

Giant Telecom Ltd.

Application  
For  
Certification

Digital Photo Frame with WiFi  
(WiFi Transceiver)

**(FCC ID: RAQIV7300)**

HK08080566-1

BH/ sl

September 18, 2008

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## INTERTEK TESTING SERVICES

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### MEASUREMENT/TECHNICAL REPORT

**Giant Telecom Ltd. - MODEL: IT7150  
IT7100  
IT7155  
IT7160  
IV7300**

**OT7150  
OT7100  
OT7155  
OT7160**

**FCC ID: RAQIV7300**

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

Equipment Type: DTS - Part 15 Digital Transmission Systems (WiFi transmitter portion)

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 [05-04-07 Edition] provision.

Report prepared by:

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# INTERTEK TESTING SERVICES

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## INTERTEK TESTING SERVICES

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### List of attached file

<b>Exhibit Type</b>	<b>File Description</b>	<b>Filename</b>
Cover Letter	Letter of Agency	letter.pdf
Test Report	Test Report	report.pdf
Test Report	6 dB Bandwidth Plot	6dB.pdf
Test Report	Maximum Power Density Plot	maxpd.pdf
Test Report	Out Band Antenna Conducted Emission Plot & Radiated Emission on the Bandedge	obantcon.pdf.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
Test Setup Photo	Radiated Emission	radiated photos.doc
Test Setup Photo	Conducted Emission	conducted photos.doc
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
Operation Description	Technical Description	descri.pdf
RF Exposure info	RF Safety	RF exposure info.pdf
Cover Letter	Confidentiality Request	request.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: IT7150**

**FCC ID: RAQIV7300**

#### WiFi Transmitter Portion

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
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
Antenna Requirement	15.203	Pass (See Notes)

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

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



### 2.0 **General Description**

#### 2.1 Product Description

The Equipment Under Test (EUT) is a Digital Photo Frame with WiFi operating at 2.412 - 2.462GHz, 11 channels selection. The EUT is powered by 3.7Vdc (1 x 3.7V "2100mAh 3.7V" Lithium-ion rechargeable battery) and/or AC/DC adaptor 100-240VAC 50/60Hz input, 5.0VDC 2.95A output, model: SSA-18W-05 US 050295. The EUT can support playback of digital multimedia contents, such as photo, MP3 and video and its integrated WiFi and LAN function can connect to internet and support internet services, such as RSS news, internet radio and multimedia sharing.

For more detailed features description, please refer to the user's manual.

The Model: IT7100, IT7155, IT7160, IV7300, OT7150, OT7100, OT7155 and OT7160 are the same as the Model: IT7150 in hardware aspect. The difference in brand name and model number serves as marketing strategy.

Antenna Type: Internal, Integral

The circuit descriptions are saved with filename: descri.pdf.

## INTERTEK TESTING SERVICES

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### 2.2 Related Submittal(s) Grants

This is an application for Certification of:

DTS - Part 15 Digital Transmission Systems (WiFi transmitter portion)

Remaining portions are subject to the following procedures

1. Computer peripheral (USB portion): 15 DOC
2. Receiver portion of WiFi: exempt from technical requirement of this Part.

### 2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003) and KDB558074. 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.

### 2.4 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**

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## INTERTEK TESTING SERVICES

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### 3.0 **System Test Configuration**

#### 3.1 Justification

For emissions testing, the equipment under test (EUT) 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. It was powered by 1 x 3.7V "2100mAh 3.7V" Lithium-Ion rechargeable battery and AC/DC adaptor 100-240VAC 50-60Hz input, 5VDC 2.95A output (Model: SSA-18W-05 US 050295).

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. 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 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

#### 3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the applicant and is going to be fixed on the firmware of the end product.

