



Giant Telecom Ltd.

Application  
For  
Class II Permissive Change

2.4GHz Frequency Hopping Spread Spectrum Cordless Network (VOIP)  
Phone with Router Base

**(FCC ID: RAQVP1000X)**

05261831  
TL/Ann Choy  
January 5, 2006

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# INTERTEK TESTING SERVICES

## MEASUREMENT/TECHNICAL REPORT

Giant Telecom Ltd. - MODEL: OLYMPIA VP1000R

AMERICAN TELECOM 6011S

AMERICAN TELECOM 6012S

AMERICAN TELECOM 6013S

AMERICAN TELECOM 6014S

AMERICAN TELECOM 6015S

FCC ID: RAQVP1000X

This report concerns (check one) Original Grant \_\_\_\_\_ Class II Change X

Equipment Type: DSS - Part 15 Spread Spectrum Transmitter

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes \_\_\_\_\_ No X

If yes, defer until : \_\_\_\_\_  
date

Company Name agrees to notify the Commission by: \_\_\_\_\_  
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes \_\_\_\_\_ No X

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-04 Edition] provision.

Report prepared by:

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### List of attached file

Exhibit type	File Description	filename
Test Report	Confidentiality Request	request.pdf
Test Report	Test Report	report.pdf
Operation Description	Technical Description	descri.pdf
Cover Page	Purpose of Application	product change.pdf
Test Setup Photo	Radiated Emission for Base	config photos.doc
Test Report	Out Band Antenna Conducted Emission Plot	obantcon.pdf
Test Report	Duty Cycle Calculation and Measurement	dcc.pdf
Test Setup Photo	Conducted Emission	config photos.doc
Test Report	Conducted Emission Test Result	conduct.pdf
External Photo	External Photo	external photos.doc
Internal Photo	Internal Photo	internal photos.doc
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
User Manual	FCC Information	FCC information.pdf
Operation Description	Security Code Information	security code information.pdf

**EXHIBIT 1**  
**SUMMARY OF TEST RESULTS**

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## INTERTEK TESTING SERVICES

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### 1.0 Summary of Test

**Giant Telecom Ltd. - MODEL: OLYMPIA VP1000R**

**AMERICAN TELECOM 6011S**

**AMERICAN TELECOM 6012S**

**AMERICAN TELECOM 6013S**

**AMERICAN TELECOM 6014S**

**AMERICAN TELECOM 6015S**

**FCC ID: RAQVP1000X**

TEST	REFERENCE	RESULTS
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Radiated Emission from Digital Part	15.109	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses a permanently attached antenna which, in accordance to Section 15.203, is considered sufficient to comply with the provisions of this section.

**EXHIBIT 2**  
**GENERAL DESCRIPTION**



## INTERTEK TESTING SERVICES

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### 2.0 **General Description**

#### 2.1 Product Description

The VP1000R is a 2.4GHz Frequency Hopping Spread Spectrum Cordless Network (VOIP) Phone with Router Base. It operates at frequency range of 2401.056MHz to 2482.272MHz with 95 hopping frequencies.

The system includes a base unit and handset unit.

The base unit consists of a page key, a LAN and a WAN interface.

The handset unit consists of a keypad with twelve standard keys (0,...9,\*,#), nine function keys (V.Mail, PROG/Cancel, Int., Clear, Flash/Spk, Redial, Call return, Info, repeat dial). A Phone key is provided to control pick/release telephone line in a toggle base.

The antennas used in base unit and handset are integral, and the test sample is a prototype.

The Model: AMERICAN TELECOM 6011S is the same as the Model: OLYMPIA VP1000R in hardware aspect. The Model: AMERICAN TELECOM 6012S is an additional identical handset with an extra charger for selling handset standalone. The Models: AMERICAN TELECOM 6013S, 6014S and 6015S have one base plus two, three and four identical handsets with one, two and three chargers respectively. The model numbers are identical in electrical, mechanical, and physical design. The difference in model number serves as marketing strategy.

The circuit description and frequency hopping algorithm is saved with filename: descri.pdf

#### 2.2 Purpose of Application

The purpose of application is saved with filename: product change.pdf.

As the RF module and the FHSS mechanism of the base unit remained unchanged and they have the same handset, only the out of band conducted emission results, radiated emission results, and AC line conducted emission results of the base unit were included in this report.

