Giant Electronics Ltd.

Application
For
Certification

400MHz-470MHz Professional Walkie Talkie

(FCC ID: K7GP1808)

HK08010864-1
AL/ ac
January 30, 2008

Intertek Testing Services Hong Kong Ltd.
2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.
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LIST OF EXHIBITS

MEASUREMENT/TECHNICAL REPORT

Applicant : Giant Electronics Ltd.
Trade Name/Model No : Giant P1808
Date : January 30, 2008

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

Equipment Type: TNF - Licensed Non-Broadcast Transmitter Held to Face

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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Test Report	Audio Low Pass Filter Response	lpf.pdf
Test Report	Bandwidth Plot	bw.pdf
Test Report	Emission Mask	emission.pdf
Test Setup Photo	Radiated Emission	config photos.pdf
Test Report	Conducted Spurious Emission	cspurious.pdf
Test Report	Transient Behavior	transient.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
Internal Photo	Internal Photo	internal photos.pdf
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Part List/Tune Up Info	Part List	partlist.pdf
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EXHIBIT 1

GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a Two Way Radio operating between 400.000MHz-470.000MHz. The EUT is powered by 7.4V (1 x 7.4V "Li-ion" type rechargeable battery). According to the user manual instruction, the EUT is turned off while in charging tray.

Transmitter Portion

(i) Type of Emission	:	6K12F3E (12.5kHz); 11K6F3E (25kHz)
(ii) Frequency Range	:	32 Channels from 400.000MHz to 470.000MHz
(iii) Maximum Power Rating	:	Channel 1: 5.25W (406.1MHz); Channel 16: 5.02W (435.1MHz); Channel 32: 4.80W (469.9MHz)
(iv) Power Output Level	:	Switched (High / Low)
(v) Antenna Type	:	non-integral/detachable, SMA-J type, Helical antenna
(vi) Antenna Operating Frequency	:	400MHz-470MHz
(vii) Gain	:	2.0dBi
(viii) Impedance	:	50Ω

The brief circuit description is saved with filename: descri.pdf

1.2 Related Submittal(s) Grants

This is an Application for Certification of the transmitter portion of a Transceiver. The receiver section of this Transceiver and digital device portion is subject to verification process.

1.3 Test Methodology

All measurements were performed according to the test procedures specified in ANSI/TIA-603-C-2004.

Radiated emission measurements were performed in open area test sites where is an FCC listed site compliant with ANSI C63.4. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna the 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 47 CFR Part 2.

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.

EXHIBIT 2

SYSTEM TEST CONFIGURATION

2.0 System Test Configuration

2.1 Justification

The device was configured for testing in a typical fashion, which was in accordance with the manufacturer's instructions. The device was placed on a turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes. The device was tested with headset and without headset when the radiated emissions were measured.

The device was powered by a fully charged 1 x 7.4V "Li-ion" type rechargeable battery.

The antenna port was terminated by a non-radiating resistive attenuator with 50Ω input impedance and an output impedance matched to the test equipment when taking measurements.

The frequency range from 30 MHz to 4.8 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.

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.

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.

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.

Confirmed by:

Lo Po Kong, Alfred
Technical Manager
Intertek Testing Services Hong Kong Ltd.
Agent for Giant Electronics Ltd.

_____ Signature

January 30, 2008 Date

EXHIBIT 3

MEASUREMENT RESULTS

3.0 Measurement Results

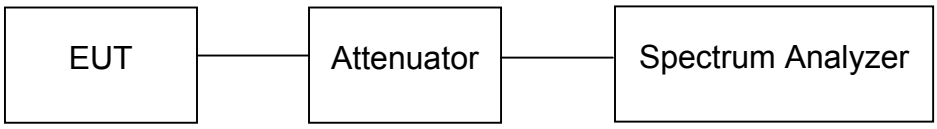
3.1 Conducted Output Power (Section 2.1046(a) & 90.205)

A. Equipment Used

Equipment	Brand Name	Model No.
Spectrum Analyzer	R&S	FSP40
Attenuator	Weinschel Engineering	33-10-33

B. Testing Procedure

1. Set-up the test equipment in the following configuration:



2. The transmitter output was connected, via a suitable attenuator, to a spectrum analyzer.

3. Attenuation of attenuator and cable loss were compensated for using to OFFSET function of the analyzer.

4. Set the EUT in low/ high power.

5. Peak Detector was set on spectrum analyzer RBW was set ≥ emission bandwidth, RBW was adjusted by repeating the measurement and using increasing values of RBW until there were negligible changes in the measured values of the maximum power.

