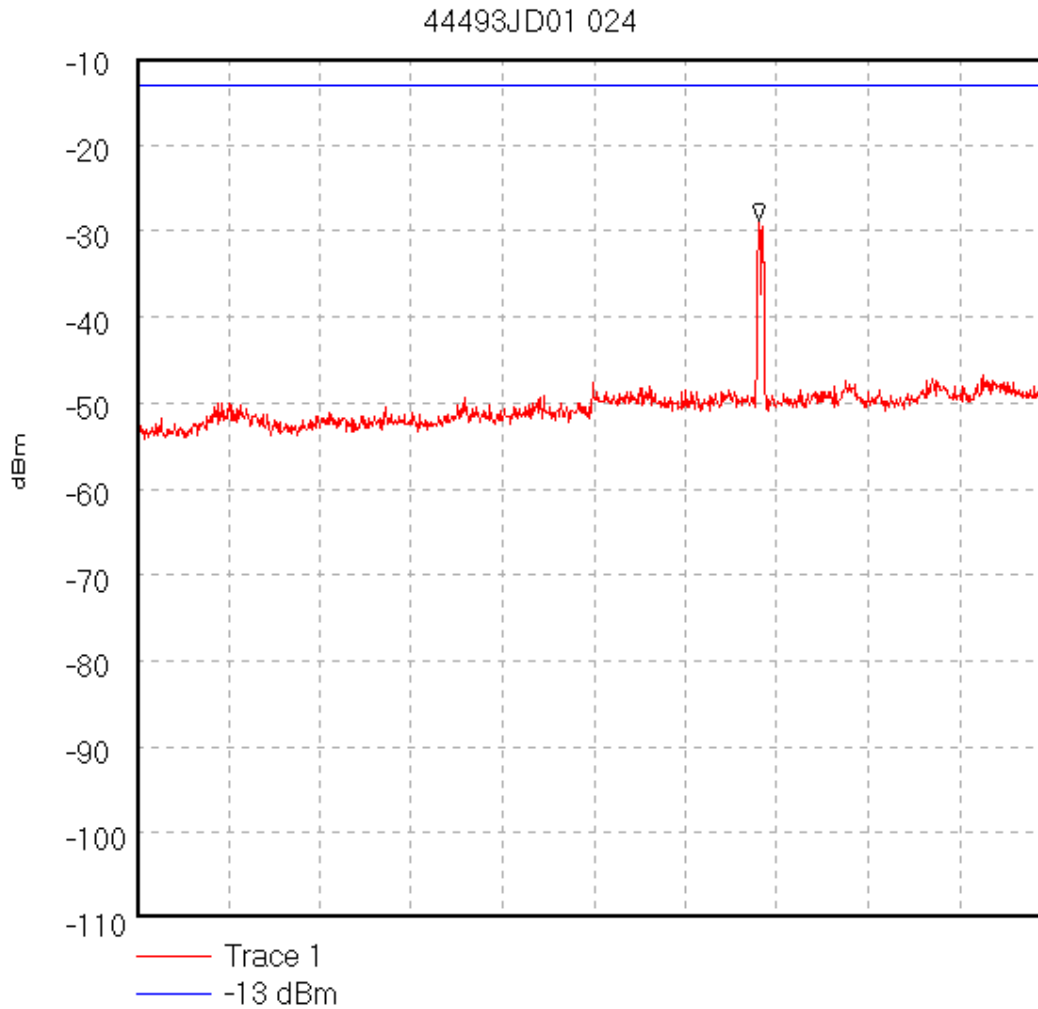
26/02/2003 11:13:26

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\024
Radiated Spurious Emissions. Tx Mode - Top Channel.



Start 4.0 GHz; Stop 6.0 GHz

Ref -10 dBm; Ref Offset 30.3 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 5.362 GHz, -28.79 dBm

Display Line: -13 dBm;

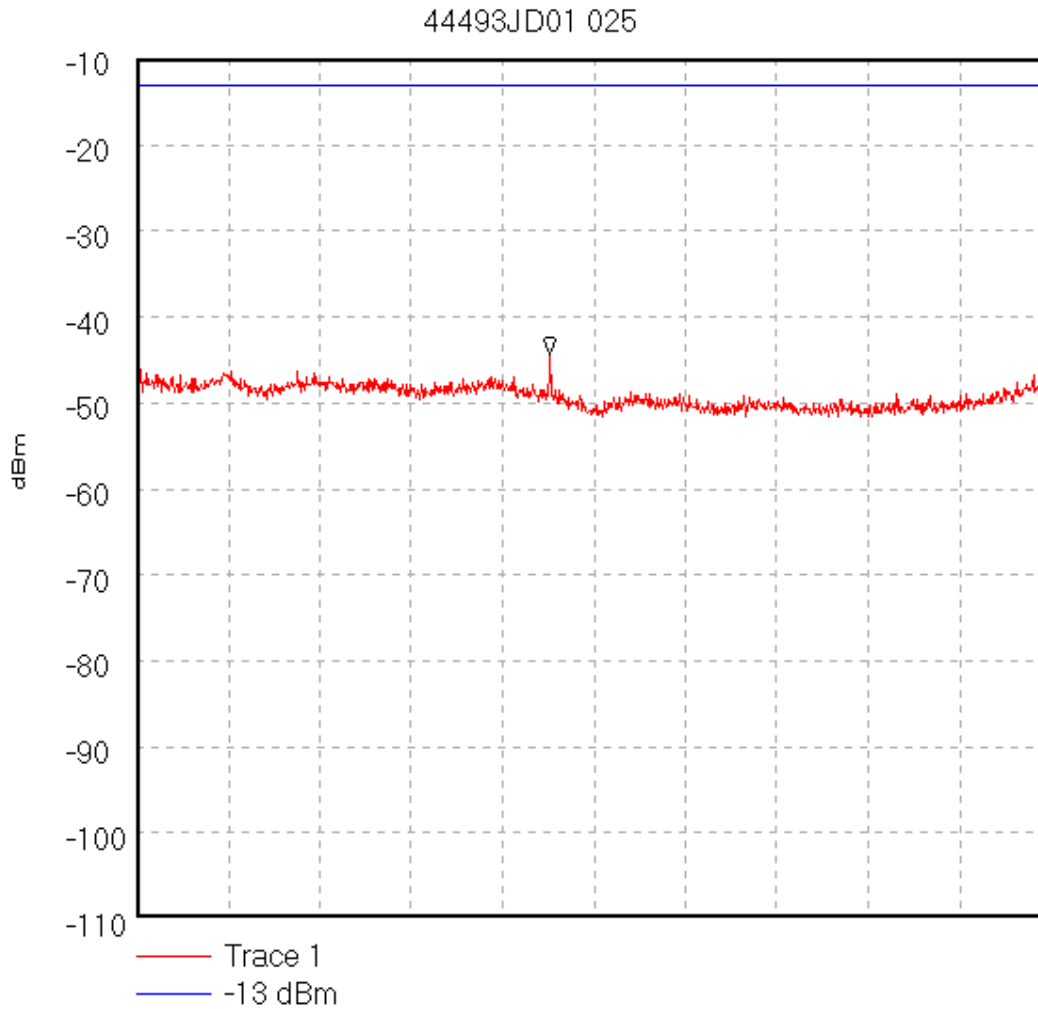
26/02/03 14:52:44

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\025
Radiated Spurious Emissions. Tx Mode - Top Channel.



Start 6.0 GHz; Stop 8.0 GHz

Ref -10 dBm; Ref Offset 32.8 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 6.904 GHz, -44.4 dBm

Display Line: -13 dBm;

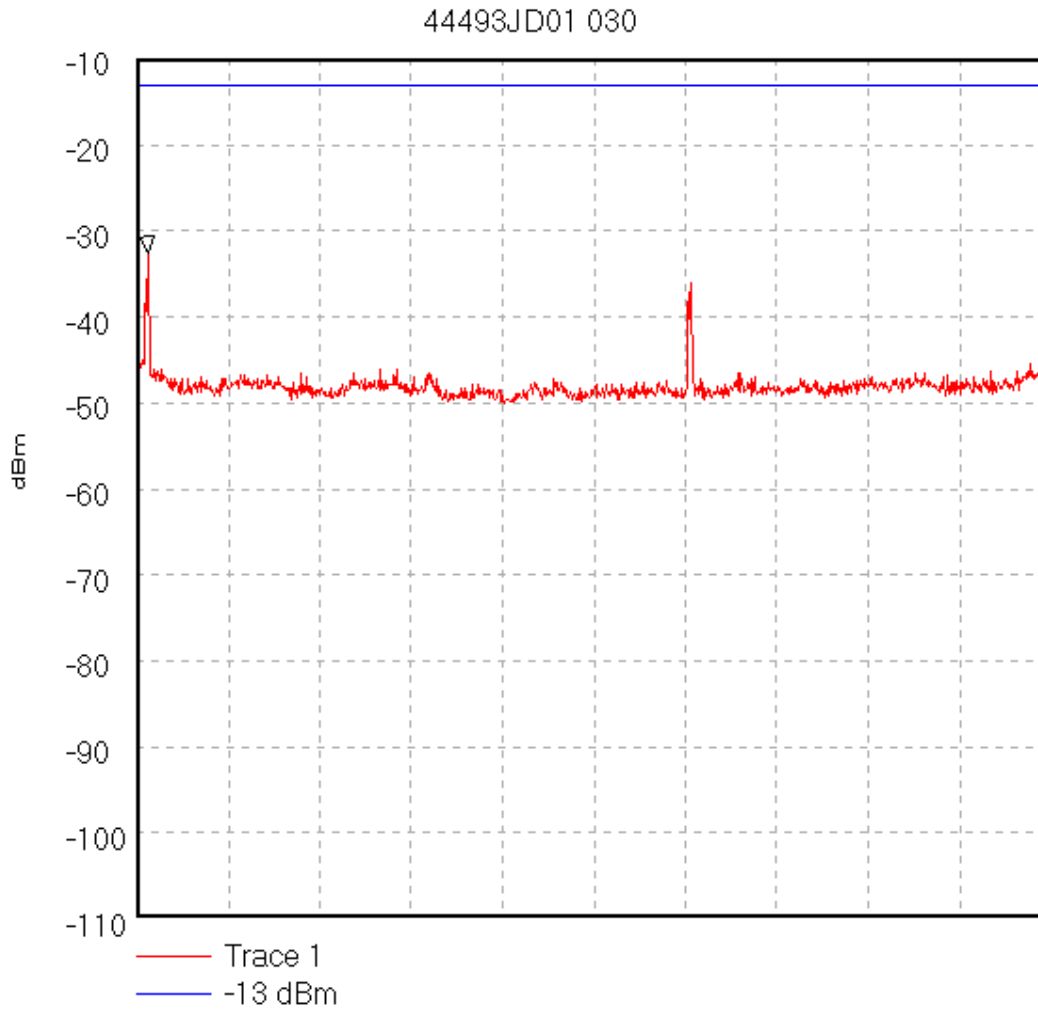
26/02/03 14:57:17

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\030
Radiated Spurious Emissions. Tx Mode - Top Channel.



