



**Giant Electronics Ltd.**

Application  
For  
Permissive Change Class II

Two Way Radio with GMRS, FRS, and Weather Band Receiver

**(FCC ID: K7GT9580)**

07177711

TL/ ac

September 21, 2007

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# INTERTEK TESTING SERVICES

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## INTERTEK TESTING SERVICES

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### MEASUREMENT/TECHNICAL REPORT

**Application** : Giant Electronics Ltd.  
**Trade Name/Model No** : Motorola/ T9580  
**Date** : September 21, 2007

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

Equipment Type: FRF – Part 95 Family Radio Face Held 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.

\_\_\_\_\_

Report prepared by:

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### List of attached file

Exhibit type	File Description	Filename
Operation Description	Purpose of Application	product change.pdf
Test Report	Spurious Emission	spurious.pdf
Test Report	Conducted Emission	conduct.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	config photos.doc
	Conducted Emission	
Internal Photo	Internal Photo	internal photos.doc
External Photo	External Photo	external photos.doc
Test Report	Part List	partlist.pdf
RF Exposure Info	SAR Test Report	SAR report 1 of 2.pdf
		SAR report 2 of 2.pdf
Cover Letter	Confidentiality Request	request.pdf

# **INTERTEK TESTING SERVICES**

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## **EXHIBIT 1**

### **GENERAL DESCRIPTION**

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### **1.0 General Description**

#### **1.1 Product Description**

The Equipment Under Test (EUT) is a Two Way Radio with GMRS, FRS, and Weather Band operating between 462.5500MHz and 467.7125MHz. The EUT is powered by 3.6V (1 x 3.6V "Ni-MH" type rechargeable battery) or 4.5V (3 x "AA" size 1.5V alkaline batteries).

##### **Transmitter Portion**

- (i) Type of Emission : GMRS: 5K60F3E; FRS: 5K64F3E
- (ii) Frequency Range : GMRS 15 Channels from 462.5500MHz to 462.7250MHz  
FRS 7 Channels from 467.5625MHz to 467.7125MHz
- (iii) Maximum Power Rating : GMRS: 0.75W ERP; FRS: 0.29W ERP
- (iv) Antenna Type : Integral

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### 1.2 Purpose of Application

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

As the RF module remained unchanged, only results of modulation characteristic, occupied bandwidth, spurious emission, and frequency stability were included in this report.

### 1.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003) and ANSI/TIA-603-B-2002. All measurement were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. For each scan, the procedure of maximizing emissions in Appendices D and E were followed. All Radiated tests were performed at an antenna the EUT distance of 3 meters, unless stated otherwise in the “**Justification Section**” of this Application.

### 1.4 Test Facility

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



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### **EXHIBIT 2**

### **SYSTEM TEST CONFIGURATION**

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### 2.0 **System Test Configuration**

#### 2.1 Justification

The device was configured for testing in a typical fashion (as a customer would normally use it). The device was placed on a turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes. The device has been tested with headset and without headset when the radiated emissions are measured.

The device was powered by 3 x "AA" size 1.5V alkaline batteries.

The frequency range from 30 MHz to 4.69 GHz was searched for spurious emissions from the device. Only those emissions reported were detected. All other emissions were at least 20 dB below the applicable limits.

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### 2.2 EUT Exercising Software

There was no special software to exercise the device. Once the PTT button is pushed, a signal is transmitted.

### 2.3 Special Accessories

No special accessory is needed for compliance of this device.

### 2.4 Measurement Uncertainty

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

### 2.5 Equipment Modification

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

No modification were installed by Intertek Testing Services Hong Kong Ltd.

### 2.6 Support Equipment

A headset with 1.2m unshielded cable. (Supplied by Client)

*Confirmed by:*

*Leung Wai Leung, Tommy  
Manager  
Intertek Testing Services Hong Kong Ltd.  
Agent for Giant Electronics Ltd.*



\_\_\_\_\_  
Signature

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September 21, 2007 Date

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### **EXHIBIT 3**

### **SPURIOUS EMISSION**

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### 3.0 **Spurious Emission (Section 95.635)**

In order to satisfy the 95.635 requirement, the spurious emission from the EUT are measured and shown in the Exhibit 6.1.

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### 3.1 Field Strength of Spurious Radiation (Section 95.635)

#### A. Test Equipment

Equipment	Brand Name	Model No.
Antenna	EMCO	A100, 3148, 3104C, 3115
Spectrum Analyzer	ADVANTEST	U3661
Test receiver	Rohde & Schwarz	ESVS30
RF Filter	Trilithic	3VF500/1000-5-50-CC
Signal Generator	IFR	2023B

#### B. Testing Procedure

Radiated emission measurements were performed according to the procedures in ANSI C63.4(2003). All measurements were performed in Open Area Test Sites located at Roof Top of Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.