6. Switched on the EUT.

7. Recorded the output power at the lowest, middle and highest channels.

Table 1

Giant Electronics Ltd.
Giant P1808

Transmission Power

Setting: High Power

Channel	Frequency (MHz)	Conductive Power	
		(dBm)	(W)
1	406.1000	37.2	5.25
16	435.1000	37.0	5.02
32	469.9000	36.8	4.80

Setting: Low Power

Channel	Frequency (MHz)	Conductive Power	
		(dBm)	(W)
1	406.1000	31.9	1.55
16	435.1000	32.0	1.58
32	469.9000	31.6	1.48

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

3.2 Modulation Characteristics

In order to satisfy the 90.210 requirement, Modulation Frequency Response and Modulation Limit Characteristics are attached in Exhibit 3.2.1 & 3.2.2.

Plots for each tests are saved with filename: mfr.pdf and mlc.pdf

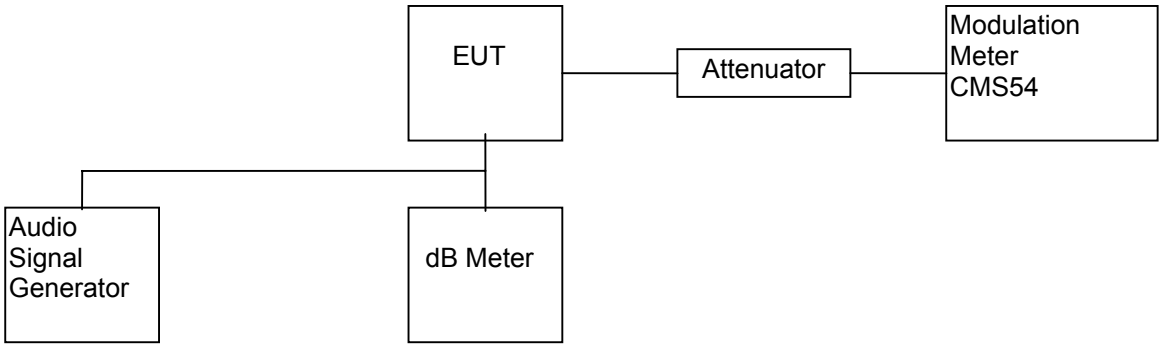
3.2.1 **Modulation Frequency Response**

A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
AC Millivoltmeter	Leader	LMV-182A
Radiocommunication Service Monitor	R&S	CMS54
Attenuator	Weinschel Engineering	33-10-33
dB Meter	B&K	2232

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Set the audio signal generator frequency to 1kHz with the sound pressure level 107dBSPL for 12.5kHz and 127dBSPL for 25kHz at the microphone of the EUT.
3) The frequency of the audio signal generator was changed from 100Hz to 5kHz.
4) Recorded the frequency deviation.
5) The peak frequency deviation must not exceed ±2.5kHz for 12.5kHz channel spacing system.
6) The peak frequency deviation must not exceed ±5kHz for 25kHz channel spacing system.

C. Test Result

Table 2(a)

Giant Electronics Ltd.
Giant P1808

Modulation Frequency Response

Test Channel : 1 - For 12.5kHz Channel spacing system
Input level = 107dBSPL

Modulation Frequency (Hz)	Modulation index (%)
100	0.26
200	0.18
300	1.45
400	2.27
500	3.00
600	2.45
700	2.78
800	2.45
900	2.22
1000	2.02
1250	1.58
1500	1.28
1750	1.12
2000	1.03
2250	0.95
2500	0.88
2750	0.75
3000	0.62
3125	0.54
3250	0.46
3500	0.34
4000	0.17
5000	0.03

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

Table 2(b)

Giant Electronics Ltd.
Giant P1808

Modulation Frequency Response

Test Channel : 1 - For 25kHz Channel spacing system
Input level = 127dBSPL

Modulation Frequency (Hz)	Modulation index (%)
100	0.32
200	0.72
300	2.97
400	6.35
500	7.33
600	6.76
700	5.72
800	5.02
900	4.50
1000	3.96
1250	3.12
1500	2.54
1750	2.19
2000	1.49
2250	0.91
2500	0.49
2750	0.37
3000	0.46
3125	0.43
3250	0.53
3500	0.36
4000	0.10
5000	0.03