## INTERTEK TESTING SERVICES

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### 2.3 Related Submittal(s) Grants

This is an application for certification of a DSS-Part 15 Spread Spectrum Cordless VOIP Phone system. The digital device portion is subject to verification process.

### 2.4 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

### 2.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

**EXHIBIT 3**  
**SYSTEM TEST CONFIGURATION**

### 3.0 **System Test Configuration**

#### 3.1 Justification

For emissions testing, the units were setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The handset was powered by a fully charged battery.

For the measurements, the EUT is attached to a plastic stand if necessary and placed on the wooden turntable. The base unit attaches to a Notebook computer and a VOIP phone (model: VP1000). They are connected by RJ45 Cat 5 unshielded cables and operational (as typical as possible). The handset is remotely located as far from the antenna and the base as possible to ensure full power transmission from the base. Else, the base is wired to transmit full power without modulation.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Detector function is in peak mode. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1MHz or greater for frequencies above 1000MHz.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9kHz to 25GHz.

#### 3.2 EUT Exercising Software

The EUT exercise program (TCP/IP protocol) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

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## INTERTEK TESTING SERVICES

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### 3.3 Support Equipment List and Description

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system (included inserted cards, which have grants) are:

#### *HARDWARE:*

The unit was operated standalone. An AC adapter and a battery (provided with the unit) were used to power the device. Their description are listed below.

- (1) Base Unit: An AC adaptor (120VAC to 9VDC 700mA, Model: SA41-118A)
- (2) Handset: A "Ni-MH" type rechargeable battery (3.6V 600mAh)

#### *CABLES:*

- (1) 2 x unshielded CAT 5 LAN cable with 3 meter long. (Supplied by Client)
- (2) 1 x serial cable with 1 meter long.
- (3) 1 x parallel cable with 1 meter long.

#### *OTHERS:*

- (1) A headset for telephone use with 1.2m unshielded cable permanently affixed.
- (2) VOIP Phone, Model: VP1000, FCC ID: RAQVP1000X (Supplied by Client)
- (3) Toshiba Notebook, Model: PT810L-21CE2, S/N: 30013417J, DOC Product
- (4) HP Mouse, Model: M-S34, S/N: LZC84609205, FCC ID: DZL211029
- (5) HP Printer  
Model: C2642A, S/N: SG6121702C, FCC ID: B94C2642X  
Model: C6431D, S/N: CN23B 680ZP, DOC Product
- (6) Hayes Modem  
Model: 6800CN, S/N: A00900153317, FCC ID: BFJD907-00038
- (7) Genius Modem  
Model: GM56EX, S/N: ZT5505000355, DOC Product

## INTERTEK TESTING SERVICES

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### 3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

### 3.5 Equipment Modification

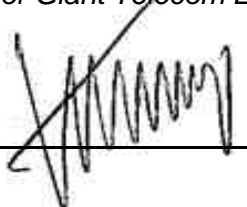
Any modifications installed previous to testing by Giant Telecom Ltd. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by ETL Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 3.0 of this report are confirmed by:

*Confirmed by:*

*Tommy Leung  
Assistant Manager  
Intertek Testing Services Hong Kong Ltd.  
Agent for Giant Telecom Ltd.*

  
\_\_\_\_\_  
Signature

\_\_\_\_\_  
12 January, 2006 Date

**EXHIBIT 4**  
**MEASUREMENT RESULTS**

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.0 Measurement Results

#### 4.1 Out of Band Conducted Emissions, FCC Rule 15.247(d):

In any 100 kHz bandwidth outside the EUT passband, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, or else shall meet the general limits for radiated emissions at frequencies outside the passband, whichever results in lower attenuation.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the following plots for out of band conducted emissions data:

Plot B6A.1 - B6A.2: Low Channel Emissions  
Plot B6B.1 - B6B.2: Middle Channel Emissions  
Plot B6C.1 - B6C.2: High Channel Emissions  
Plot B6D.1 - B6D.2: Modulation Products Emissions\*

The plots showed the 2<sup>nd</sup> harmonic and modulation products at the band edges of 2400 MHz and 2483.5 MHz. In addition, all spurious emission and up to the tenth harmonic was measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

Furthermore, delta measurement technique for measuring bandedge emissions was incorporated in the test of the edge at 2483.5MHz.

\*These 2 plots are shown the worst-case which has been already considered between enable and disable the hopping function of the EUT.