Start 8.0 GHz; Stop 12.5 GHz

Ref -10 dBm; Ref Offset 36.1 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 8.06 GHz, -32.67 dBm

Display Line: -13 dBm;

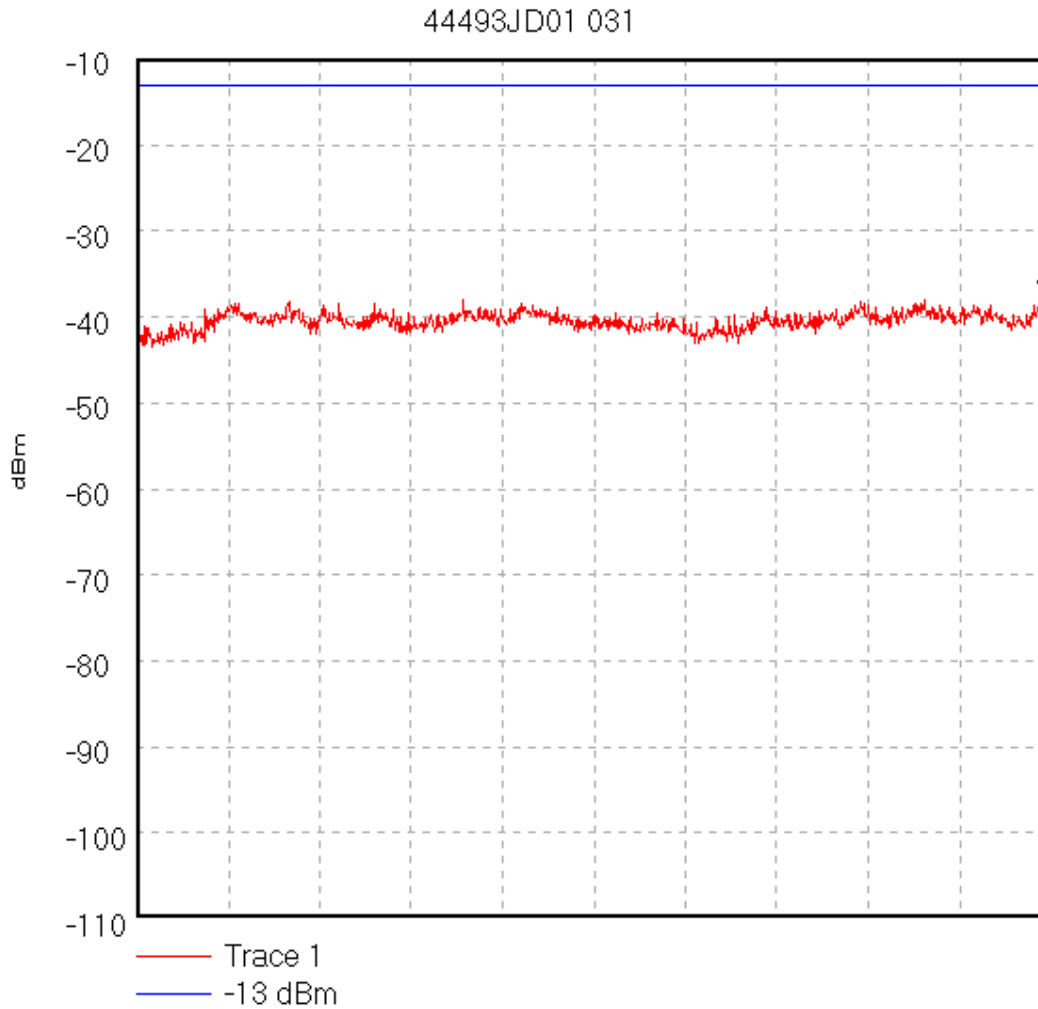
26/02/03 15:23:30

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\031
Radiated Spurious Emissions. Tx Mode - Top Channel.



Start 12.5 GHz; Stop 18.0 GHz

Ref -10 dBm; Ref Offset 41.0 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS

Peak 17.951 GHz, -37.62 dBm

Display Line: -13 dBm;

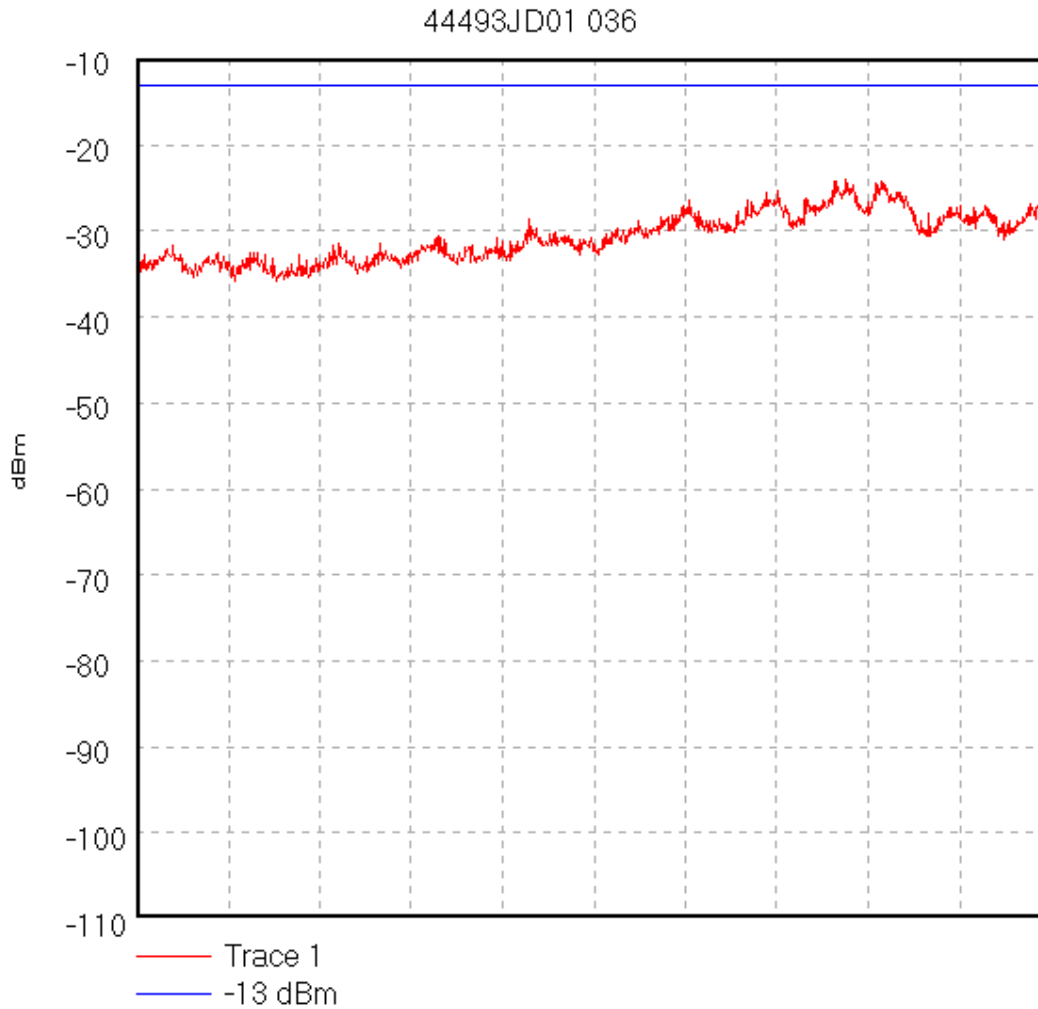
26/02/03 15:40:10

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\036
Radiated Spurious Emissions. Tx Mode - Top Channel.



Start 18.0 GHz; Stop 26.5 GHz

Ref -10 dBm; Ref Offset 46.7 dB; 10 dB/div

RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 40.0 mS

Peak 26.5 GHz, -23.78 dBm

Display Line: -13 dBm;

26/02/03 16:10:58

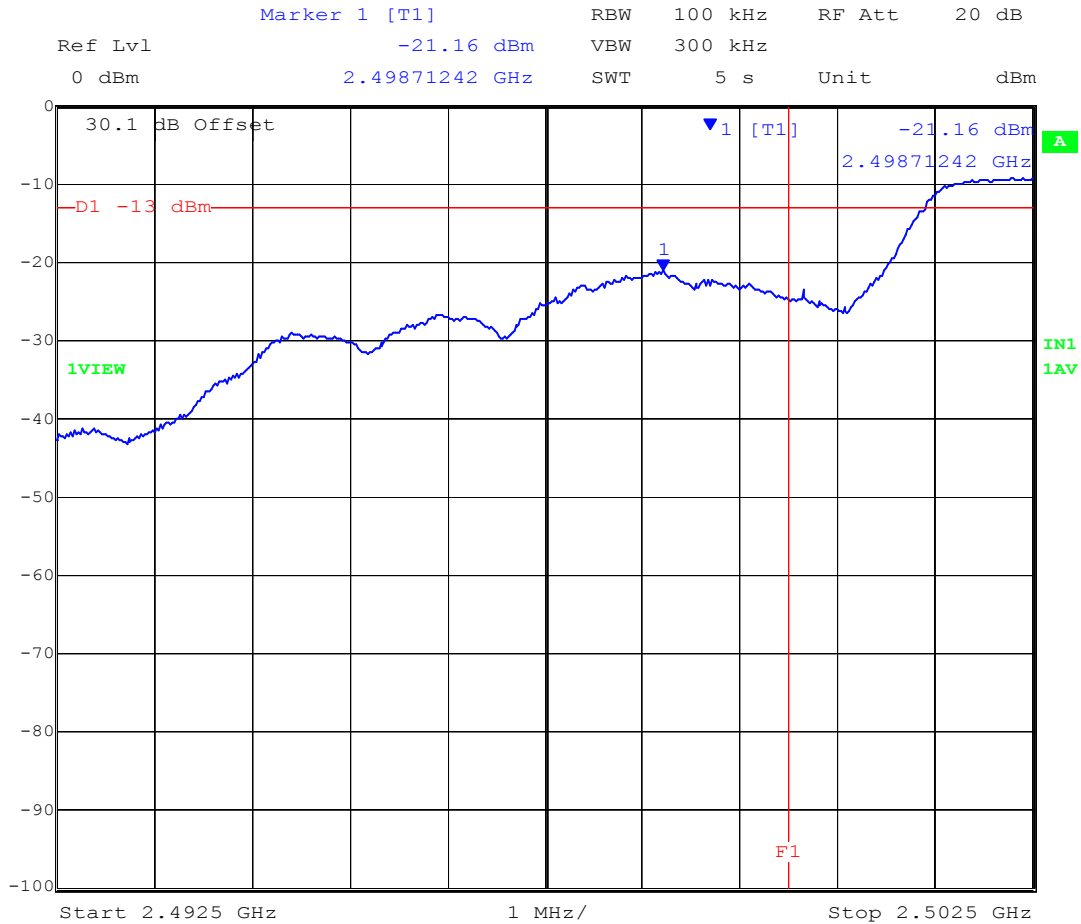
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\037

Radiated Spurious Emissions. Band Edge - Bottom Channel.