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

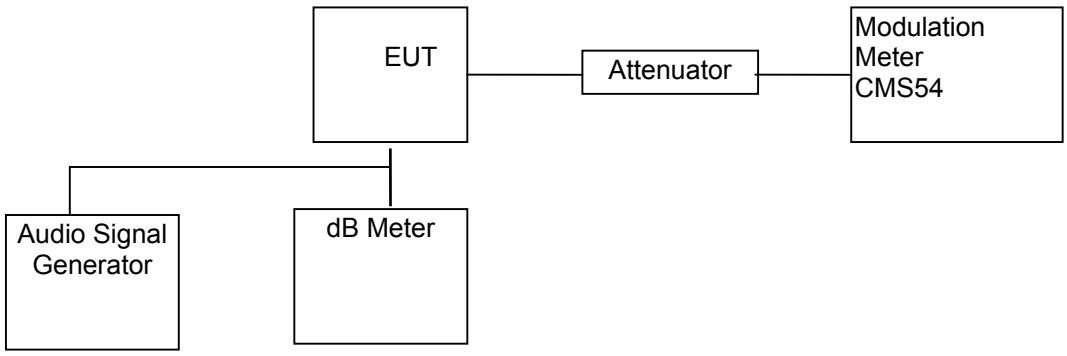
3.2.2 Modulation Limiting Characteristics (Section 2.1047(B))

A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
Radiocommunication Service Monitor	R&S	CMS54
Attenuator	Weinschel Engineering	33-10-33
dB Meter	B&K	2232

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Set the frequency of the audio signal generator to 500Hz and adjusted the level from 47dBSPL to 137dBSPL.
3) Recorded the maximum value of plus or minus peak frequency deviation.
4) Repeated the above procedure with frequency 1000Hz, 2500Hz & 3125Hz.
5) The peak frequency deviation must not exceed ±2.5kHz for 12.5kHz channel spacing system.
6) The peak frequency deviation must not exceed ±5kHz for 25kHz channel spacing system.

C. Test Result

Table 3(a)

Giant Electronics Ltd.
Giant P1808

Modulation Limiting Characteristics

Test Channel : 1 - for 12.5kHz channel spacing system

Modulation Input (dBSPL)	Peak Frequency Deviation (kHz) at 500Hz	Peak Frequency Deviation (kHz) at 1000Hz	Peak Frequency Deviation (kHz) at 2500Hz	Peak Frequency Deviation (kHz) at 3125Hz
47	0.025	0.025	0.030	0.030
57	0.028	0.028	0.031	0.045
67	0.029	0.044	0.065	0.118
77	0.040	0.109	0.194	0.608
87	0.095	0.564	0.863	1.633
97	0.478	1.447	2.156	1.664
107	1.500	2.020	2.192	1.679
117	1.947	2.017	2.182	1.686
127	1.967	2.013	2.196	1.682
137	1.957	2.017	2.182	1.646

Remark: The peak frequency deviation must not exceed ±2.5kHz.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

C. Test Result

Table 3(b)

Giant Electronics Ltd.
Giant P1808

Modulation Limiting Characteristics

Test Channel : 1 - for 25kHz Channel spacing system

Modulation Input (dBSPL)	Peak Frequency Deviation (kHz) at 500Hz	Peak Frequency Deviation (kHz) at 1000Hz	Peak Frequency Deviation (kHz) at 2500Hz	Peak Frequency Deviation (kHz) at 3125Hz
47	0.033	0.033	0.029	0.029
57	0.033	0.034	0.029	0.029
67	0.034	0.035	0.030	0.029
77	0.042	0.042	0.031	0.029
87	0.047	0.095	0.031	0.031
97	0.103	0.485	0.043	0.045
107	0.528	1.323	0.096	0.102
117	1.465	3.455	0.480	0.503
127	3.664	3.957	1.217	1.356
137	4.171	3.973	2.250	2.247

Remark: The peak frequency deviation must not exceed ±5kHz.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

3.2.3 Audio Low Pass Filter Response (Section 2.1047(A))

A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
AC Millivoltmeter	Leader	LMV-182A
dB Meter	B&K	2232

B. Testing Procedure

1) Connected the audio signal generator to the input of the post limiter low pass filter and the dB meter to the output of the post limiter low pass filter.
2) Applied a 1000 Hz tone from the audio signal generator and adjusted the level per manufacturer's specifications. Recorded the dB level of the 1000 Hz tone as LEV_{REF}.
3) Set the audio signal generator to the desired test frequency between 3000 Hz and the upper low pass filter limit. Recorded the dB level at the test frequency as LEV_{FREQ}.
4) Calculated the audio frequency response at the test frequency as:

   low pass filter response = LEV_{FREQ} - LEV_{REF}

5) Repeated the above procedure for all the desired test frequencies.

C. Test Result

For electronic filing, the audio low pass frequency response is saved with filename: lpf.pdf.