For electronic filing, the above plots are saved with filenames: obantcon.pdf



## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.2 Out of Band Radiated Emissions (for emissions in 4.1 above that are less than 20 dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

- ☒ Not required, all emissions more than 20dB below fundamental
- ☐ See attached data sheet

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.3 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

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## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.4 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

where FS = Field Strength in dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

#### Example

Assume a receiver reading of 62.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$AV = -10 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.5 Radiated Emission Configuration Photograph - Base Unit

Worst Case Radiated Emission  
at  
4802.276 MHz & 4883.328 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: config photos.doc

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.6 Radiated Emission Data - Base Unit

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 22.0 dB margin compare with the peak limit

\*\*\*\*\*

### **TEST PERSONNEL:**



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*Tester Signature*

Kenneth C. C. Lam, Senior Lead Engineer  
*Typed/Printed Name*

January 5, 2006  
*Date*

## INTERTEK TESTING SERVICES

Company: Giant Telecom Ltd.  
Model: VP1000R  
Mode : TX-Channel 0

Date of Test: December 5-22, 2005

Table 1, Base Unit

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (-dB)	Calculated at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	*1200.569	59.1	34	26.1	51.2	29.7	21.5	54	-32.5
V	*4802.276	51.1	34	34.9	52.0	29.7	22.3	54	-31.7
V	*12005.690	35.1	34	40.5	41.6	29.7	11.9	54	-42.1
V	*19209.104	36.0	34	37.7	39.7	29.7	10.0	54	-44.0

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
  3. Negative value in the margin column shows emission below limit.
  4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function, and this is the worst-case of 22.0dB margin at 4802.276MHz.

Test Engineer: Kenneth C. C. Lam

## INTERTEK TESTING SERVICES

Company: Giant Telecom Ltd.  
Model: VP1000R  
Mode : TX-Channel 47

Date of Test: December 5-22, 2005

Table 2, Base unit

### Radiated Emissions

Polari- zation	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (-dB)	Calculated at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
V	*1220.832	59.3	34	26.1	51.4	29.7	21.7	54	-32.3
V	*4883.328	51.1	34	34.9	52.0	29.7	22.3	54	-31.7
V	*7324.992	45.5	34	37.9	49.4	29.7	19.7	54	-34.3
V	*12208.320	34.8	34	40.5	41.3	29.7	11.6	54	-42.4
V	*19533.312	36.1	34	37.8	39.9	29.7	10.2	54	-43.8

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function, and this is the worst-case of 22.0dB margin at 4883.328MHz.

Test Engineer: Kenneth C. C. Lam

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## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R  
Mode : TX-Channel 94

Date of Test: December 5-22, 2005

Table 3, Base unit

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	**2482.272	121.1	34	29.4	116.5	29.7	86.8	---	---
V	*7446.816	43.4	34	37.9	47.3	29.7	17.6	54	-36.4
V	*12411.360	35.2	34	40.5	41.7	29.7	12.0	54	-42.0
V	*19858.176	36.9	34	37.8	40.7	29.7	11.0	54	-43.0
V	*22340.448	37.2	34	38.2	41.4	29.7	11.7	54	-42.3

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- \* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.
- \*\* Fundamental emission was measured for determining band-edge compliance of using delta measurement technique.

Test Engineer: Kenneth C. C. Lam



## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.7 AC Line Conducted Emission, FCC Rule 15.207:

☐ Not required; battery operation only

☒ Test data attached

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.8 Line Conducted Configuration Photograph - Base

Worst Case Line-Conducted Configuration

at 0.415 MHz

For electronic filing, the worst case line conducted configuration photographs are saved with filename: config photos.doc

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.9 Line Conducted Emission Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Passed by more than 19.3 dB margin compare with quasi-peak limit

For electronic filing, the worst case line conducted emission data are saved with filename: conduct.pdf

### **TEST PERSONNEL:**



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*Tester Signature*

Kenneth C. C. Lam, Senior Lead Engineer  
*Typed/Printed Name*

January 5, 2006  
*Date*

## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

- ☐ Not required - No digital part
- ☒ Test results are attached
- ☐ Included in the separated DOC report.