Title: Testing for IPWireless. EUT:UE P1C Model GY.

Comment A: Radiated Spurious Emissions - Band Edges. FCC Part 2.1051/21
.908/74.936 : Bottom Channel.

Date: 27.FEB.2003 10:16:18

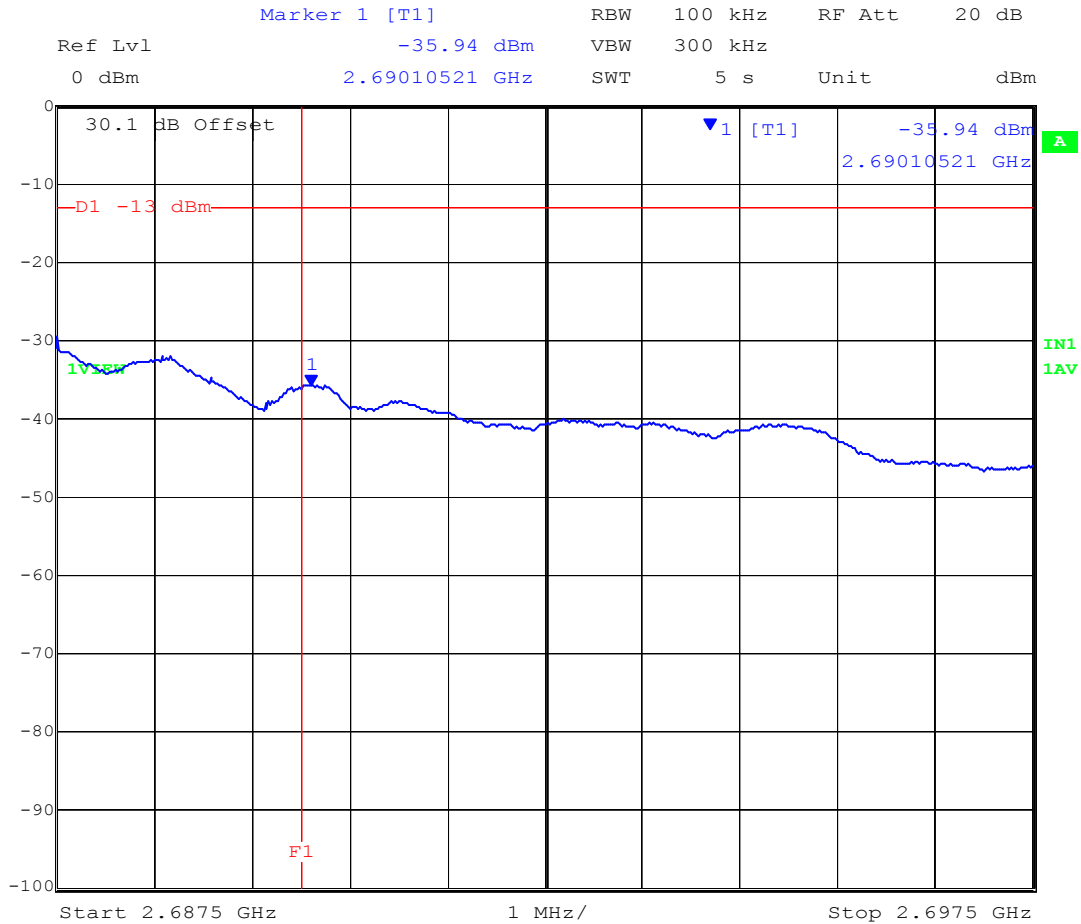
Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\038

Radiated Spurious Emissions. Band Edge - Top Channel.



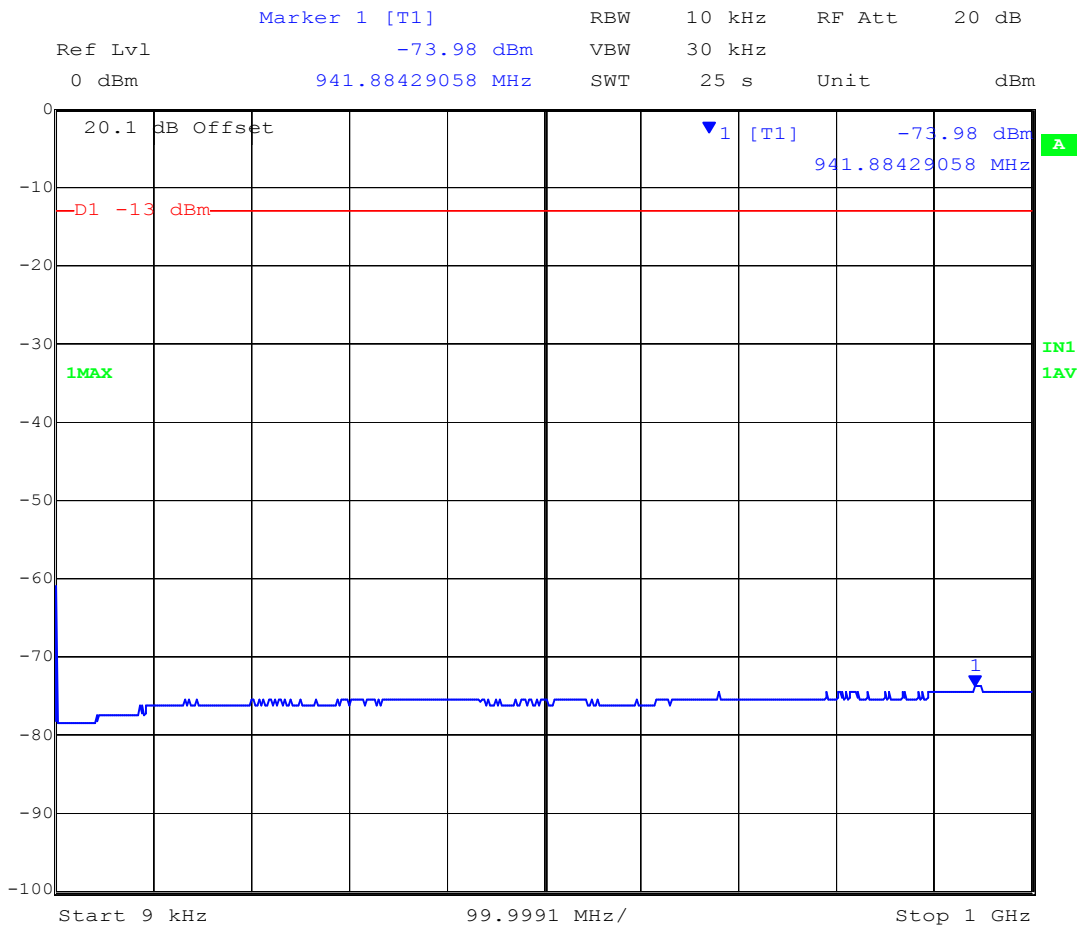
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Radiated Spurious Emissions - Band Edges. FCC Part 2.1051/21
.908/74.936 : Top Channel.
Date: 27.FEB.2003 10:02:25

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\039
Conducted Spurious Emissions. Bottom Channel



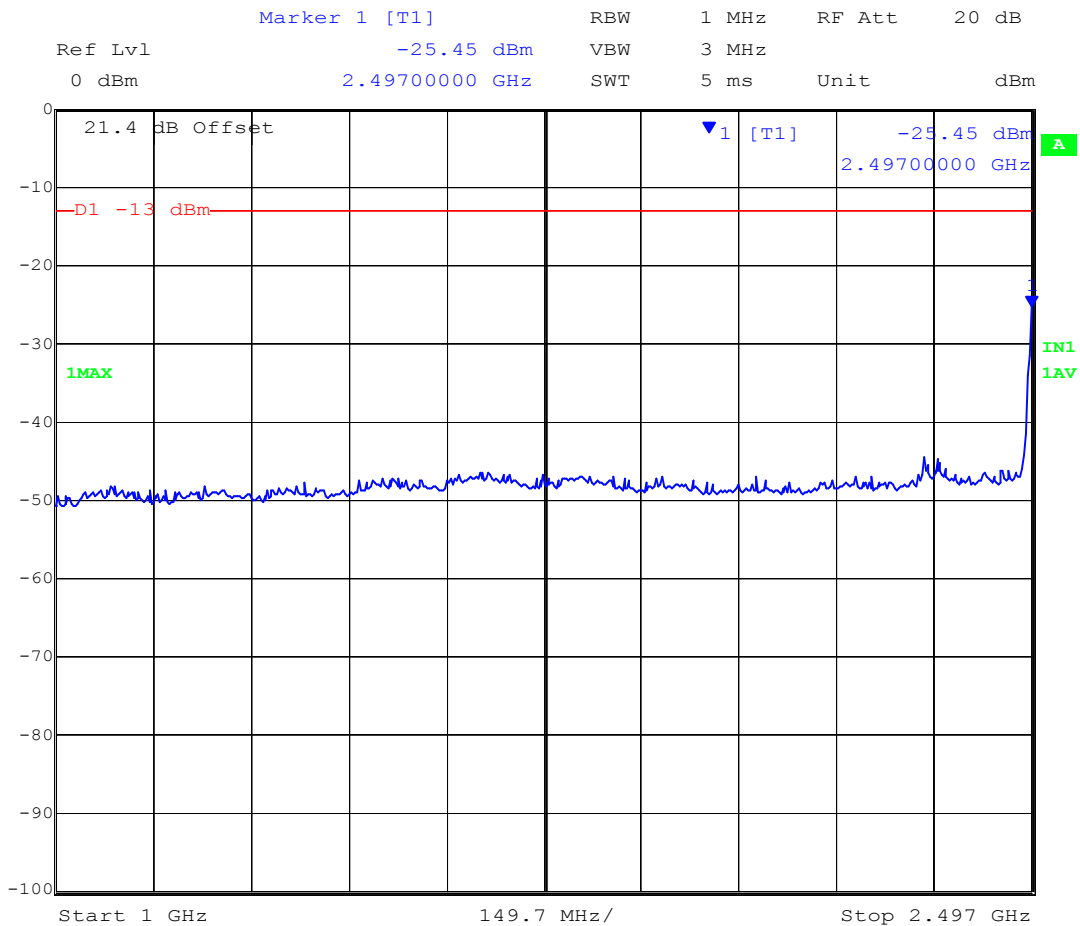
Title: Testing for IPWireless. EUT:UE P1C Model GY.
 Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
 6 : Bottom Channel.
 Date: 21.FEB.2003 12:08:28

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\040
Conducted Spurious Emissions. Bottom Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.

Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Bottom Channel.

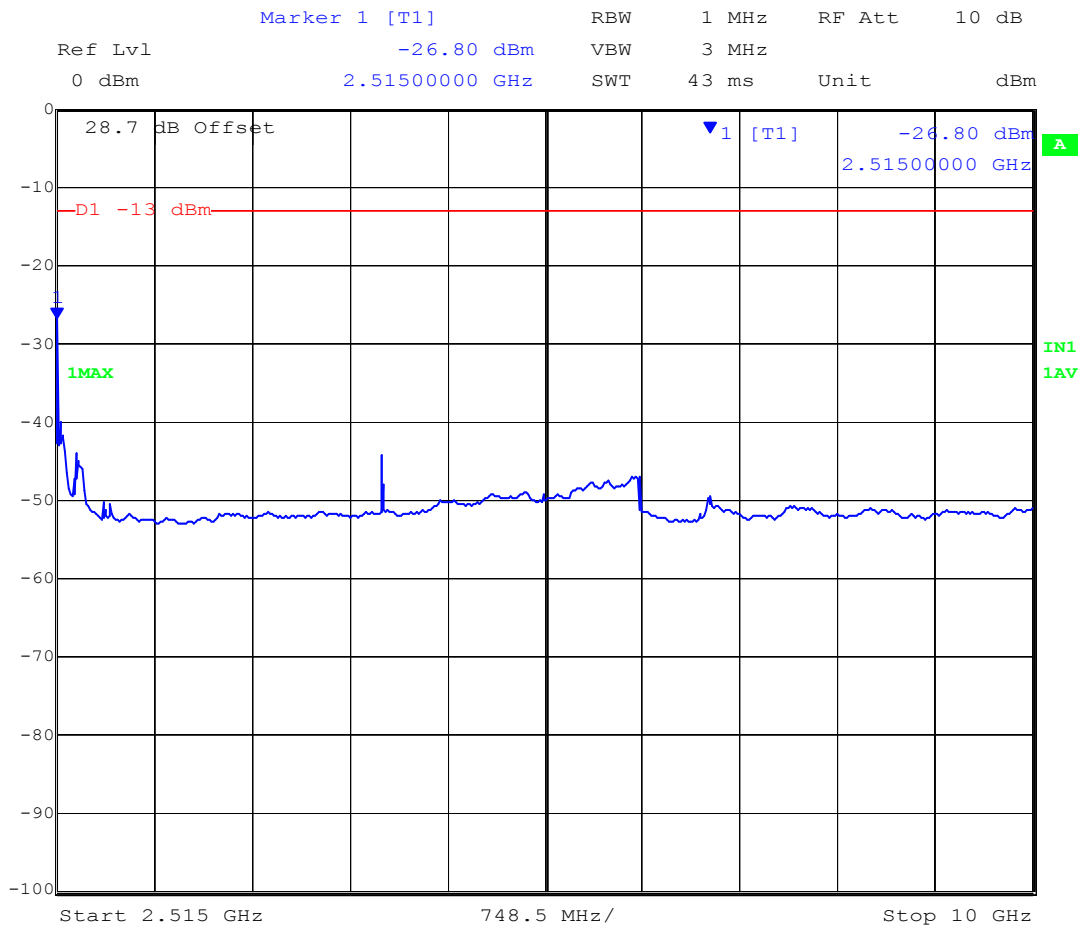
Date: 21.FEB.2003 11:50:31

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\041
Conducted Spurious Emissions. Bottom Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.

Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Bottom Channel.

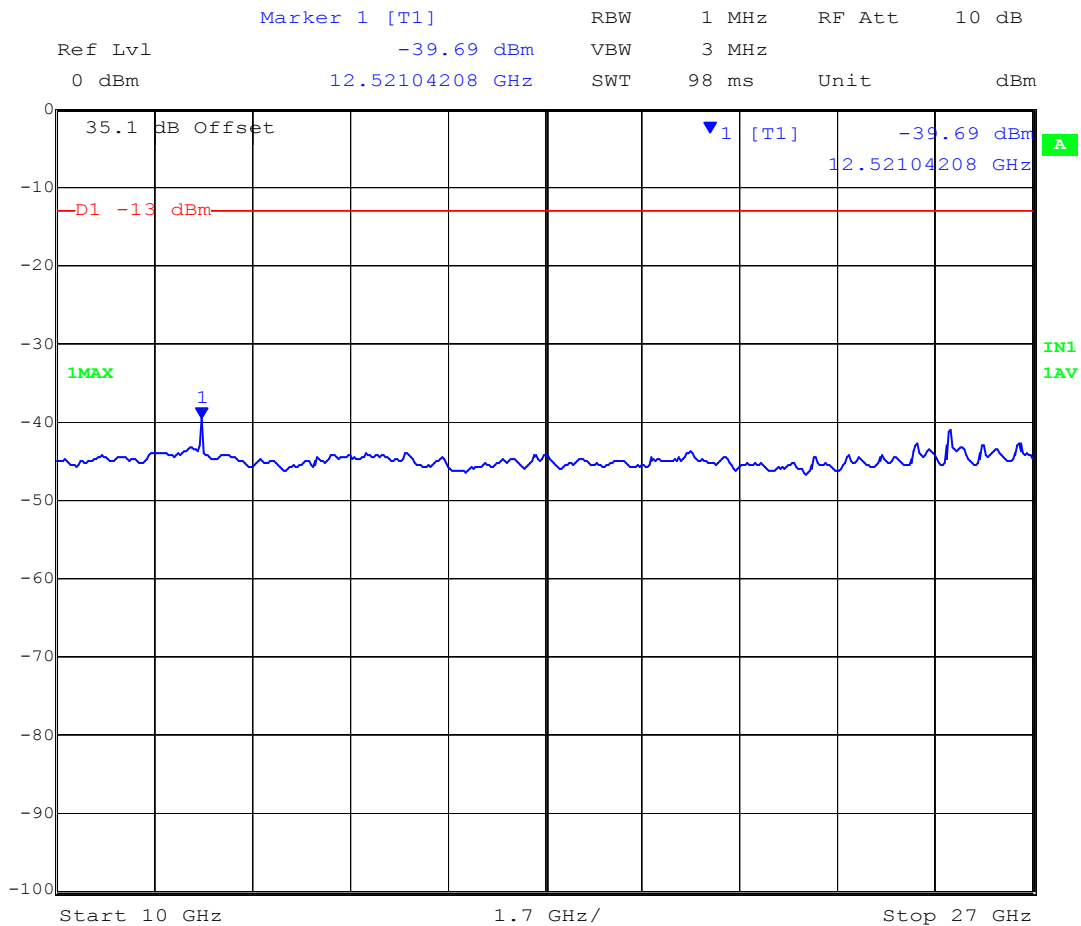
Date: 21.FEB.2003 13:35:30

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\042
Conducted Spurious Emissions. Bottom Channel



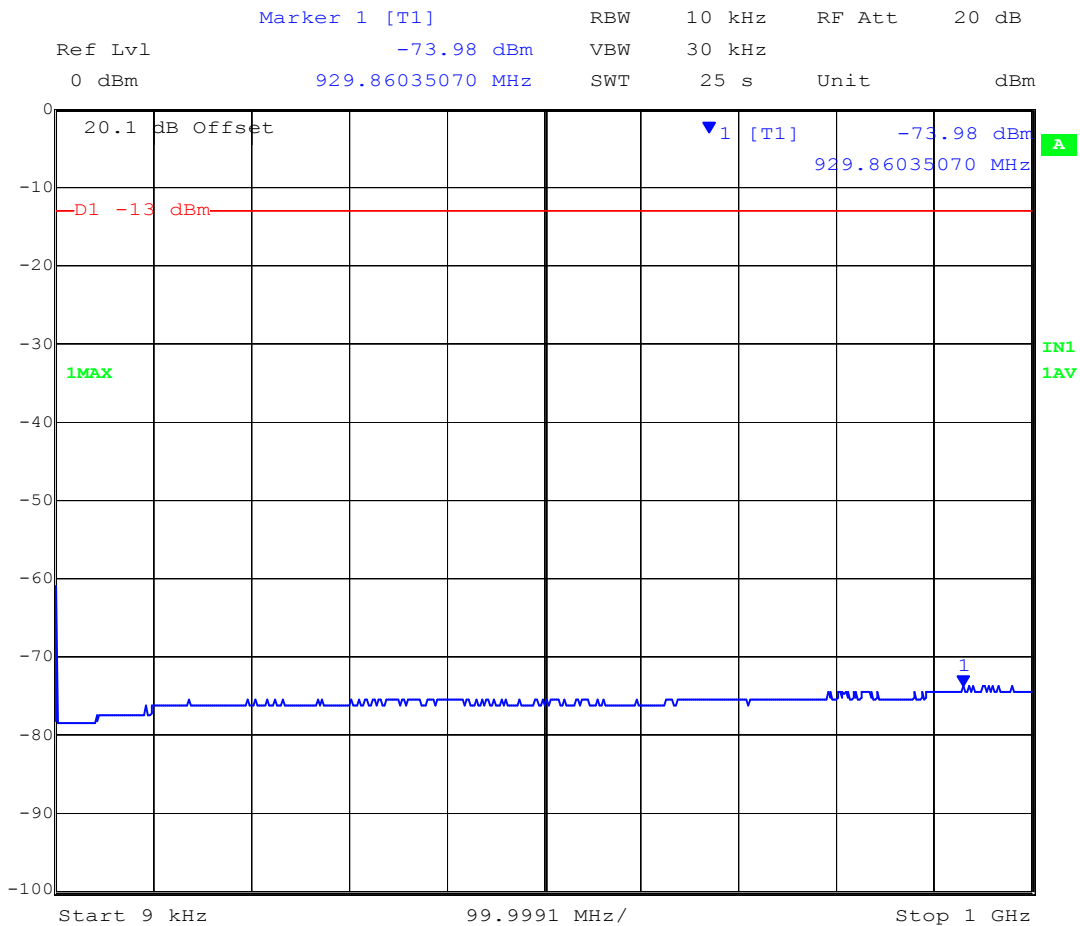
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Bottom Channel.
Date: 21.FEB.2003 14:16:24