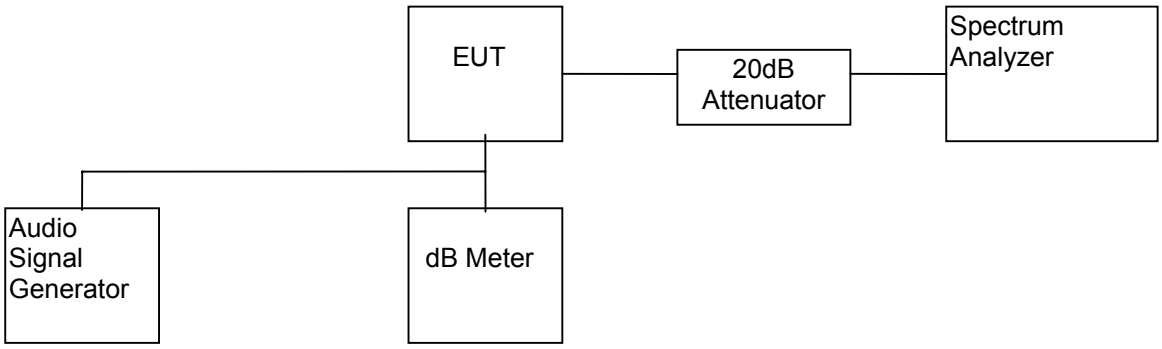
3.3 Occupied Bandwidth & Emission Mask (Section 2.1049, 90.209 & 90.210)

A. Test Equipment

Equipment	Brand Name	Model No.
Audio Signal Generator	HP	HP8904A
Attenuator	Weinschel Engineering	33-10-33
Spectrum Analyzer	R&S	FSP40
dB Meter	B&K	2232

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Set the level of audio signal generator to 2.5kHz and obtained 50% modulation by adjusting the level 16 dB greater than level for modulation limiting characteristics.
3) The occupied bandwidth was measured with the spectrum analyzer set at 2kHz/div scan and 10dB/div.

C. Test Result

For 12.5kHz Channel spacing

Channel	Measured Bandwidth (kHz)	Authorizated Bandwidth (kHz)
1	6.04	11.25
16	6.12	11.25
32	6.04	11.25

For 25kHz Channel spacing

Channel	Measured Bandwidth (kHz)	Authorizated Bandwidth (kHz)
1	11.36	20
16	11.64	20
32	11.32	20

For the electronic filing, the bandwidth plot is saved with filename: bw.pdf

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

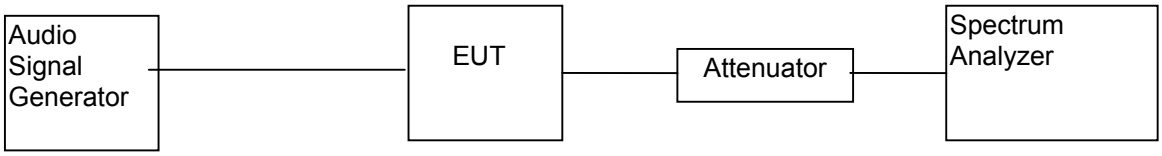
3.3.1 **Emission Mask (Section 90.210)**

A. Test Equipment

Equipment	Brand Name	Model No.
Spectrum Analyzer	R&S	FSP40
Audio Signal Generator	HP	HP8904A
Attenuator	Weinschel Engineering	33-10-33

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Set the level of audio signal generator to 2.5kHz and obtained 50% modulation by adjusting the level 16 dB greater than level for modulation limiting characteristics.

3) The Emission Mask was measured by the spectrum analyzer with appropriate limit.

For the electronic filing, the emission mask plot is saved with filename: emission.pdf

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

3.4 Transmitter Spurious / Harmonic Radiated Emission (Section 90.210)

In order to satisfy the 90.210 requirement, the spurious emission from the EUT was measured and shown in the Exhibit 3.4.1.

3.4.1 **Field Strength of Spurious Radiation**

A. Test Equipment

Equipment	Brand Name	Model No.
Antenna	EMCO	3148, 3104C, 3115
Spectrum Analyzer	Agilent	E4401B
Test receiver	Rohde & Schwarz	ESVS30
RF Filter	Trilithic	3VF500/1000-5-50-CC
Signal Generator	IFR	2023B
Attenuator	Weinschel Engineering	33-10-33

B. Testing Procedure

Radiated emission measurements were performed according to the procedures in TIA-603-C (2004). All measurements were performed in Open Area Test Sites located at Roof Top of Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.

