Giant Electronics Limited

Application
For
Type Acceptance
(FCC ID: K7GHH38WXST)

May 4, 1999

WO# 9901001
WN/at
May 4, 1999

- The test results reported in this report shall refer only to the sampel actually tested and shall not refer or be deemed a refer to bulk from which such a sample may be said to have been obtained
.
- This report shall not be reproduced except in full without prior authorization from Intertek Testing Services Hong Kong Limited.

FCC ID: K7GHH38WXST

SUMMARY OF CONTENTS

LIST OF EXHIBITS

INTRODUCTION

EXHIBIT 1:	General Description
EXHIBIT 2:	System Test Configuration
EXHIBIT 3:	RF Power Output
EXHIBIT 4:	Modulation Characteristics
EXHIBIT 5:	Occupied Bandwidth
EXHIBIT 6:	Emission Spurious
EXHIBIT 7:	Frequency Stability
EXHIBIT 8:	Technical Specifications
EXHIBIT 9:	Product Labelling
EXHIBIT 10:	Photographs
EXHIBIT 11:	Instruction Manual
EXHBIIT 12:	CB Transmitter Power

MEASUREMENT/TECHNICAL REPORT

Application: **Giant Electronics Limited**
Model No.: **HH38WXST**
Date: **May 4, 1999**

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

Equipment Type: CB Radio Station (example: computer, printer, modem. etc.)

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:

Wilbur Ng
Intertek Testing Services.
2/F., Garment Centre,
576 Castle Peak Road,
Kowloon, Hong Kong.
Phone: 852-2173-8502
Fax: 852-2745-8306

Table of Contents

1.0 **General Description** 1
1.1 Product Description 2
1.2 Ralated Submittal(s) Grants 3
1.3 Test Methodology 3
1.4 Test Facility 3

2.0 **System Test Configuration** 5
2.1 Justification 6
2.2 EUT Exercising Software 6
2.3 Special Accessories 6
2.4 Equipment Modification 6

3.0 **RF Output Power (Section 95.639(d)** 8

4.0 **Modulation Characteristics (Section 95.637(a))** 13
4.1 Modulation Frequiency Response 14
4.2 Modulation Limiting Characteristic 16
4.3 Over Modulation Transient Response 18

5.0 **Occupied Bandwidth (Section 95.633(c)** 21

6.0 **Spurious Emission (Section 95.635(b))** 23
6.1 Spurious Emission at the Antenna Terminal 24
6.2 Field Strength of Spurious Radiation 28

7.0 **Frequency Stanility (Section 95.627)** 34
7.1 Frequency Tolerance 35
7.2 Temperature Extreme Condition 38
7.3 Voltage Extreme Condition 42

8.0 **Technical Specifications** 45

9.0 **Product Labelling** 48

10.0 **Equipment Photographs** 50

11.0 **Instruction Manual** 52

12.0 **CB Transmitter Power** 54

STATEMENT OF CONFORMITY

This unit has been found to conform with the following parts of the 47 CFR as detailed below:

2.911 This report is certified by a qualified individual. This signature is located in the Measurement Section.

2.983 The name of the applicant and identification of the equipment is provided on Form 731. The product will be produced in mass quantities. The technical description information is included in Exhibit 1, Exhibit 8 to 12.

2.985 RF power data is located in Exhibit 3.1.

2.987 Modulation characteristics are detailed in Exhibit 4.0.

2.989 Occupied bandwidth measurements are detailed in Exhibit 5.0.

2.993 The field strength of spurious emissions was measured and the data is recorded in Exhibit 6.0.

2.995 The frequency stability of the unit, with respect to voltage and temperature variation, was measured and the results are recorded in Exhibit 7.0.

2.997 The frequency range investigated was from the lowest frequency present in the device to higher than the tenth harmonic of the carrier frequency.

EXHIBIT 1

GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The HH38WXST is a 40 Channel mobile Citizen Band (CB) transceiver wotj 10 channel weather receiver. The unit is powered from 13.8 Vdc.

Transmitter portion:
i) Type of emission: 6K00A3E
ii) Frequency Range: 26.965 MHz to 27.405 MHz
iii) Maximum Power Rating: 4 Watt

Receiver Portion:
i) Type of Receiver: Superheterodyne receiver
ii) Tuning Frequency: 26.965 MHz to 27.405 MHz
iii) Local Oscillator: 26.965 MHz to 27.405 MHz
iv) IF: 10.695 MHz and 455 Hz

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

1.2 Related Submittal(s) Grants

This is an Application for Type Acceptance of the transmitter portion of a CB Transceiver. The receiver section of this product is subject to verification process.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992). 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 and conducted measurement facility 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 (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. When the radiated emissions are measured.

The device was powered by a DC power supply adjusted to give 13.8 Vdc.

For measuring spurious and harmonic emissions of the transmitter, a 50Ω load was connected to the antenna terminal.

The frequency range from 25 MHz to 1 GHz was searched for spurious emissions from the device. Harmonic emissions of the transmitter were investigated up to 5 GHz. 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 unit is powered on, a signal is transmitted.