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### **C. Radiated Emission Configuration Photograph**

#### **Worst Case Radiated Emission**

For electronic filing, the radiated emission configurations photograph is saved with filename: config photos.doc

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### C. Test Result

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Motorola/ T9580**

**Table 1(a)**

1) Unwanted emission from CARRIER  $\pm 6.25\text{kHz}$  to CARRIER  $\pm 31.25\text{kHz}$

(Refer to the plots which is saved with filename: spurious.pdf)

Region	Unwanted emission	
	Channel 4	Channel 11
CARRIER $\pm 6.25\text{kHz}$ to $\pm 12.5\text{kHz}$	<25dB	<25dB
CARRIER $\pm 12.5\text{kHz}$ to $\pm 31.25\text{kHz}$	<35dB	<35dB



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**Table 1(b): Channel 4 - without Headset and Charging using Car Plug Charger**

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dB)	Margin (dB)
231.319	-46.8	28.7	75.5	41.7	-33.8
693.956	-42.8	28.7	71.5	41.7	-29.8
925.274	-27.1	28.7	55.8	41.7	-14.1
1156.593	-46.6	28.7	75.3	41.7	-33.6
1387.911	-26.6	28.7	55.3	41.7	-13.6
1619.230	-42.8	28.7	71.5	41.7	-29.8
1850.548	-39.8	28.7	68.5	41.7	-26.8
2081.867	-39.8	28.7	68.5	41.7	-26.8
2313.185	-36.1	28.7	64.8	41.7	-23.1
2544.504	-35.4	28.7	64.1	41.7	-22.4
2775.822	-28.2	28.7	56.9	41.7	-15.2
3007.141	-30.0	28.7	58.7	41.7	-17.0
3238.459	-30.6	28.7	59.3	41.7	-17.6
3469.778	-35.1	28.7	63.8	41.7	-22.1
3701.096	-37.0	28.7	65.7	41.7	-24.0
3932.415	-42.2	28.7	70.9	41.7	-29.2
4163.733	-42.8	28.7	71.5	41.7	-29.8
4395.052	-43.1	28.7	71.8	41.7	-30.1
4626.370	-46.6	28.7	75.3	41.7	-33.6

- Remark: 1. Transmission power is 28.7 dBm or -1.3 dB(W).
2. According to Section 95.635(b7), the unwanted emission should be attenuated below TP by at least  $43 + 10 \log_{10} (TP)$  dB or 41.7 dB.
3. The test is performed according to ANSI/TIA-603-B-2002.

Test Engineer: Ken Sit

Date of Test: June 30-August 22, 2007

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**Table 1(b): Channel 11 - with Headset and Charging in Charging Tray**

<b>Frequency (MHz)</b>	<b>Effective Radiated Power (dBm)</b>	<b>Transmission Power (dBm)</b>	<b>Attenuation (dBc)</b>	<b>Limit (dB)</b>	<b>Margin (dB)</b>
233.819	-45.0	19.8	64.8	32.8	-32.0
701.456	-48.9	19.8	68.7	32.8	-35.9
935.274	-34.2	19.8	54.0	32.8	-21.2
1169.093	-47.2	19.8	67.0	32.8	-34.2
1402.911	-22.2	19.8	42.0	32.8	-9.2
1636.730	-41.0	19.8	60.8	32.8	-28.0
1870.548	-38.0	19.8	57.8	32.8	-25.0
2104.367	-38.8	19.8	58.6	32.8	-25.8
2338.185	-29.2	19.8	49.0	32.8	-16.2
2572.004	-41.0	19.8	60.8	32.8	-28.0
2805.822	-31.0	19.8	50.8	32.8	-18.0
3039.641	-37.2	19.8	57.0	32.8	-24.2
3273.459	-31.5	19.8	51.3	32.8	-18.5
3507.278	-40.9	19.8	60.7	32.8	-27.9
3741.096	-43.4	19.8	63.2	32.8	-30.4
3974.915	-44.2	19.8	64.0	32.8	-31.2
4208.733	-45.0	19.8	64.8	32.8	-32.0
4442.552	-46.5	19.8	66.3	32.8	-33.5

- Remark: 1. Transmission power is 19.8 dBm or -10.2 dB(W).
2. According to Section 95.635(b7), the unwanted emission should be attenuated below TP by at least  $43 + 10 \log_{10} (TP)$  dB or 32.8 dB.
3. The test is performed according to ANSI/TIA-603-B-2002.

Test Engineer: Ken Sit

Date of Test: June 30-August 22, 2007

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### **D. Conducted Emission Configuration Photograph**

#### **Worst Case Conducted Emission**

For electronic filing, the conducted emission configurations photograph is saved with filename: config photos.doc

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### **D. Test Result**

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Motorola/ T9580**

**Conducted Emissions**

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

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### **EXHIBIT 4**

### **PRODUCT LABELLING**

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### 4.0 Product Labelling

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### **4.1 Label Artwork & Location**

#### **Figure 4.1 Label Artwork & Location**

An engineering drawing of the label which will be permanently affixed to the unit.  
For electronic filing, the label artwork & location are saved with filename: label.pdf

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### **EXHIBIT 5**

### **PHOTOGRAPHS**



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### 5.0 Equipment Photographs

For electronic filing, photographs of the tested EUT are saved with filename: external photos.doc and internal photos.doc

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### **EXHIBIT 6**

### **INSTRUCTION MANUAL**

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### 6.0 **Instruction Manual**

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

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

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### **EXHIBIT 7**

### **PART LIST**

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### 7.0 **Part List**

For electronic filing, a preliminary copy of the Part List is saved with filename: partlist.pdf

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### **EXHIBIT 8**

### **RF EXPOSURE INFO**

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### 8.0 RF Exposure Info

The RF Safety Information is shown on P.1 of User Manual.

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### **EXHIBIT 9**

### **CONFIDENTIALITY REQUEST**



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### 9.0 **Confidentiality Request**

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