#### Power Parameters of IEEE 802.11b/g

Test software setting of IEEE 802.11b/g			
Channel No.	Out power	Data rate	Data modulation
1, 6, 11	15	802.11b: 1-11 Mbps	802.11b: DSSS(BPSK, QPSK, CCK)
	12	802.11g: 6-54 Mbps	802.11g: OFDM(BPSK,QPSK,16/64QAM)

The tests were performed in 1, 11 Mbps and 6, 54 Mbps data rate (worst case) in standalone mode and shown in this report.

## INTERTEK TESTING SERVICES

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### 3.3 Details of EUT and Description of Peripherals

#### Details of EUT:

An AC to DC adaptor is for charging function only and a battery (provided with the unit) is used to power the device. Their description are listed below.

- (1) A 3.7V “2100mAh 3.7V” Lithium-Ion type rechargeable battery
- (2) A AC-DC adaptor: 100-240VAC 50-60Hz input, 5VDC 2.95A output, Model: SSA-18W-05 US 050295
- (3) A Earphone with cable of 1.5 meter

There are no special accessories necessary for compliance of this 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.

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

### 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 Intertek Testing Services Hong Kong Ltd.

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

*Confirmed by:*

*Ho Wai Kin, Ben  
Senior Supervisor  
Intertek Testing Services Hong Kong Ltd.  
Agent for Giant Telecom Ltd.*



\_\_\_\_\_  
Signature

\_\_\_\_\_  
September 18, 2008 Date

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

## INTERTEK TESTING SERVICES

Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.0 **Measurement Results**

#### 4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

- ☒ The antenna power of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.
- ☐ The antenna port of the EUT was connected to the input of a spectrum analyzer. The analyzer was set for RBW > 6dB bandwidth and power was read directly in dBm. External attenuation and cable loss were compensated for using the OFFSET function of the analyzer.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = -2.5 dBi)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	15.9	38.9
Middle Channel: 2437	16.9	49.0
High Channel: 2462	15.9	38.9

IEEE 802.11g (Antenna Gain = -2.5 dBi)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	13.9	24.6
Middle Channel: 2437	14.8	30.9
High Channel: 2462	13.5	22.4

Cable loss : 0.5 dB    External Attenuation : 10 dB

Cable loss, external attenuation: ☐ included in OFFSET function  
☒ added to power meter raw reading

EUT dBm max. output level = 16.9 dBm (+30 dBm or less)

For RF Safety, the information is saved with filename: RF exposure info.pdf.



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## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

IEEE 802.11b (DSSS, 11Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2462	10.42

IEEE 802.11g (OFDM, 54Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2462	16.52

Limit: at least 500kHz

Refer to the following plots for 6 dB bandwidth sharp:

#### IEEE 802.11b

Plot B2A1 - B2A2: Low Channel 6 dB RF Bandwidth

Plot B2B1 - B2B2: Middle Channel 6 dB RF Bandwidth

Plot B2C1 - B2C2: High Channel 6 dB RF Bandwidth

#### IEEE 802.11g

Plot G2A1 - G2A2: Low Channel 6 dB RF Bandwidth

Plot G2B1 - G2B2: Middle Channel 6 dB RF Bandwidth

Plot G2C1 - G2C2: High Channel 6 dB RF Bandwidth

For electronic filing, the above plots are saved with filename: 6dB.pdf

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.3 Maximum Power Density Reading, FCC Rule 15.247(e) :

The spectrum analyzer RES BW was set to 3kHz. In order to look for a peak, the START and STOP frequencies were set to the band edges of the maximum output passband. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are added to the analyzer raw readings.