2.3 Special Accessories

A headset is provided for compliance of this product.

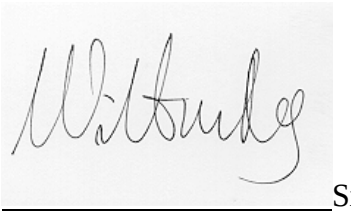
2.4 Equipment Modification

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

No modification were installed by Intertek Testing Services.

Confirmed by:

Wilbur Ng
Assistant Manager
Intertek Testing Services
Agent for Giant Electronics Limited


Signature

May 5, 1999 Date

EXHIBIT 3

RF POWER OUTPUT

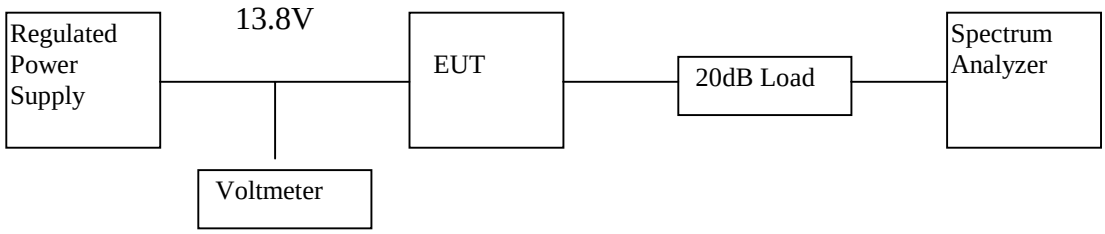
3.0 **RF Power Output (Section 2.985(a))**

A. Equipment Used

Equipment	**Brand Name**	**Model No.**
Regulated Power Supply	PAD	35-30L
Voltmeter	Fluke	87
Spectrum Analyzer	Hewlett Packard	8591EM
20dB RF Load	Bird	8304-200-N

B. Testing Procedure

1) Setup the test equipment in the following configuration:



2) Measure the power of all channels (40 channels) by Spectrum Analyzer in Watt.
3) Calculate the actual power by times the measured power with a correction factor, 104.7*
   ie. Actual Power = measured Power * 104.7

* The Correction Factor is included the 20dB Load and cable loss between EUT and 20dB load.

Table 1

Giant Electronics Limited
HH38WXST

Transmission Power

Channel	Frequency (MHz)	Measured Power (mW)	Net Power (W)	Limit (W)	Margin (W)
1	26.965	38.01	3.98	4	-0.02
2	26.975	38.01	3.98	4	-0.02
3	26.985	38.01	3.98	4	-0.02
4	27.005	38.01	3.98	4	-0.02
5	27.015	38.01	3.98	4	-0.02
6	27.025	38.01	3.98	4	-0.02
7	27.035	38.01	3.98	4	-0.02
8	27.055	38.01	3.98	4	-0.02
9	27.065	38.01	3.98	4	-0.02
10	27.075	38.01	3.98	4	-0.02
11	27.085	38.01	3.98	4	-0.02
12	27.105	38.01	3.98	4	-0.02
13	27.115	38.01	3.98	4	-0.02
14	27.125	38.01	3.98	4	-0.02
15	27.135	38.01	3.98	4	-0.02

Notes: Negative sign in the margin column shows the value below limits.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

Table 1 (Cont'd...)

Giant Electronics Limited
HH38WXST

Transmission Power

Channel	Frequency (MHz)	Measured Power (mW)	Net Power (W)	Limit (W)	Margin (W)
16	27.155	38.01	3.98	4	-0.02
17	27.165	38.01	3.98	4	-0.02
18	27.175	38.01	3.98	4	-0.02
19	27.185	38.01	3.98	4	-0.02
20	27.205	38.01	3.98	4	-0.02
21	27.215	38.01	3.98	4	-0.02
22	27.225	38.01	3.98	4	-0.02
23	27.255	38.01	3.98	4	-0.02
24	27.235	38.01	3.98	4	-0.02
25	27.245	38.01	3.98	4	-0.02
24	27.265	38.01	3.98	4	-0.02
27	27.275	38.01	3.98	4	-0.02
28	27.285	38.01	3.98	4	-0.02
29	27.295	38.01	3.98	4	-0.02
30	27.305	38.01	3.98	4	-0.02

Notes: Negative sign in the margin column shows the value below limits.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

Table 1 (Cont'd...)

Giant Electronics Limited
HH38WXST

Transmission Power

Channel	Frequency (MHz)	Measured Power (mW)	Net Power (W)	Limit (W)	Margin (W)
31	27.315	38.01	3.98	4	-0.02
32	27.325	38.01	3.98	4	-0.02
33	27.335	38.01	3.98	4	-0.02
34	27.345	38.01	3.98	4	-0.02
35	27.355	38.01	3.98	4	-0.02
36	27.365	38.01	3.98	4	-0.02
37	27.375	38.01	3.98	4	-0.02
38	27.385	38.01	3.98	4	-0.02
39	27.395	38.01	3.98	4	-0.02
40	27.405	38.01	3.98	4	-0.02

Notes: Negative sign in the margin column shows the value below limits.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

EXHIBIT 4

MODULATION CHARACTERISTICS

4.0 **Modulation Characteristics**

In order to satisfy the 2.987 requirement, Modulation Frequency Response, Modulation Limit Characteristics and Over Modulation Transient Response, are tested and result are saved with filename: mfr.pdf, mlc.pdf and mtr.pdf respectively.