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\043
Conducted Spurious Emissions. Middle Channel



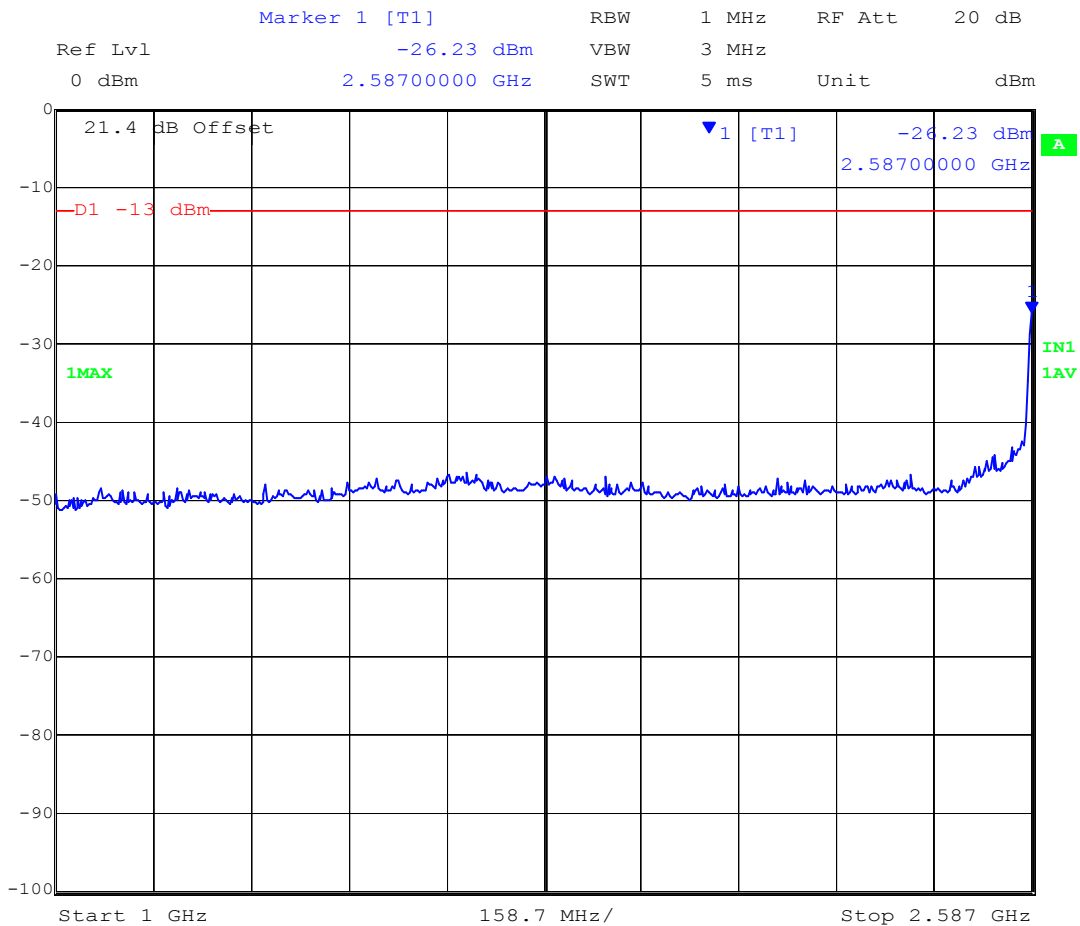
Title: Testing for IPWireless. EUT:UE P1C Model GY.
 Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
 6 : Middle Channel.
 Date: 21.FEB.2003 12:07:07

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\044
Conducted Spurious Emissions. Middle Channel



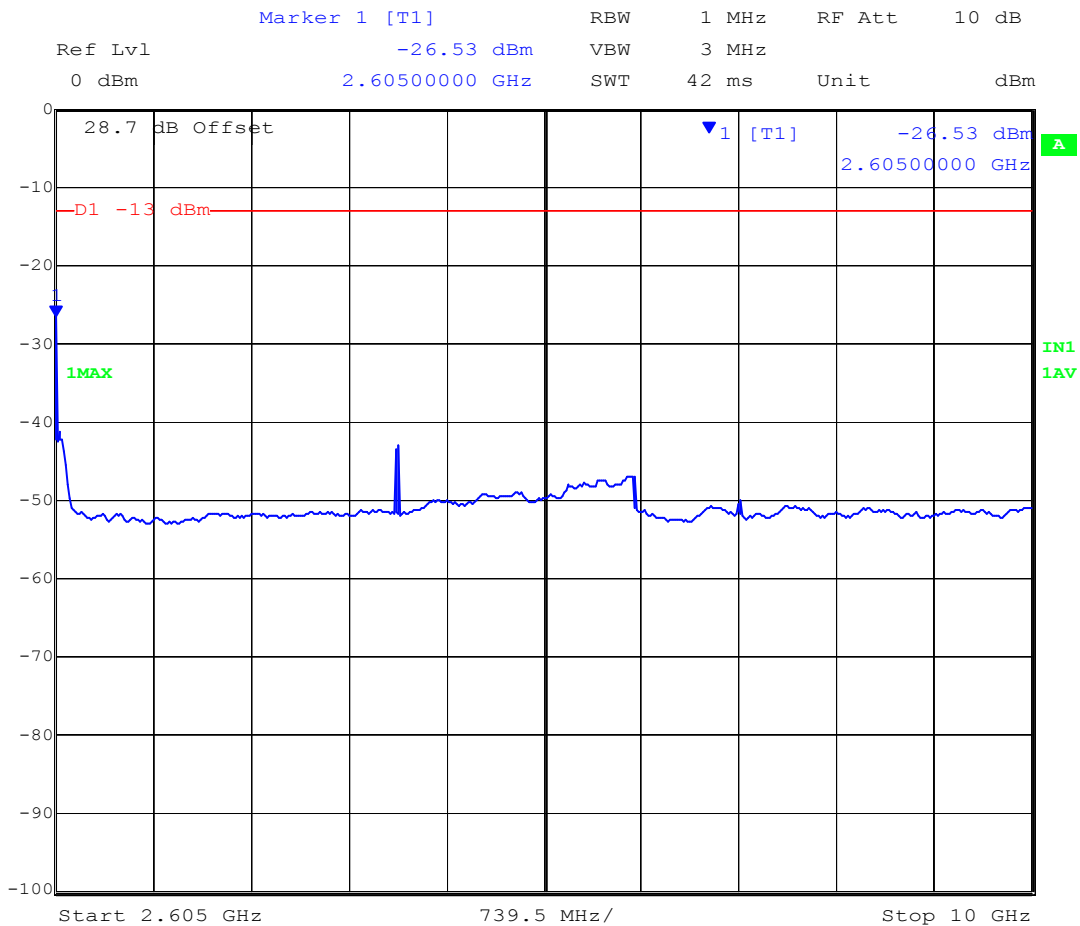
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Middle Channel.
Date: 21.FEB.2003 11:54:09

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\045
Conducted Spurious Emissions. Middle Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.

Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Middle Channel.

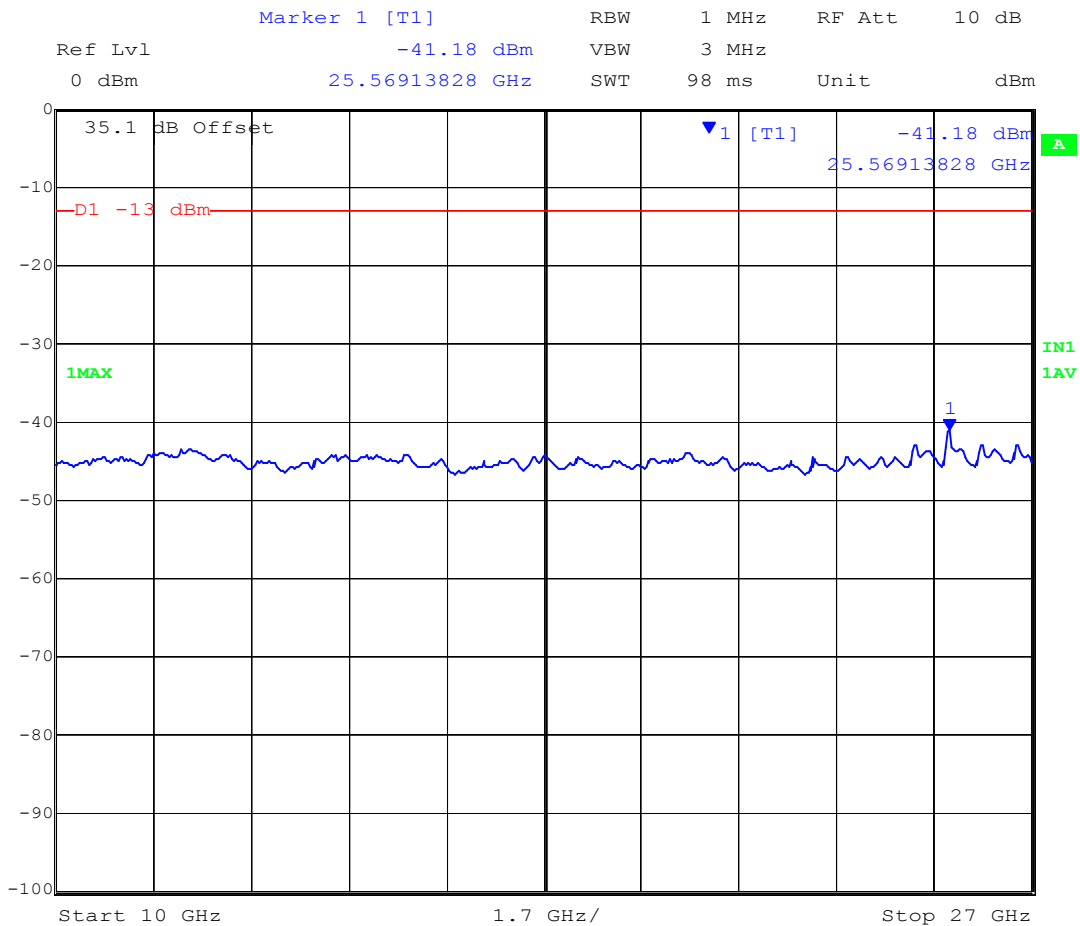
Date: 21.FEB.2003 13:39:46

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\046
Conducted Spurious Emissions. Middle Channel