IEEE 802.11b (DSSS, 11Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2411.634	5.65

Frequency Span = 1.5MHz

Sweep Time = Frequency Span/3kHz  
= 500 seconds

Cable Loss: 0.5 dB

Peak Power Density (at 2411.634MHz) =  $5.15 + 0.5 = 5.65\text{dBm/3kHz}$

Limit: 8dBm/ 3kHz

Refer to the following plots for power density data :

Plot B3A1 - B3A2: Low Channel power density

Plot B3B1 - B3B2: Middle Channel power density

Plot B3C1 - B3C2: High Channel power density

## INTERTEK TESTING SERVICES

Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.3 Maximum Power Density Reading, FCC Rule 15.247(e) – Continued:

IEEE 802.11g (OFDM, 6Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2441.021	-15.65

Frequency Span = 1.5MHz

Sweep Time = Frequency Span/3kHz  
= 500 seconds

Cable Loss: 0.5 dB

Peak Power Density (at 2441.021MHz) =  $-16.15 + 0.5 = -15.65$ dBm/3kHz

Limit: 8dBm/ 3kHz

Refer to the following plots for power density data :

Plot G3A1 - G3A2: Low Channel power density  
Plot G3B1 - G3B2: Middle Channel power density  
Plot G3C1 - G3C2: High Channel power density

For electronic filing, the above plots are saved with filename: maxpd.pdf

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.4 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 20dB 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 B4A1 - B4A2: Low Channel Emissions  
Plot B4B1 - B4B2: Middle Channel Emissions  
Plot B4C1 - B4C2: High Channel Emissions  
Plot G4A1 - G4A2: Low Channel Emissions  
Plot G4B1 - G4B2: Middle Channel Emissions  
Plot G4C1 - G4C2: High Channel Emissions

The plots showed 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.

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

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB 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, since all emissions are more than 20dB below fundamental
- ☐ See attached data sheet

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.6 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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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.7 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.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ AV &= -10 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m} \end{aligned}$$

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

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.8 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at  
2310.000 MHz

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



## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.9 Radiated Emission Data

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

Judgement : Passed by 2.9 dB margin

### **TEST PERSONNEL:**



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*Tester Signature*

Mark Cheung, Lead Engineer  
*Typed/Printed Name*

September 18, 2008  
*Date*

## INTERTEK TESTING SERVICES

Applicant: Giant Telecom Ltd.  
Model: IT7150  
Mode: 802.11b (TX-Channel 01)

Date of Test: August 15, 2008

Table 1 - 2

### Radiated Emissions

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	*2310.000	54.7	33	29.4	51.1	0	51.1	54.0	-2.9
H	*2340.000	54.5	33	29.4	50.9	0	50.9	54.0	-3.1
H	*2390.000	54.0	33	29.4	50.4	0	50.4	54.0	-3.6
H	4824.000	43.5	33	34.9	45.4	0	45.4	54.0	-8.6
H	7236.000	40.3	33	37.9	45.2	0	45.2	54.0	-8.8
H	9648.000	36.8	33	40.4	44.2	0	44.2	54.0	-9.8
H	10260.000	36.1	33	40.5	43.6	0	43.6	54.0	-10.4

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	*2310.000	54.7	33	29.4	51.1	0	51.1	74.0	-22.9
H	*2340.000	54.5	33	29.4	50.9	0	50.9	74.0	-23.1
H	*2390.000	54.0	33	29.4	50.4	0	50.4	74.0	-23.6
H	4824.000	43.5	33	34.9	45.4	0	45.4	74.0	-28.6
H	7236.000	40.3	33	37.9	45.2	0	45.2	74.0	-28.8
H	9648.000	36.8	33	40.4	44.2	0	44.2	74.0	-29.8
H	10260.000	36.1	33	40.5	43.6	0	43.6	74.0	-30.4

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated 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 radiated 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 section 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.