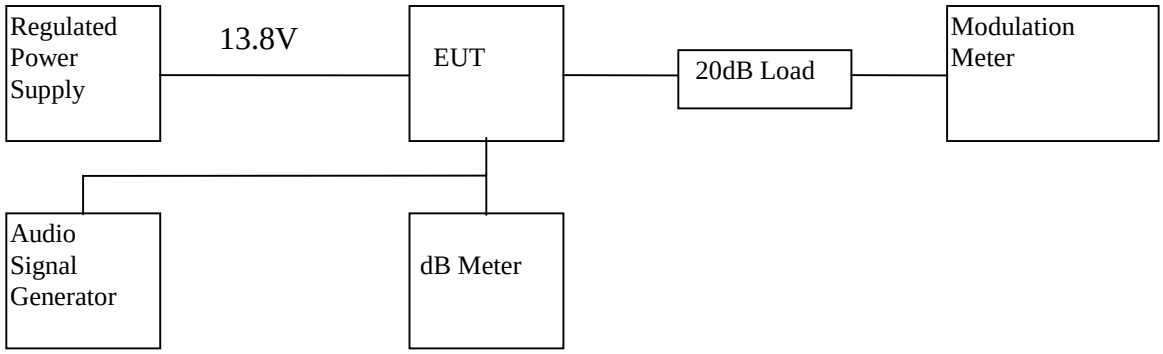
4.1 Modulation Frequency Response

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Audio Signal Generator	Leader	LFG-1300S
dB meter	Leader	LMV-182A
20 dB RF Load	Bird	8304-200-N
Modulation Meter	Marconi Instrument	2945

B. Testing Procedure

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



2) Set the audio signal generator frequency to 2kHz and adjust level to obtain 50% modulation. And then adjust the frequency to obtain the maximum audio frequency response of the EUT.
3) Adjust the level of audio signal generator to give 50% modulation at the maximum audio frequency response and take this level as the 0dB reference level.
4) The frequency of the audio signal generator is changed form 100Hz to 10kHz and adjust the level to obtain the 50% modulation at each frequency.
5) Record the level at each frequency reference to 0dB Level.

C. Test Result

Table 2

Giant Electronics Limited
HH38WXST

Modulation Frequency Response (Section 2.987(a))

Test Channel : 19
0 dB Level: -41.4 dBm
Modulation Output : 50%

Modulation Frequency (Hz)	Modulation input relative to max. output. (dB)
100	23.0
200	11.4
300	4.1
400	1.5
500	0.2
600	0.0
700	0.0
800	0.0
900	0.3
1000	0.7
1200	1.5
1500	2.8
2000	5.0
2500	7.1
3000	9.6
4000	12.3
5000	13.9
6000	16.3
7000	18.5
8000	20.3
9000	22.6
10000	24.2

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

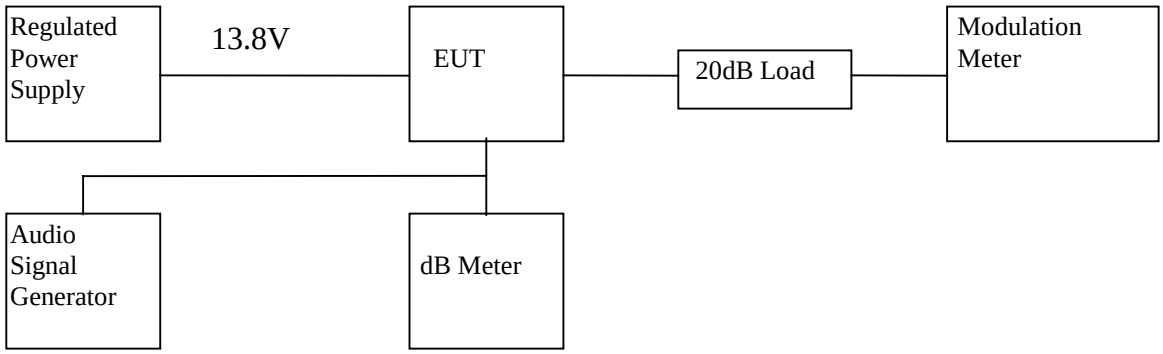
4.2 Modulation Limiting Characteristics (Section 2.987(b))

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Audio Signal Generator	Leader	LFG-1300S
dB meter	Leader	LMV-182A
20 dB RF Load	Bird	8304-200-N
Modulation Meter	Marconi	2950

B. Testing Procedure

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



2) Set the frequency of the audio signal generator to 400Hz and adjust the level from -70dBm to 0dBm. Record the output modulation index.
3) Repeat the above procedure with frequency 700Hz, 1200Hz, 2500Hz & 5000Hz.