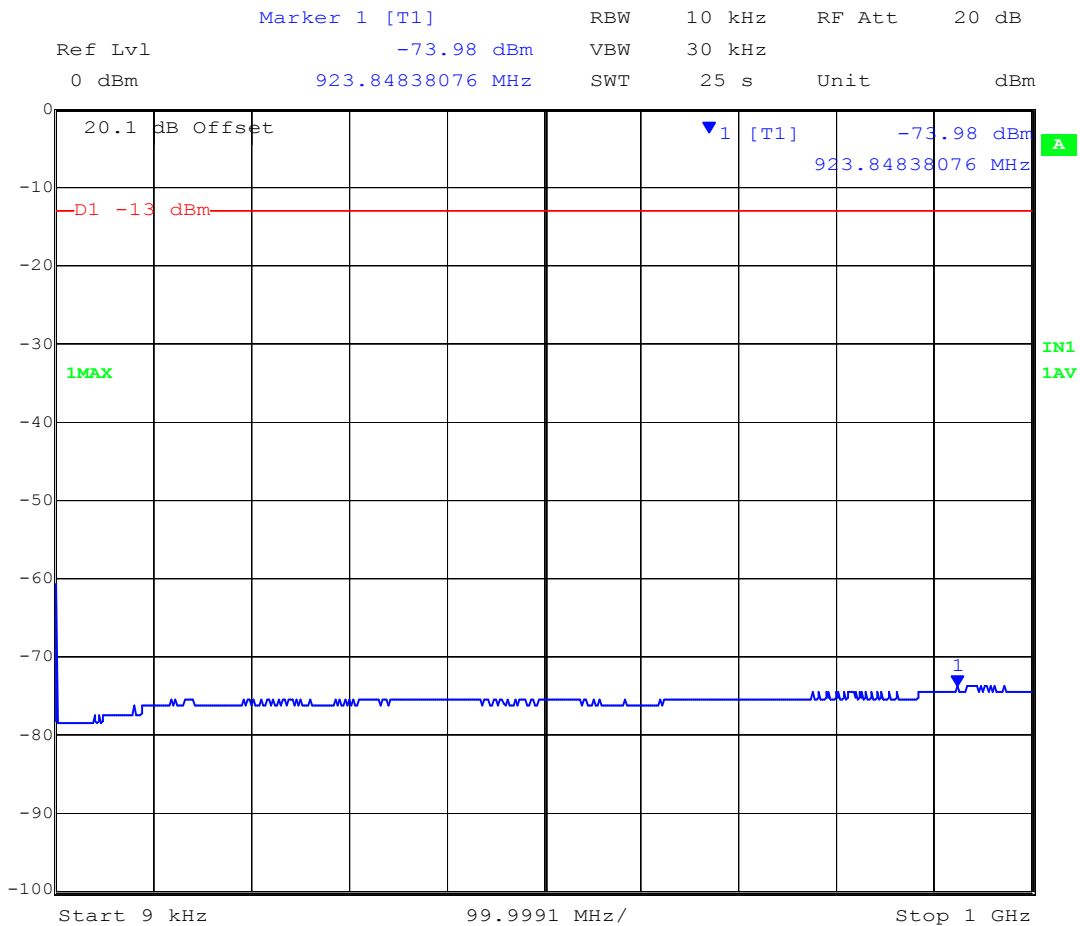
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Middle Channel.
Date: 21.FEB.2003 14:13:02

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\047
Conducted Spurious Emissions. Top Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.
 Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
 6 : Top Channel.
 Date: 21.FEB.2003 12:04:29

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\048
Conducted Spurious Emissions. Top Channel



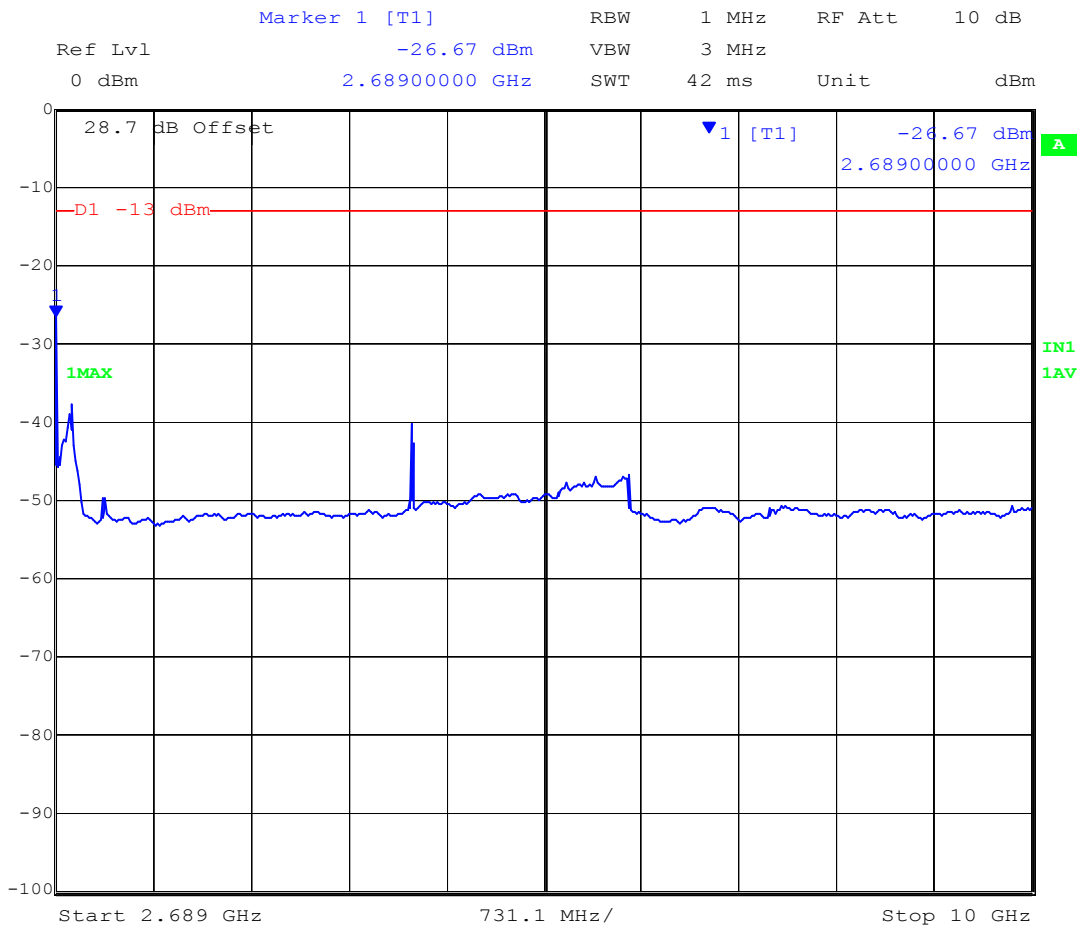
Title: Testing for IPWireless. EUT:UE P1C Model GY.
 Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
 6 : Top Channel.
 Date: 21.FEB.2003 11:55:15

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\049
Conducted Spurious Emissions. Top Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.

Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Top Channel.

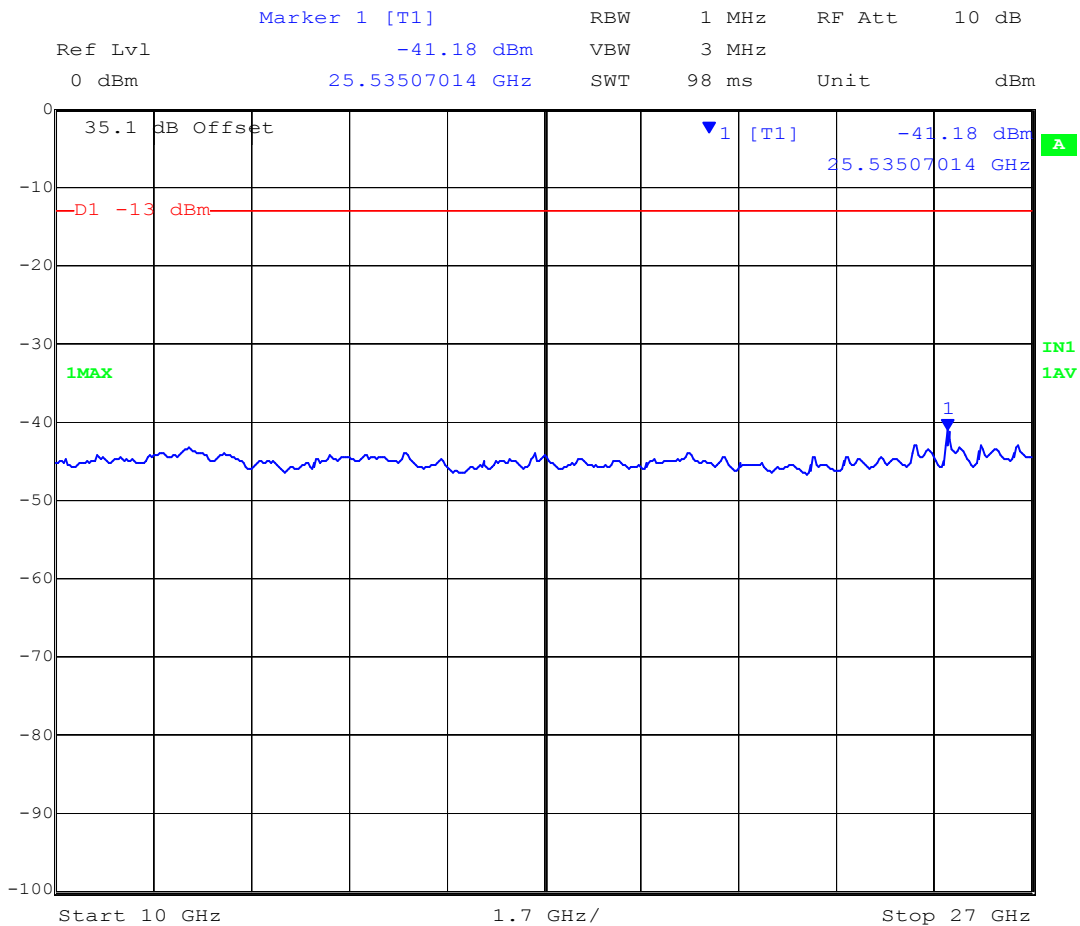
Date: 21.FEB.2003 13:46:35

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\050
Conducted Spurious Emissions. Top Channel