Test Engineer: Mark Cheung

FCC ID: RAQIV7300

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## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150  
Mode: 802.11b (TX-Channel 06)

Date of Test: August 15, 2008

Table 3 - 4

### Radiated Emissions

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	4847.000	43.3	33	34.9	45.2	0	45.2	54.0	-8.8
H	7311.000	40.1	33	37.9	45.0	0	45.0	54.0	-9.0
H	9480.000	36.8	33	40.4	44.2	0	44.2	54.0	-9.8
H	12185.000	35.7	33	40.5	43.2	0	43.2	54.0	-10.8

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	4847.000	43.3	33	34.9	45.2	0	45.2	74.0	-28.8
H	7311.000	40.1	33	37.9	45.0	0	45.0	74.0	-29.0
H	9480.000	36.8	33	40.4	44.2	0	44.2	74.0	-29.8
H	12185.000	35.7	33	40.5	43.2	0	43.2	74.0	-30.8

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated 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 radiated 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.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

Applicant: Giant Telecom Ltd.  
Model: IT7150  
Mode: 802.11b (TX-Channel 11)

Date of Test: August 15, 2008

Table 5 - 6

### Radiated Emissions

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	*2483.500	54.6	33	29.4	51.0	0	51.0	54.0	-3.0
H	*2491.000	54.4	33	29.4	50.8	0	50.8	54.0	-3.2
H	*2500.000	53.3	33	30.4	50.7	0	50.7	54.0	-3.3
H	4930.000	43.4	33	34.9	45.3	0	45.3	54.0	-8.7
H	7395.000	40.1	33	37.9	45.0	0	45.0	54.0	-9.0
H	9860.000	36.9	33	40.4	44.3	0	44.3	54.0	-9.7
H	12325.000	35.5	33	40.5	43.0	0	43.0	54.0	-11.0

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	*2483.500	54.6	33	29.4	51.0	0	51.0	74.0	-23.0
H	*2491.000	54.4	33	29.4	50.8	0	50.8	74.0	-23.2
H	*2500.000	53.3	33	30.4	50.7	0	50.7	74.0	-23.3
H	4930.000	43.4	33	34.9	45.3	0	45.3	74.0	-28.7
H	7395.000	40.1	33	37.9	45.0	0	45.0	74.0	-29.0
H	9860.000	36.9	33	40.4	44.3	0	44.3	74.0	-29.7
H	12325.000	35.5	33	40.5	43.0	0	43.0	74.0	-31.0

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated 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 radiated 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 section 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.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

Applicant: Giant Telecom Ltd.  
Model: IT7150  
Mode: 802.11g (TX-Channel 01)

Date of Test: August 15, 2008

Table 7 - 8

### Radiated Emissions

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	*2310.000	54.0	33	29.4	50.4	0	50.4	54.0	-3.6
H	*2340.000	54.2	33	29.4	50.6	0	50.6	54.0	-3.4
H	*2390.000	54.1	33	29.4	50.5	0	50.5	54.0	-3.5
H	4824.000	43.5	33	34.9	45.4	0	45.4	54.0	-8.6
H	7236.000	40.1	33	37.9	45.0	0	45.0	54.0	-9.0
H	9648.000	67.7	33	40.4	44.2	0	44.2	54.0	-9.8
H	10260.000	36.0	33	40.5	43.5	0	43.5	54.0	-10.5

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	*2310.000	54.0	33	29.4	50.4	0	50.4	74.0	-23.6
H	*2340.000	54.2	33	29.4	50.6	0	50.6	74.0	-23.4
H	*2390.000	54.1	33	29.4	50.5	0	50.5	74.0	-23.5
H	4824.000	43.5	33	34.9	45.4	0	45.4	74.0	-28.6
H	7236.000	40.1	33	37.9	45.0	0	45.0	74.0	-29.0
H	9648.000	67.7	33	40.4	44.2	0	44.2	74.0	-29.8
H	10260.000	36.0	33	40.5	43.5	0	43.5	74.0	-30.5

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated 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 radiated 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 section 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.