C. Radiated Emission Configuration Photograph

Worst Case Radiated Emission

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

C. Test Result

Table 4(a): Channel 1

For 12.5kHz Channel spacing system - High Power

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
812.200	-31.5	37.2	68.7	57.2	-11.5
1218.300	-38.0	37.2	75.2	57.2	-18.0
1624.400	-42.1	37.2	79.3	57.2	-22.1
2030.500	-38.0	37.2	75.2	57.2	-18.0
2436.600	-26.2	37.2	63.4	57.2	-6.2
2842.700	-24.9	37.2	62.1	57.2	-4.9
3248.800	-28.4	37.2	65.6	57.2	-8.4
3654.900	-29.0	37.2	66.2	57.2	-9.0
4061.000	-33.9	37.2	71.1	57.2	-13.9

Remark:
1. Transmission power was 37.2 dBm or 7.2 dB(W).
2. According to Section 90.210(b), the unwanted emission should be attenuated below P by at least 50 + 10 $\log_{10}$ (P) dB or 57.2 dB.
3. The test was performed according to ANSI/TIA-603-C-2004.
4. The RF spurious/ harmonic emissions in this section would be performed for 12.5kHz channel spacing and the more stringent limit of 50 + 10 $\log_{10}$ (P) would be applied for worst case.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

Table 4(a): Channel 16

For 12.5kHz Channel spacing system - High Power

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
870.200	-31.1	37.0	68.1	57.0	-11.1
1305.300	-39.2	37.0	76.2	57.0	-19.2
1740.400	-41.5	37.0	78.5	57.0	-21.5
2175.500	-38.2	37.0	75.2	57.0	-18.2
2610.600	-32.0	37.0	69.0	57.0	-12.0
3045.700	-32.9	37.0	69.9	57.0	-12.9
3480.800	-28.0	37.0	65.0	57.0	-8.0
3915.900	-30.2	37.0	67.2	57.0	-10.2
4351.000	-34.8	37.0	71.8	57.0	-14.8

Remark: 1. Transmission power was 37.0 dBm or 7.0 dB(W).

2. According to Section 90.210(b), the unwanted emission should be attenuated below P by at least 50 + 10 $\log_{10}$ (P) dB or 57 dB.

3. The test was performed according to ANSI/TIA-603-C-2004.

4. The RF spurious/ harmonic emissions in this section would be performed for 12.5kHz channel spacing and the more stringent limit of 50 + 10 $\log_{10}$ (P) would be applied for worst case.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

Table 4(a): Channel 32

For 12.5kHz Channel spacing system - High Power

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
939.800	-32.9	36.8	69.7	56.8	-12.9
1409.700	-38.8	36.8	75.6	56.8	-18.8
1879.600	-41.5	36.8	78.3	56.8	-21.5
2349.500	-26.6	36.8	63.4	56.8	-6.6
2819.400	-24.9	36.8	61.7	56.8	-4.9
3289.300	-22.0	36.8	58.8	56.8	-2.0
3759.200	-29.0	36.8	65.8	56.8	-9.0
4229.100	-33.9	36.8	70.7	56.8	-13.9
4699.000	-34.2	36.8	71.0	56.8	-14.2

Remark: 1. Transmission power was 36.8 dBm or 6.8 dB(W).

2. According to Section 90.210(b), the unwanted emission should be attenuated below P by at least 50 + 10 $\log_{10}$ (P) dB or 56.8 dB.

3. The test was performed according to ANSI/TIA-603-C-2004.

4. The RF spurious/ harmonic emissions in this section would be performed for 12.5kHz channel spacing and the more stringent limit of 50 + 10 $\log_{10}$ (P) would be applied for worst case.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

Table 4(b): Channel 1

for 12.5kHz channel spacing system - Low Power

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
812.200	-34.0	31.9	65.9	51.9	-14.0
1218.300	-47.8	31.9	79.7	51.9	-27.8
1624.400	-47.0	31.9	78.9	51.9	-27.0
2030.500	-45.0	31.9	76.9	51.9	-25.0
2436.600	-40.5	31.9	72.4	51.9	-20.5
2842.700	-43.8	31.9	75.7	51.9	-23.8
3248.800	-46.5	31.9	78.4	51.9	-26.5
3654.900	-47.0	31.9	78.9	51.9	-27.0

Remark: 1. Transmission power was 31.9 dBm or 1.9 dB(W).

2. According to Section 90.210(d), the unwanted emission should be attenuated below P by at least 20 + 10 $\log_{10}$ (P) dB or 51.9 dB.

3. The test was performed according to ANSI/TIA-603-C-2004.

4. The RF spurious/ harmonic emissions in this section would be performed for 12.5kHz channel spacing and the more stringent limit of 50 + 10 $\log_{10}$ (P) would be applied for worst case.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

Table 4(b): Channel 16

for 12.5kHz channel spacing system - Low Power

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
870.200	-36.0	32.0	68.0	52.0	-16.0
1305.300	-47.8	32.0	79.8	52.0	-27.8
1740.400	-48.5	32.0	80.5	52.0	-28.5
2175.500	-45.1	32.0	77.1	52.0	-25.1
2610.600	-40.6	32.0	72.6	52.0	-20.6
3045.700	-44.8	32.0	76.8	52.0	-24.8
3480.800	-46.5	32.0	78.5	52.0	-26.5
3915.900	-47.8	32.0	79.8	52.0	-27.8

Remark: 1. Transmission power was 32 dBm or 2 dB(W).