C. Test Result

Table 3

Giant Electronics Limited
HH38WXST

Modulation Limiting Characteristics

Test Channel : 19

Modulation Input (dBm)	Modulation Index(%) at 400Hz	Modulation Index(%) at 700Hz	Modulation Index(%) at 1200Hz	Modulation Index(%) at 2500Hz	Modulation Index(%) at 5000Hz
-60	4	5	5	3	3
-50	12	16	14	8	5
-40	47	59	49	24	12
-30	64	69	71	66	36
-20	65	71	71	67	68
-10	67	78	73	68	73
0	72	77	77	72	73
10	79	88	92	88	92

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

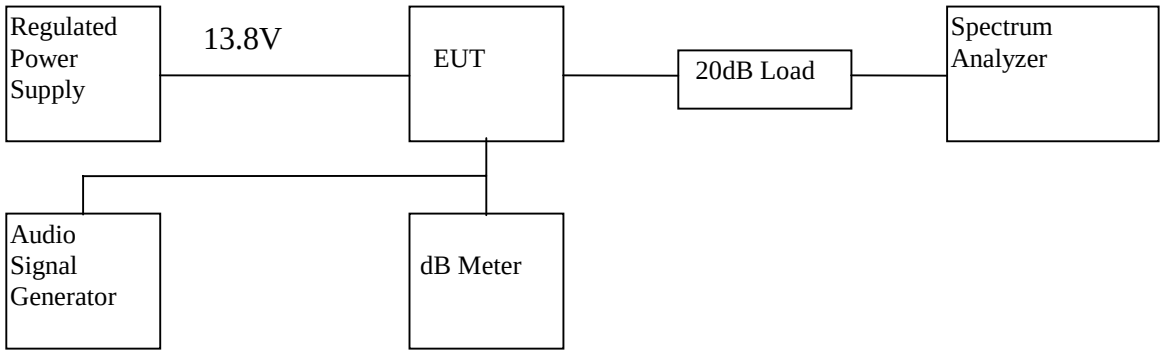
4.3 Over Modulation Transient Response (Section 2.987(b))

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Audio Signal Generator	Leader	LFG-1300S
dB meter	Leader	LMV-182A
20 dB RF Load	Bird	8304-200-N
Spectrum Analyzer	Hewlett Packard	8951EM

B. Testing Procedure

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



2) Set the frequency of the audio signal generator to 2.5kHz at level 16dB greater than required for 50% modulation.
3) Use the other audio signal generator pulse the previous signal at one P.P.S. with pulse width of 0.5 second.
4) Tune the spectrum analyzer to the channel on which the transmitter is set and adjust the setting as for the measurement of occupied bandwidth.
5) And then tune the spectrum analyser to adjacent channel(+/-10kHz) and use "Zero-scan" to observe the transients caused by the pulsed modulation.

C. Test Result

Table 4

Giant Electronics Limited
HH38WXST

Over modulation Transient Response

Channel	Adjacent Frequency (MHz)	Transient Level with respect to TP in (dB)	Transient Duration (ms)
1	26.955	-31.8	32.5
1	26.975	-29.2	32.5
19	27.175	-25.4	40.0
19	27.195	-25.2	35.0
40	27.395	-34.7	37.5
40	27.415	-26.5	35.0

Remark: '-' sign in the Transient Level respect to the carrier Level column mean below the carrier level.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

EXHIBIT 5

OCCUPIED BANDWIDTH

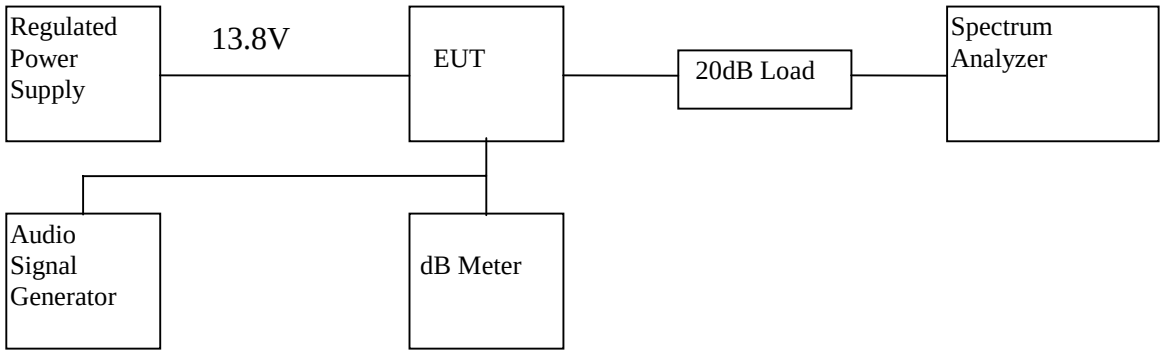
5.0 Occupied Bandwidth (Section 2.989 & Section 95.633)

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Audio Signal Generator	Leader	LFG-1300S
dB meter	Leader	LMV-182A
20 dB RF Load	Bird	8304-200-N
Spectrum Analyzer	Hewlett Packard	8951EM

B. Testing Procedure

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



2) Set the level of audio signal generator to obtain 16 dB greater than required for 50% modulation.
3) The occupied bandwidth is measured with the spectrum analyzer set at 5kHz/div scan and 10dB/div.