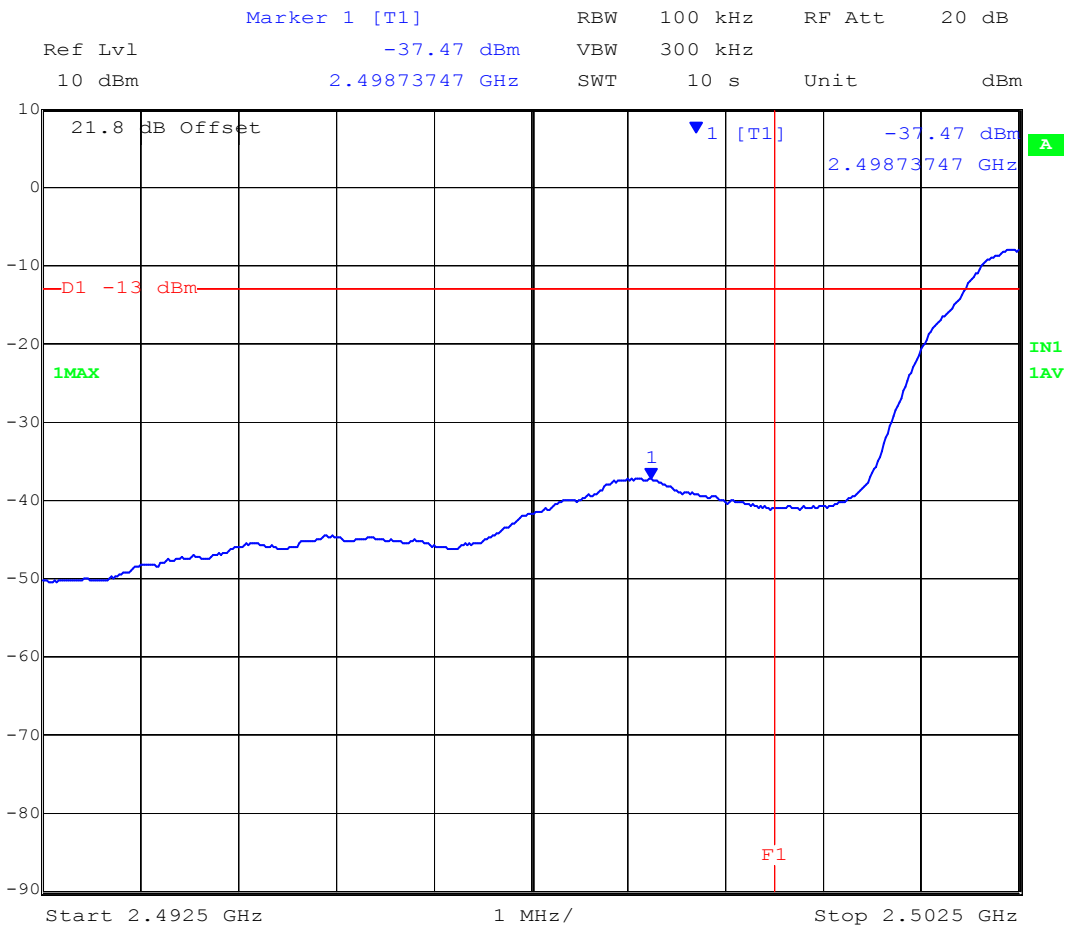
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Out-of-band Spurious Emissions. FCC Part 2.1051/21.908/74.93
6 : Top Channel.
Date: 21.FEB.2003 14:11:48

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\051
Conducted Spurious Emissions. Band Edge – Bottom Channel



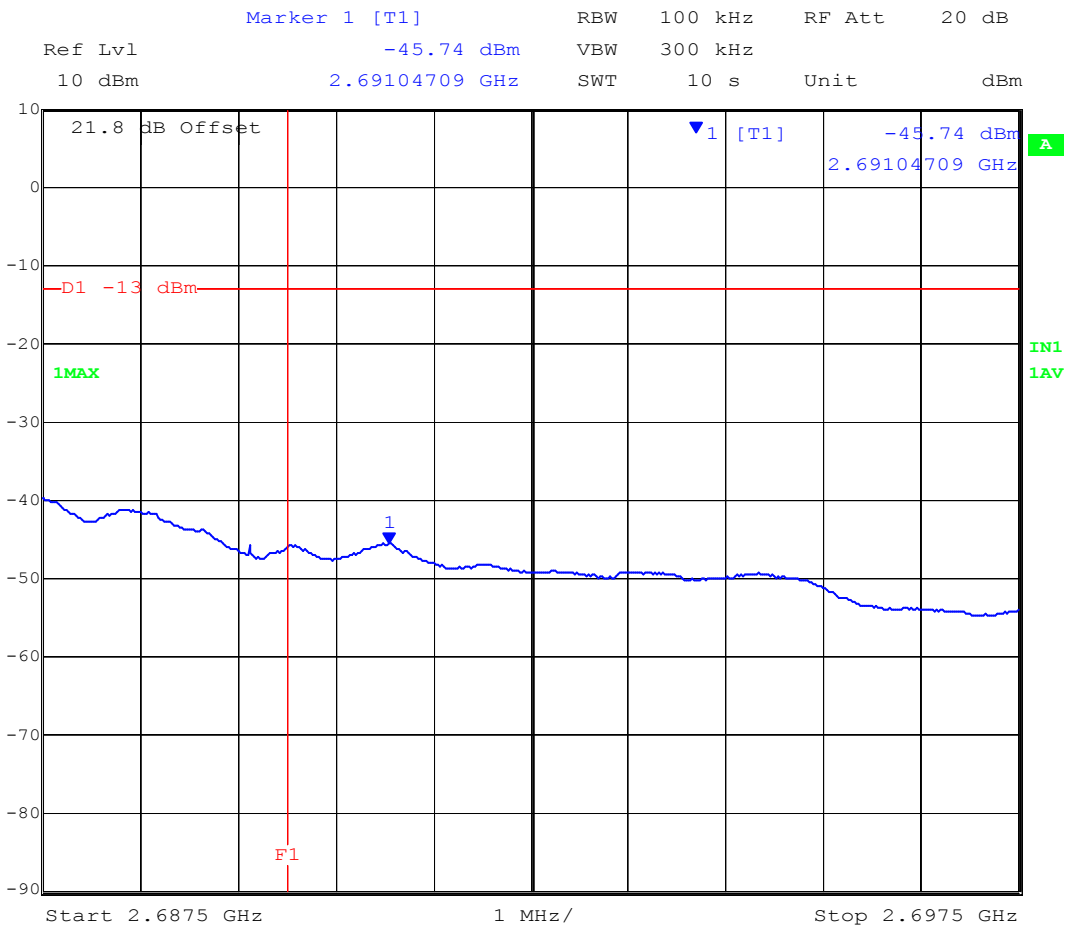
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Spurious Emissions - Band Edges. FCC Part 2.1051/21.908/74.9
36 : Bottom Channel.
Date: 21.FEB.2003 15:20:40

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH44493JD01\052
Conducted Spurious Emissions. Band Edge – Top Channel



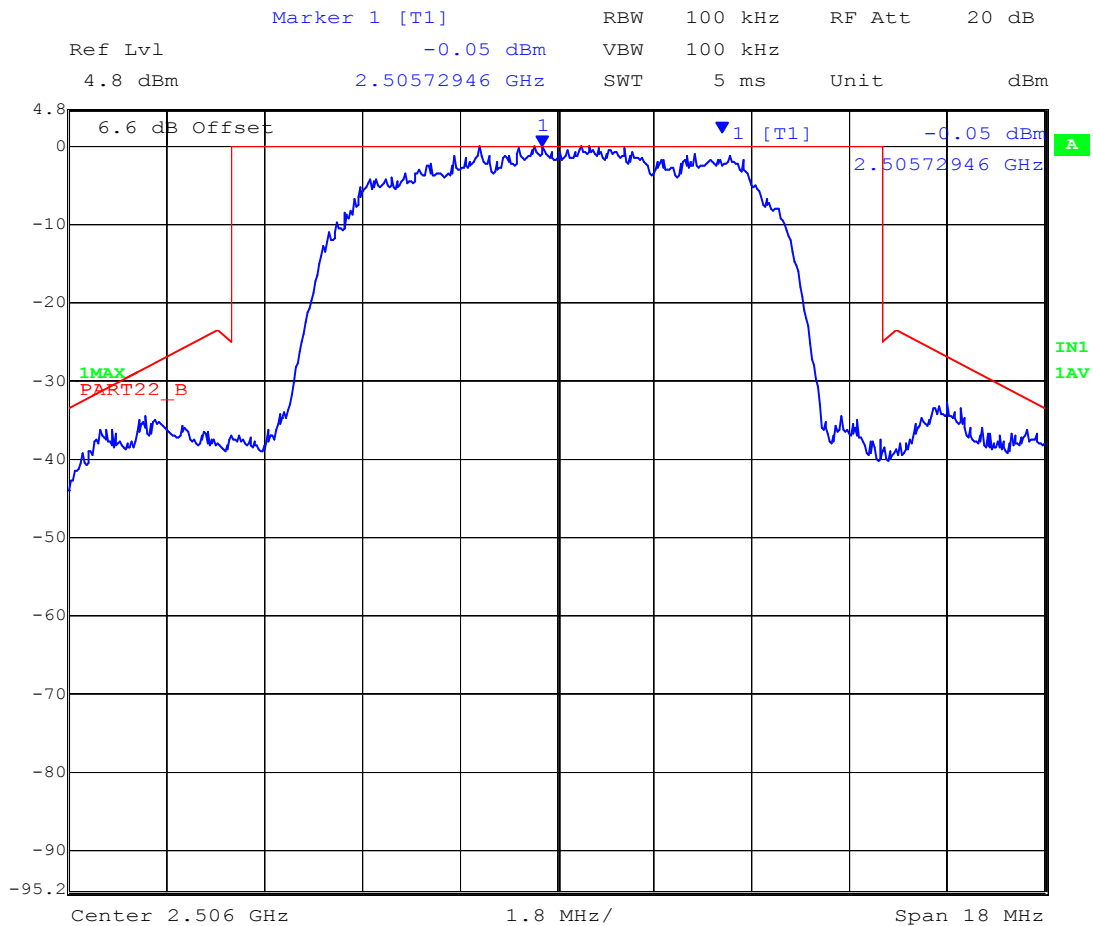
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Spurious Emissions - Band Edges. FCC Part 2.1051/21.908/74.9
36 : Top Channel.
Date: 21.FEB.2003 15:51:51

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\053
Out-of-Band Spectrum Mask. Bottom Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.

Comment A: Out-of-band Emissions. FCC Part 2.1051/21.908/74.936 : Bottom Channel.