Test Engineer: Mark Cheung

FCC ID: RAQIV7300

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## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150  
Mode: 802.11g (TX-Channel 06)

Date of Test: August 15, 2008

Table 9 - 10

### Radiated Emissions

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	4847.000	43.5	33	34.9	45.4	0	45.4	54.0	-8.6
H	7311.000	40.1	33	37.9	45.0	0	45.0	54.0	-9.0
H	9480.000	36.9	33	40.4	44.3	0	44.3	54.0	-9.7
H	12185.000	36.1	33	40.5	43.6	0	43.6	54.0	-10.4

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	4847.000	43.5	33	34.9	45.4	0	45.4	74.0	-28.6
H	7311.000	40.1	33	37.9	45.0	0	45.0	74.0	-29.0
H	9480.000	36.9	33	40.4	44.3	0	44.3	74.0	-29.7
H	12185.000	36.1	33	40.5	43.6	0	43.6	74.0	-30.4

- NOTES:
1. Peak detector is used for the emission measurement.
  2. All measurements were made at 3 meters. Radiated 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 radiated 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.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

Applicant: Giant Telecom Ltd.  
Model: IT7150  
Mode: 802.11g (TX-Channel 11)

Date of Test: August 15, 2008

Table 11 - 12

### Radiated Emissions

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
H	*2483.500	54.5	33	29.4	50.9	0	50.9	54.0	-3.1
H	*2491.000	53.9	33	29.4	50.3	0	50.3	54.0	-3.7
H	*2500.000	52.8	33	30.4	50.2	0	50.2	54.0	-3.8
H	4930.000	43.5	33	34.9	45.4	0	45.4	54.0	-8.6
H	7395.000	40.2	33	37.9	45.1	0	45.1	54.0	-8.9
H	9860.000	36.8	33	40.4	44.2	0	44.2	54.0	-9.8
H	12325.000	36.0	33	40.5	43.5	0	43.5	54.0	-10.5

Polarization	Frequency	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dBμV/m)	Average Factor (dB)	Calculated at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
H	*2483.500	54.5	33	29.4	50.9	0	50.9	74.0	-23.1
H	*2491.000	53.9	33	29.4	50.3	0	50.3	74.0	-23.7
H	*2500.000	52.8	33	30.4	50.2	0	50.2	74.0	-23.8
H	4930.000	43.5	33	34.9	45.4	0	45.4	74.0	-28.6
H	7395.000	40.2	33	37.9	45.1	0	45.1	74.0	-28.9
H	9860.000	36.8	33	40.4	44.2	0	44.2	74.0	-29.8
H	12325.000	36.0	33	40.5	43.5	0	43.5	74.0	-30.5

- NOTES: 1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters. Radiated 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 radiated 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 section 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.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

4.10 AC Line Conducted Emission, FCC Rule 15.207:

☐ Not required; battery operation only

☒ Test data attached



## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.11 Line Conducted Configuration Photograph

Worst Case Line-Conducted Configuration  
at  
0.160 MHz

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

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.12 Line Conducted Emission Configuration Data

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

Judgement : Passed by 18.9 dB margin

For electronic filing, the conducted emission test result is saved with filename: conducted.pdf

### **TEST PERSONNEL:**



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*Tester Signature*

Mark Cheung, Lead Engineer  
*Typed/Printed Name*

September 18, 2008  
*Date*

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.13 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.

## INTERTEK TESTING SERVICES

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Applicant: Giant Telecom Ltd.  
Model: IT7150

Date of Test: August 15, 2008

### 4.14 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 SWEP function on the analyzer was set to ZERO SPAN. The transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for transmitter timing
	See transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

**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.

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

**EXHIBIT 9**  
**MISCELLANEOUS INFORMATION**

### 9.0 **Discussion of Pulse Desensitization**

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

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

### 10.0 **Confidentiality Request**

The applicant would like to have confidential protection of the following documents:

#### Permanent Confidentiality

- Block Diagram
- Circuit Diagram
- Operational Description

#### Short-term Confidentiality

- Test setup Photos
- External Photos
- Internal Photos
- User Manual

For electronic filing, the request letter is saved with filename: request.pdf.