C. Test Result

The occupied Bandwidth is measured to be 6 kHz.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

EXHIBIT 6

SPURIOUS EMISSION

6.0 **Spurious Emission**

In order to satisfy the 2.991 & 2.993 requirement, the spurious emission from the antenna terminal and from the EUT are measured and shown in the Exhibit 6.1 & 6.2

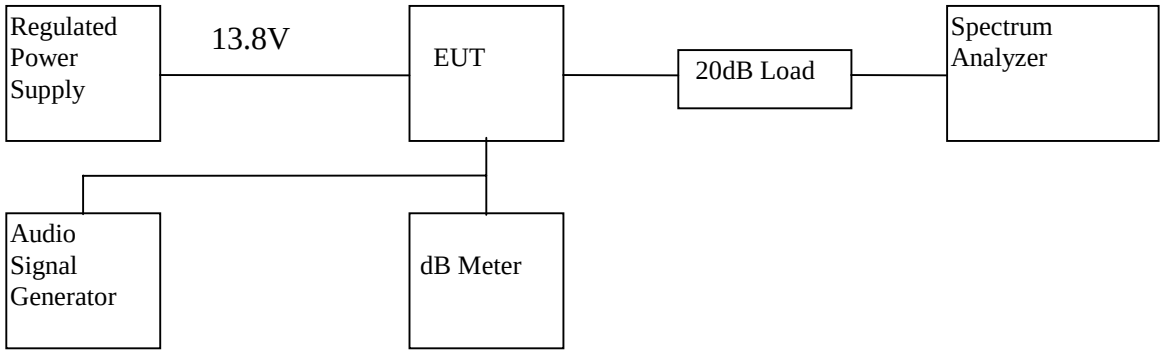
6.1 **Spurious emission at the antenna terminal (Section 2.991 & Section 95.631)**

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Audio Signal Generator	Leader	LFG-1300S
dB meter	Leader	LMV-182A
20 dB RF Load	Bird	8304-200-N
RF Filter	Tailithic	3VF
Spectrum Analyzer	Hewlett Packard	8951EM

B. Testing Procedure

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



2) Set the level of audio signal generator to obtain 16 dB greater than required for 50% modulation.
3) Plot the graph of emissions with 50kHz span.
4) Measure the emissions relative to TP in region CARRIER ± 4kHz to CARRIER ± 20kHz from the plot.
5) Record the emissions relative to TP from region CARRIER ± 20kHz to 1000MHz.

C. Test Result

Giant Electronics Limited
HH38WXST
Table 5(a)

1) Unwanted emission from CARRIER ± 4kHz to Carrier ± 20kHz (Refer to the plots which are saved with filename: spurious.pdf)

Region	Unwanted emission		
	Channel 1	Channel 19	Channel 40
CARRIER ± 4kHz to ± 8kHz	< 25dB	< 25dB	< 25dB
CARRIER ± 8kHz to ± 20kHz	< 35dB	< 35dB	< 35dB

2) Unwanted emission from CARRIER ± 20kHz to 1000MHz

Table 5(b): Channel 1

Frequency (MHz)	Emission relative to TP (dB)	Limit (dB)	Margin (dB)
54.934	-109.6	-60	-49.6
80.901	-108.9	-60	-48.9
107.868	-95.8	-60	-35.8
134.835	-94.0	-60	-34.0
161.802	-89.9	-60	-29.9
188.769	-90.1	-60	-30.1
215.716	-89.8	-60	-29.8
242.703	-87.9	-60	-27.9
269.670	-82.9	-60	-22.9

Remark: 1. '-' sign in margin column shows the value below the limits.

2. Any emissions and other harmonics which are attenuated more than 20dB below the permissible value need not be recorded.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

Giant Electronics Limited
HH38WXST

Table 5(c): Channel 19

Frequency (MHz)	Emission relative to TP (dB)	Limit (dB)	Margin (dB)
54.373	-107.4	-60	-47.4
81.560	-108.3	-60	-48.3
108.746	-93.7	-60	-33.7
135.933	-92.8	-60	-32.8
163.119	-88.9	-60	-28.9
190.306	-91.2	-60	-31.2
217.492	-90.2	-60	-30.2
244.679	-89.4	-60	-29.4
271.865	-81.8	-60	-21.8

Remark: 1. '-' sign in margin column shows the value below the limits.