2. According to Section 90.210(d), the unwanted emission should be attenuated below P by at least 20 + 10 $\log_{10}$ (P) dB or 52 dB.

3. The test was performed according to ANSI/TIA-603-C-2004.

4. The RF spurious/ harmonic emissions in this section would be performed for 12.5kHz channel spacing and the more stringent limit of 50 + 10 $\log_{10}$ (P) would be applied for worst case.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

Table 4(b): Channel 32

for 12.5kHz channel spacing system - Low Power

Frequency (MHz)	Effective Radiated Power (dBm)	Transmission Power (dBm)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
939.800	-36.6	31.6	68.2	51.7	-16.5
1409.700	-49.2	31.6	80.8	51.7	-29.1
1879.600	-47.8	31.6	79.4	51.7	-27.7
2349.500	-43.3	31.6	74.9	51.7	-23.2
2819.400	-40.2	31.6	71.8	51.7	-20.1
3289.300	-47.5	31.6	79.1	51.7	-27.4
3759.200	-47.0	31.6	78.6	51.7	-26.9
4229.100	-48.9	31.6	80.5	51.7	-28.8

Remark: 1. Transmission power was 31.6 dBm or 1.6 dB(W).

2. According to Section 90.210(d), the unwanted emission should be attenuated below P by at least $43 + 10 \log_{10}$ (P) dB or 51.7 dB.

3. The test was performed according to ANSI/TIA-603-C-2004.

4. The RF spurious/ harmonic emissions in this section would be performed for 12.5kHz channel spacing and the more stringent limit of $50 + 10 \log_{10}$ (P) would be applied for worst case.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

3.5 Transmitter Antenna Power Spurious / Harmonic Conducted Emission (Section 2.1051 & 90.210)

In order to satisfy the 2.1051 & 90.210 requirement, the spurious emission from the EUT was measured and shown in the Exhibit 3.5.

3.5.1 **Conducted Power of Spurious (Section 2.1051 & 90.210)**

A. Test Equipment

Equipment	Brand Name	Model No.
Spectrum Analyzer	R&S	FSP40
Attenuator	Weinschel Engineering	33-10-33

B. Testing Procedure

Conducted Emission measurements were performed according to the procedures in 47CFR 2.1051. The antenna port of the transmitter was connected, via a suitable attenuator, to the input of a spectrum analyzer. The level of spurious emissions, in dB relative to the carrier, was plotted. This data was measured at the upper and lower frequency limits of the frequency range.

C. Test Result

Giant Electronics Ltd.
Giant P1808

Transmitter Antenna Power Spurious / Harmonic Conducted Emission

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

3.6 Frequency Stability (Section 2.1055 & 90.213)

The frequency tolerance was tested in normal condition & over extreme ambient conditions with respect to voltage and temperature variation.

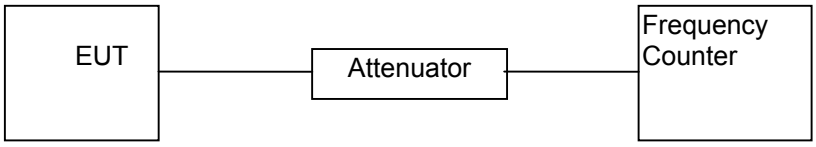
3.6.1 **Frequency Tolerance (Section 2.1055 & 90.213)**

A. Test Equipment

Equipment	Brand Name	Model No.
Attenuator	Weinschel Engineering	33-10-33
Frequency Counter	OPTOELECTRONICS	3000A

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Measured 1, 16, 32 channel frequencies in MHz.

C. Test Result

Table 5

Giant Electronics Ltd.
Giant P1808

Frequency Tolerance

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)
1	406.1000	406.10016	0.39

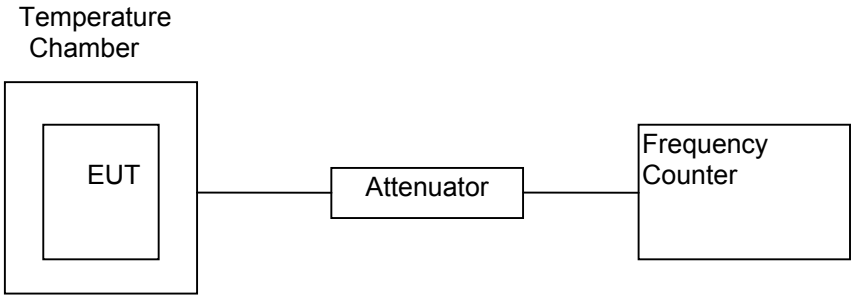
3.6.2 Frequency Stability - Temperature (Section 2.1055 & 90.213)

A. Test Equipment

Equipment	Brand Name	Model No.
Attenuator	Weinschel Engineering	33-10-33
Frequency Counter	OPTOELECTRONICS	3000A

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Frequency measurements were made from -30°C to 50°C and at intervals of 10°C through the range.
3) EUT was stabilized for a sufficient period of time prior to frequency measurement at each temperature level.