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## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R  
Mode: VOIP Online

Date of Test: December 5-22, 2005

Table 4, Base Unit

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	31.640	39.3	16	10.0	33.3	40.0	-6.7
V	38.640	40.2	16	10.0	34.2	40.0	-5.8
V	46.070	42.0	16	11.0	37.0	40.0	-3.0
V	47.071	40.2	16	11.0	35.2	40.0	-4.8
V	52.935	39.6	16	11.0	34.6	40.0	-5.4
H	150.004	34.1	16	14.0	32.1	43.5	-11.4
H	175.000	30.3	16	19.0	33.3	43.5	-10.2
H	200.003	34.6	16	16.0	34.6	43.5	-8.9
H	225.007	35.0	16	18.0	37.0	46.0	-9.0
H	250.007	39.3	16	20.0	43.3	46.0	-2.7
H	300.007	22.9	16	22.0	28.9	46.0	-17.1
H	350.007	30.8	16	24.0	38.8	46.0	-7.2
H	375.007	31.0	16	24.0	39.0	46.0	-7.0
H	400.007	28.6	16	24.0	36.6	46.0	-9.4
H	500.007	27.2	16	26.0	37.2	46.0	-8.8
H	625.007	27.0	16	29.0	40.0	46.0	-6.0

- NOTES: 1. Quasi-peak detector is used for the emission below or equal to 1000 MHz.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.

Test Engineer: Kenneth C. C. Lam

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## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R  
Mode: PC Online

Date of Test: December 5-22, 2005

Table 5, Base Unit

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	31.640	38.8	16	10.0	32.8	40.0	-7.2
V	38.640	39.9	16	10.0	33.9	40.0	-6.1
V	46.070	42.0	16	11.0	37.0	40.0	-3.0
V	47.071	40.8	16	11.0	35.8	40.0	-4.2
V	52.935	40.0	16	11.0	35.0	40.0	-5.0
H	150.004	35.1	16	14.0	33.1	43.5	-10.4
H	175.000	29.0	16	19.0	32.0	43.5	-11.5
H	200.003	34.4	16	16.0	34.4	43.5	-9.1
H	225.007	32.7	16	18.0	34.7	46.0	-11.3
H	250.007	39.0	16	20.0	43.0	46.0	-3.0
H	300.007	23.0	16	22.0	29.0	46.0	-17.0
H	350.007	30.8	16	24.0	38.8	46.0	-7.2
H	375.007	31.1	16	24.0	39.1	46.0	-6.9
H	400.007	28.6	16	24.0	36.6	46.0	-9.4
H	500.007	27.2	16	26.0	37.2	46.0	-8.8
H	625.007	26.0	16	29.0	39.0	46.0	-7.0

- NOTES: 1. Quasi-peak detector is used for the emission below or equal to 1000 MHz.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.

Test Engineer: Kenneth C. C. Lam

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## INTERTEK TESTING SERVICES

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Company: Giant Telecom Ltd.  
Model: VP1000R

Date of Test: December 5-22, 2005

### 4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEF function on the analyzer was set to ZERO SPAN. The transmitter ON time was determined from the resultant time-amplitude display:

Base Unit:

Duty cycle (DC) = Maximum ON time in 100ms/100ms  
= (0.82ms x 4)/100ms for 4 handsets operation

Duty cycle correction, dB =  $20 \cdot \log(\text{DC})$   
=  $20 \cdot \log(0.0328)$   
= -29.7 dB

X	See attached spectrum analyzer chart (s) for transmitter timing Base Unit: Plot B7
	See transmitter timing diagram provided by manufacturer
	Not applicable, duty cycle was not used.

For electronic filing, the above plots are saved with filenames: dcc.pdf

**EXHIBIT 5**  
**EQUIPMENT PHOTOGRAPHS**



### 5.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename: external photos.doc & internal photos.doc

**EXHIBIT 6**  
**PRODUCT LABELLING**

### 6.0 **Product Labelling**

For electronic filing, the FCC ID label artwork and location is saved with filename:  
label.pdf

**EXHIBIT 7**  
**TECHNICAL SPECIFICATIONS**

### 7.0 **Technical Specifications**

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

**EXHIBIT 8**  
**INSTRUCTION MANUAL**

### 8.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

Please note that the required FCC Information to the User is saved with filename: FCC information.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

**EXHIBIT 9**  
**SECURITY CODE INFORMATION**



### 9.0 **Security Code Information**

The VP1000R has at least  $2^{64}$  discrete digital codes, and the code is automatically generated during registration and send through the charging terminals to the base and the base confirms over the air.

**EXHIBIT 10**  
**CONFIDENTIALITY REQUEST**

### 10.0 **Confidentiality Request**

For electronic filing, a confidentiality request is saved with filename: request.pdf