2. Any emissions and any other harmonics which are attenuated more than 20dB below the permissible value need not be recorded.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

Table 5(d): Channel 40

Frequency (MHz)	Emission relative to TP (dB)	Limit (dB)	Margin (dB)
54.815	-108.4	-60	-48.4
82.223	-106.8	-60	-46.8
109.630	-93.7	-60	-33.7
137.038	-92.8	-60	-32.8
164.445	-91.4	-60	-31.4
191.853	-91.7	-60	-31.7
219.260	-88.9	-60	-28.9
246.668	-89.7	-60	-29.7
274.075	-81.8	-60	-21.8

Remark: 1. '-' sign in margin column shows the value below the limits.

2. Any emissions and any other harmonics which are attenuated more than 20dB below the permissible value need not be recorded.

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

6.2 Field Strength of Spurious Radiation (Section 2.993)

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
Antenna	CDI	B100,B200,B300
Test receiver	Rohde & Schwarz	ESVS30
RF Filter	Tailithic	3VF

B. Testing Procedure

Radiated emission measurements were performed according to the procedures in ANSI C63.4(1992). 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 worst case radiated emission configuration photograph is saved with filename :radiated1.jpg and radiated2.jpg

D. Test Result

Table 6

Giant Electronics Limited
HH38WXST
Radiated Spurious Emissions

Channel : 1
The output power of transmitter is 36 dBm

Antenna Polarity	Frequency (MHz)	Reading (dBμV)	Antenna Factor (dB)	Net at 3m (dBμV/m)	ERP (dBm)	ERP to related TOP*
V	53.934	22.4	11	33.4	-61.8	-97.8
V	80.901	28.1	6	34.1	-61.1	-97.1
H	107.868	34.2	13	47.2	-48.0	-84.0
H	134.835	36.0	13	49.0	-46.2	-82.2
H	161.802	37.1	16	53.1	-42.1	-78.1
H	188.769	36.9	16	52.9	-42.3	-78.3
H	215.736	36.2	17	53.2	-42.0	-78.0
H	242.703	36.1	19	55.1	-40.1	-76.1
H	269.670	38.1	22	60.1	-35.1	-71.1
H	296.637	32.2	22	54.2	-41.0	-77.0
H	323.604	23.2	24	47.2	-48.0	-84.0
H	350.571	26.2	24	50.2	-45.0	-81.0
H	377.530	28.1	24	52.1	-43.1	-79.1
H	404.490	24.6	24	48.6	-46.6	-82.6
H	431.464	19.1	25	44.1	-51.1	-87.1

* "TOP" is Transmitter Output Power

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

D. Test Result

Table 7

Giant Electronics Limited
HH38WXST
Radiated Spurious Emissions

Channel : 19
The output power of transmitter is 36 dBm

Antenna Polarity	Frequency (MHz)	Reading (dBμV)	Antenna Factor (dB)	Net at 3m (dBμV/m)	ERP (dBm)	ERP to related TOP*
V	54.373	24.6	11	35.6	-59.6	-95.6
V	81.560	27.7	7	34.7	-60.5	-96.5
H	108.746	36.3	13	49.3	-45.9	-81.9
H	135.933	37.2	13	50.2	-45.0	-81.0
H	163.119	37.1	17	54.1	-41.1	-77.1
H	190.306	35.8	16	51.8	-43.4	-79.4
H	217.492	35.8	17	52.8	-42.4	-78.4
H	244.679	33.6	20	53.6	-41.6	-77.6
H	271.865	39.2	22	61.2	-34.0	-70.0
H	299.052	34.4	22	56.4	-38.8	-74.8
H	326.238	25.6	24	49.6	-45.6	-81.6
H	353.425	26.3	24	50.3	-44.9	-80.9
H	380.611	30.1	24	54.1	-41.1	-77.1
H	407.798	25.4	24	49.4	-45.8	-81.8
H	434.984	18.2	25	43.2	-52.0	-88.0

* "TOP" is Transmitter Output Power

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

D. Test Result

Table 8

Giant Electronics Limited
HH38WXST
Radiated Spurious Emissions

Channel : 40
The output power of transmitter is 36 dBm

Antenna Polarity	Frequency (MHz)	Reading (dBμV)	Antenna Factor (dB)	Net at 3m (dBμV/m)	ERP (dBm)	ERP to related TOP*
V	54.815	23.6	11	34.6	-60.6	-96.6
V	82.223	29.2	7	36.2	-59.0	-95.0
H	109.630	36.3	13	49.3	-45.9	-81.9
H	137.038	37.2	13	50.2	-45.0	-81.0
H	164.445	34.6	17	51.6	-43.6	-79.6
H	191.853	35.3	16	51.3	-43.9	-79.9
H	219.260	37.1	17	54.1	-41.1	-77.1
H	246.668	36.3	20	56.3	-38.9	-74.9
H	274.075	39.2	22	61.2	-34.0	-70.0
H	301.483	34.2	22	56.2	-39.0	-75.0
H	328.890	23.4	24	47.4	-47.8	-83.8
H	356.298	27.3	24	51.3	-43.9	-79.9
H	383.705	27.3	24	51.3	-43.9	-79.9
H	411.113	24.3	25	49.3	-45.9	-81.9
H	438.520	18.6	26	44.6	-50.6	-86.6