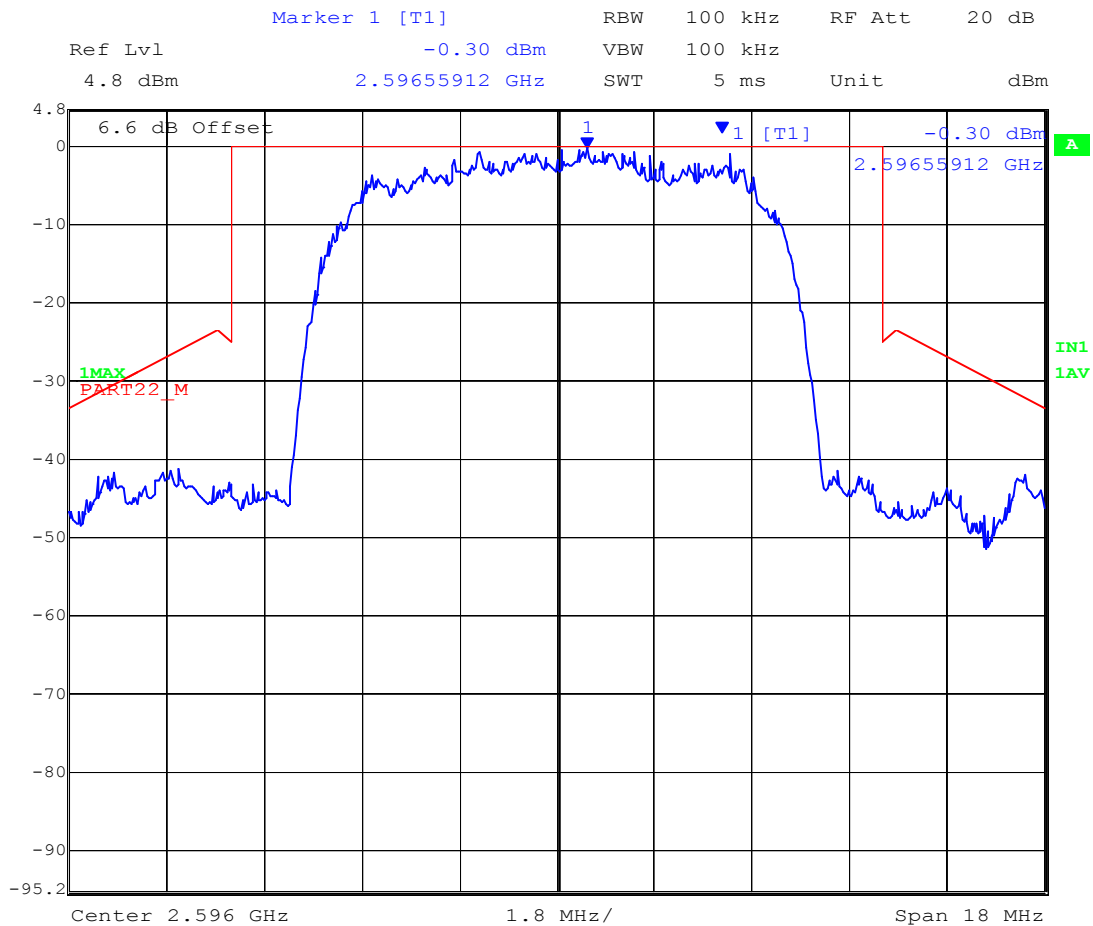
Date: 21.FEB.2003 09:19:13

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\054
Out-of-Band Spectrum Mask. Middle Channel



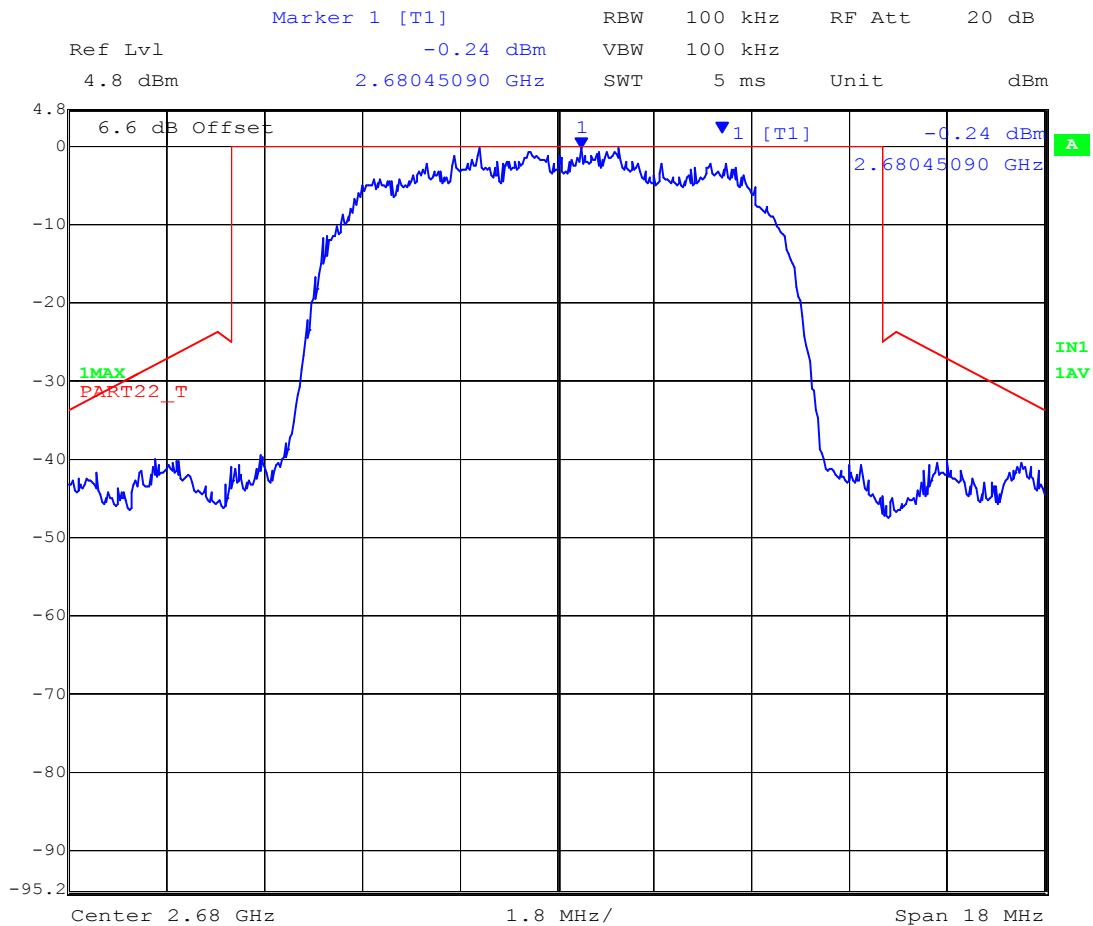
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Out-of-band Emissions. FCC Part 2.1051/21.908/74.936 : Middle Channel.
Date: 21.FEB.2003 09:25:15

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\055
Out-of-Band Spectrum Mask. Top Channel



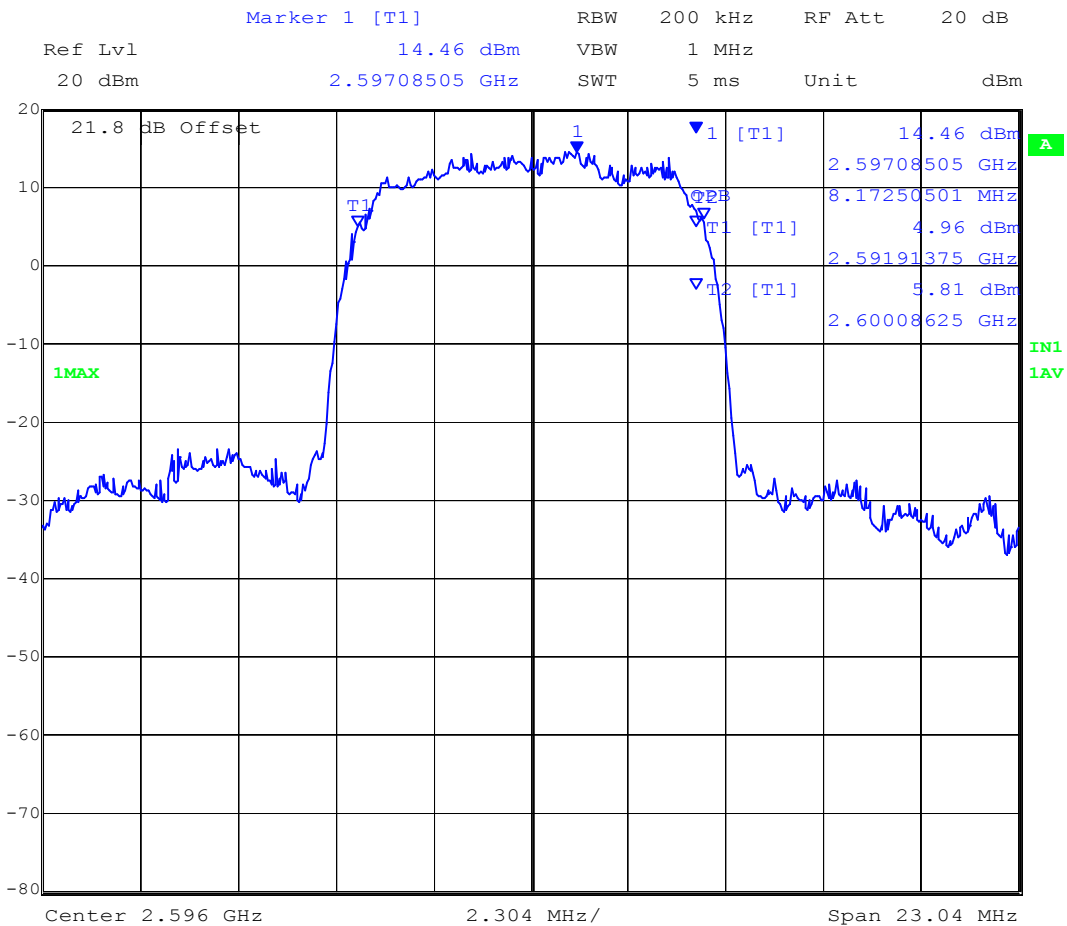
Title: Testing for IPWireless. EUT:UE P1C Model GY.
Comment A: Out-of-band Emissions. FCC Part 2.1051/21.908/74.936 : Top Channel.
Date: 21.FEB.2003 09:27:42

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\057
Occupied Bandwidth. Middle Channel



Title: Testing for IPWireless. EUT:UE P1C Model GY.
 Comment A: Occupied Bandwidth. FCC Part 2.1049/21.908/74.936 : Middle C hannel.
 Date: 20.FEB.2003 16:55:32

Test Of: IPWireless U.K. Ltd.

UE P1C Model: GY

To: FCC Part 15: 2001, Part 21: 2001 & Part 74: 2001

GPH\44493JD01\059
AC Conducted Emissions. Rx Mode