C. Test Result

Table 6

Giant Electronics Ltd.
Giant P1808

Frequency Deviation with Temperature Variation

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance (ppm)
-30	406.10000	406.09985	-0.37
-20	406.10000	406.09972	-0.69
-10	406.10000	406.09961	-0.96
0	406.10000	406.09969	-0.76
10	406.10000	406.09982	-0.44
20	406.10000	406.10009	0.22
30	406.10000	406.10024	0.59
40	406.10000	406.10025	0.62
50	406.10000	406.09994	-0.15

Remark: The frequency deviation with temperature variation for different channel spacing were indistinguishable. Therefore, the above data were performed at 25kHz channel spacing operation, and the results were compared with more stringent limit of 12.5kHz channel spacing system, ±2.5ppm.

Test Engineer: Ken Sit Date of Test: January 26-30, 2008

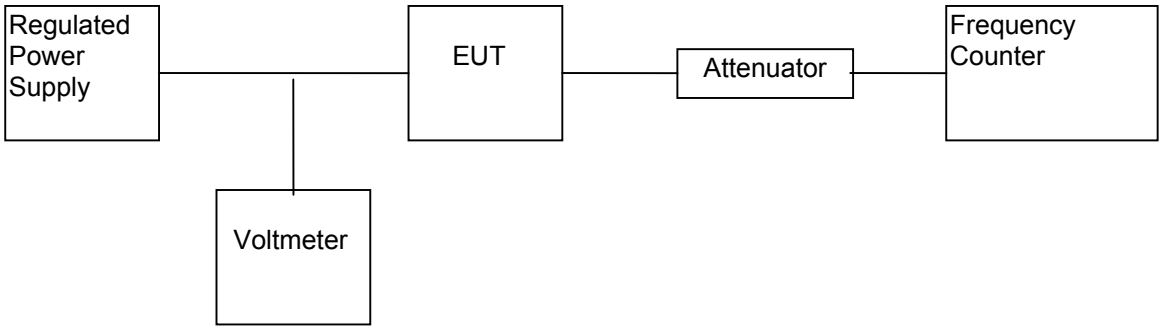
3.6.3 Frequency Stability - Voltage (Section 2.1055)

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Attenuator	Weinschel Engineering	33-10-33
Voltage meter	Fluke	87
Frequency Counter	OPTOELECTRONICS	3000A

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Varied the level of regulated power supply to the manufacturer specified battery end point of the EUT.
3) Measured the channel frequency of channel 1 in MHz.

C. Test Result

Table 7

Giant Electronics Ltd.
Giant P1808

Frequency Deviation with Voltage Variation

The manufacturer specified battery end point 7.0V

Test Channel: 1

Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)
406.1000	406.10046	1.1

Remark: 1) The results were compared with more stringent limit of 12.5kHz channel spacing system, ±2.5ppm.
2) The test voltage was from 7.4V to 7.0V with 0.1V decrement worst case data was shown.

3.7 Transient Frequency Behavior (Section 90.214)

In order to satisfy the 90.214 requirement, the transient frequency behavior from the EUT was measured and shown in the Exhibit 9.1.