* "TOP" is Transmitter Output Power

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

EXHIBIT 7

FREQUENCY STABILITY

7.0 **Frequency Stability**

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

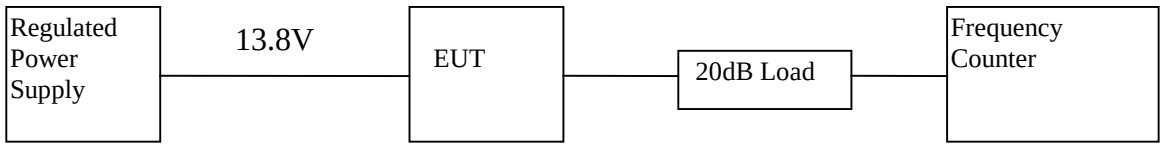
7.1 Frequency Tolerance (Section 95.625)

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
20 dB RF Load	Bird	8304-200-N
Frequency Counter	Phillips	PM6668

B. Testing Procedure

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



2) Measure all transmit channel frequencies in MHz.

C. Test Result

Table 9

Giant Electronics Limited
HH38WXST
Frequency Tolerance

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (%)
1	26.96500	26.96525	0.00093
2	26.97500	26.97525	0.00093
3	26.98500	26398525	0.00093
4	27.00500	27.00525	0.00093
5	27.01500	27.01525	0.00093
6	27.02500	27.02525	0.00093
7	27.03500	27.03525	0.00092
8	27.05500	27.05525	0.00092
9	27.06500	27.06513	0.00048
10	27.07500	27.07252	0.00092
11	27.08500	27.08513	0.00048
12	27.10500	27.10513	0.00048
13	27.11500	27.11525	0.00092
14	27.12500	27.12525	0.00092
15	27.13500	27.13525	0.00092
16	27.15500	27.15525	0.00092
17	27.16500	27.16525	0.00092
18	27.17500	27.17513	0.00048
19	27.18500	27.18515	0.00055
20	27.20500	27.20515	0.00055
21	27.21500	27.21515	0.00055
22	27.22500	27.22515	0.00055
23	27.25500	27.25515	0.00055
24	27.23500	27.23515	0.00055
25	27.24500	27.24515	0.00055
26	27.26500	27.26503	0.00011

C. Test Result

Table 9 (Cont'd...)

Giant Electronics Limited
HH38WXST
Frequency Tolerance

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (%)
27	27.27500	27.27515	0.00055
28	27.28500	27.28503	0.00011
29	27.29500	27.29503	0.00011
30	27.30500	27.30515	0.00055
31	27.31500	27.31515	0.00055
32	27.32500	27.32503	0.00011
33	27.33500	27.33515	0.00055
34	27.34500	27.34515	0.00055
35	27.35500	27.35515	0.00055
36	27.36500	27.36515	0.00055
37	27.37500	27.37515	0.00055
38	27.38500	27.38515	0.00055
39	27.39500	27.38515	0.00055
40	27.40500	27.40513	0.00047

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

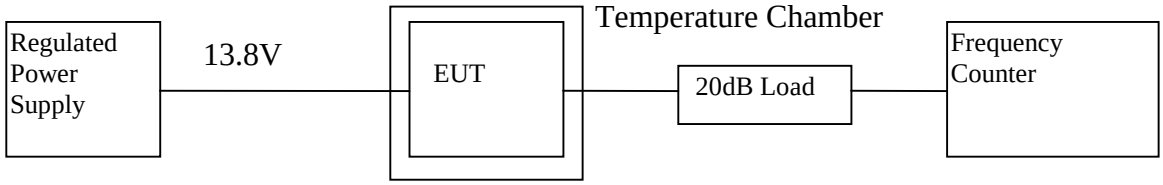
7.2 Frequency Stability - Temperature (Section 2.995)

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
20 dB RF Load	Bird	8304-200-N
Frequency Counter	Phillips	PM6668

B. Testing Procedure

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



2) Set the Temperature Chamber to -30°C and stabilize the EUT temperature for one hour. Apply standard input voltage of 13.8 volts with transmitter ON for two minutes.
3) Measure the channel frequency of channel 1, 19, 40 in MHz.
4) Turn the EUT OFF
5) Repeat the above procedure with 10°C intervals form -30°C to 50°C

C. Test Result

Table 10

Giant Electronics Limited
HH38WXST

Frequency Deviation with Temperature Variation

Channel : 1

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
-30	26.96500	26.96490	-0.00037
-20	26.96500	26.96497	-0.00011
-10	26.96500	26.96506	0.00022
0	26.96500	26.96508	0.00030
10	26.96500	26.96509	0.00033
20	26.96500	26.96510	0.00037
30	26.96500	26.96512	0.00045
40	26.96500	26.96513	0.00048
50	26.96500	26.96516	0.00059

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

C. Test Result

Table 11

Giant Electronics Limited
HH38WXST

Frequency Deviation with Temperature Variation

Channel : 19

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
-30	27.18500	27.18494	-0.00022
-20	27.18500	27.18496	-0.00015
-10	27.18500	27.18506	0.00022
0	27.18500	27.18508	0.00029
10	27.18500	27.18509	0.00033
20	27.18500	27.18510	0.00037
30	27.18500	27.18512	0.00044
40	27.18500	27.18514	0.00051
50	27.18500	27.18516	0.00059

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

C. Test Result

Table 12

Giant Electronics Limited
HH38WXST

Frequency Deviation with Temperature Variation

Channel : 40

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
-30	27.40500	27.40495	-0.00018
-20	27.40500	27.40497	-0.00011
-10	27.40500	27.40506	0.00022
0	27.40500	27.40508	0.00029
10	27.40500	27.40509	0.00033
20	27.40500	27.40510	0.00036
30	27.40500	27.40512	0.00044
40	27.40500	27.40514	0.00051
50	27.40500	27.40516	0.00058

Test Engineer: Billy C. M. Chow Date of Test: May 4, 1999

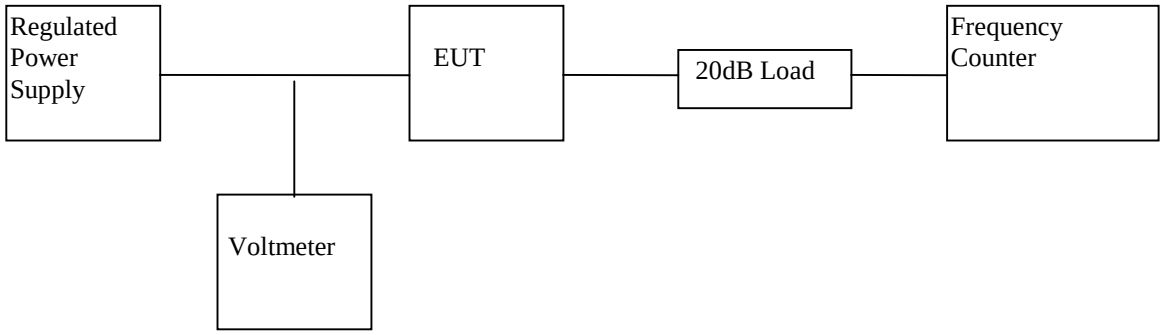
7.3 Frequency Stability - Voltage (Section 2.995)

A. Test Equipment

Equipment	Brand Name	Model No.
Regulated Power Supply	PAD	30-35L
20 dB RF Load	Bird	8304-200-N
Voltage meter	Fluke	87
Frequency Counter	Phillips	PM6668

B. Testing Procedure

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



2) Vary the level of regulated power supply from 85% to 115% of the rated voltage and the manufacturer specified battery end point of the EUT.
3) Measure the channel frequency of channel 1, 19, 40 in MHz at each input power level.

C. Test Result

Table 13

Giant Electronics Limited
HH38WXST

Frequency Deviation with Voltage Variation

The manufacturer specified battery end point 8.5V

Channel : 1

Voltage (V)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
11.7	26.96500	26.96525	0.00093
13.8	26.96500	26.96525	0.00093
15.9	26.96500	26.96513	0.00048
8.5	26.96500	26.96513	0.00048

Channel : 19

Voltage (V)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
11.7	27.18500	27.18513	0.00048
13.8	27.18500	27.18513	0.00048
15.9	27.18500	27.18513	0.00048
8.5	27.18500	27.18250	-0.00920

Channel : 40

Voltage (V)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
11.7	27.40500	27.40525	0.00091
13.8	27.40500	27.40513	0.00047
15.9	27.40500	27.40525	0.00091
8.5	27.40500	27.40525	0.00091

EXHIBIT 8

TECHNICAL SPECIFICATIONS

8.0 **Technical Specifications**

For electronic filing, the block diagram of the EUT is saved with block.pdf.

8.2 Schematic Diagram

For electronic filing, the circuit diagram of the EUT is saved with circuit.pdf.

EXHIBIT 9

PRODUCT LABELLING

9.0 **Product Labelling**

For electronic filing, the label artwork and location of the EUT is saved with label.pdf.

EXHIBIT 10

PHOTOGRAPHS

10.0 Equipment Photographs

Photographs of the tested EUT are saved with filename: ophoto1.jpg to ophoto2.jpg for external photo and iphoto1.jpg to iphoto2.jpg for internal photo.

EXHIBIT 11

INSTRUCTION MANUAL

11.0 Instruction Manual

For electronic filing, the user manual of the EUT is saved with manual.pdf.

Please note that the required FCC Information to the User can be found at the front of this manual.

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

EXHIBIT 12

CB TRANSMITTER POWER

12.0 CB Transmitter Power

The dissipation rating of all the semiconductors or electron tubes which supply RF power to the antenna terminals of each CB transmitter does not exceed 10W. The specification is saved with filename: power.pdf.