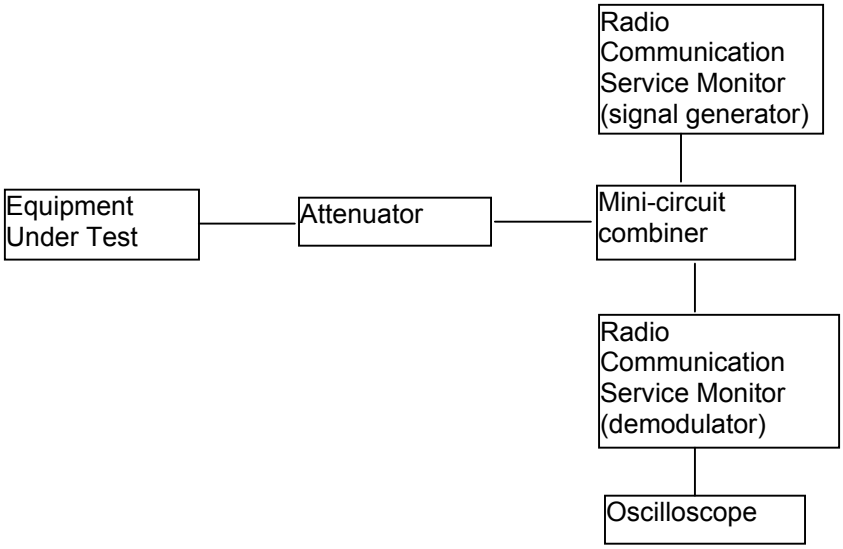
3.7.1 **Transient Frequency Behavior**

A. Test Equipment

Equipment	Brand Name	Model No.
Radio Communication Service Monitor	R&S	CMS54
Digital Phosphor Oscilloscope	Tektronix	TDS 3012B
Attenuator	Weinschel Engineering	33-10-33

B. Testing Procedure

1) Set-up the test equipment in the following configuration:



2) Set the signal generator to the assigned frequency and modulate with a 1kHz at 12.5kHz/ 25kHz deviation and its output level to be 50dB below the transmitter rf output.

3) The oscilloscope captured either the key-up or de-key event as appropriate. The centre frequency and span were set to the appropriate levels. The oscilloscope was placed into the single trigger mode. The radio was keyed up or dekeyed as appropriate, and the resultant captured waveform was plotted.

4) For electronic filing, the transient behavior test result is saved with filename: transient.pdf

C. Limits

Transient frequencies must be within the maximum frequency difference limits during the time intervals indicated:

Time Intervals [1,2]	Maximum Frequency Difference [3]	All Equipment
		400MHz to 470 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 25kHz Channels		
t_1 [4]	±25.0kHz	10.0ms
t_2	±12.5kHz	25.0ms
t_3 [4]	±25.0kHz	10.0ms
Transient Frequency Behavior for Equipment Designed to Operate on 12.5kHz Channels		
t_1 [4]	±12.5kHz	10.0ms
t_2	±6.25kHz	25.0ms
t_3 [4]	±12.5kHz	10.0ms

1. t_{on} is the instant when a 1kHz test signal is completely suppressed, including any capture time due to phasing.
   t_1 is the time period immediately following t_{on}.
   t_2 is the time period immediately following t_1.
   t_3 is the time period from the instant when the transmitter is turned off until t_{on}.
   t_{off} is the instant when the 1kHz test signal starts to rise.
2. During the time from the end of t_2 to the beginning of t_3, the frequency difference must not exceed the limits specified in § 90.213.
3. Difference between the actual transmitter frequency and the assigned transmitter frequency.
4. If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

EXHIBIT 4

RF EXPOSURE

4.0 **RF Exposure**

EUT is subject to the radio frequency exposure requirements specified in FCC Rule §§ 1.1307(b) and 2.1093. It shall be considered to operate in an "occupational / controlled" environment.

[×] EUT was evaluated for Specific Absorption Rate (SAR) evaluation compliance according to OET Bulletin 65, Supplement C (Edition 01-01). It is in compliance with the SAR evaluation requirements. A SAR test report was submitted at the same time and saved as SAR report 1 of 2.pdf and SAR report 2 of 2.pdf

[×] RF exposure training instructions and labeling were specified in user manual and label artwork respectively.

EXHIBIT 5

TECHNICAL SPECIFICATIONS

5.0 **Technical Specifications**

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

EXHIBIT 6

PRODUCT LABELLING

6.0 **Product Labelling**

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

EXHIBIT 7

PHOTOGRAPHS

7.0 Equipment Photographs

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

EXHIBIT 8

INSTRUCTION MANUAL

8.0 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

EXHIBIT 9

TUNE UP PROCEDURE

9.0 **Tune Up Procedure**

For electronic filing, a preliminary copy of the Tune Up Procedure is saved with filename: tuneup.pdf

EXHIBIT 10

PART LIST

10.0 **Part List**

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

EXHIBIT 11

INPUT CURRENT

11.0 **Input Current**

The input current to final r.f. stage at 7.0VDC is 1.15A and 7.0VDC is 0.7A for high power and low power respectively.

EXHIBIT 12

LETTER OF AGENCY

12.0 **Letter of Agency**

For electronic filing, a letter of agency is saved with filename: letter of agency.pdf

EXHIBIT 13

ATTESTATION LETTER

13.0 **Attestation Letter**

For electronic filing, a attestation letter is saved with filename: attestation.pdf

EXHIBIT 14

JUSTIFICATION LETTER

14.0 **Attestation Letter**

For electronic filing, a justification letter is saved with filename: justification.pdf

EXHIBIT 15

CONFIDENTIALITY REQUEST

15.0 **Confidentiality Request**

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