

RadioShack Corporation

Application
For
Certification
(FCC ID: AAO2101705)

July 28, 2000

WO# 0005315
WL/at
July 28, 2000

- The test results reported in this report shall refer only to the sample 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
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FCC ID: AAO2101705

Intertek Testing Services Hong Kong Ltd.

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INTERTEK TESTING SERVICES

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INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Application: RadioShack Corporation
Trade Name: RadioShack
Model No.: 21-1705
Date: July 28, 2000

This report concerns (check one:) Original Grant ☒ 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 ☒

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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Intertek Testing Services.
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List of attached file

Exhibit type	File Description	filename
Cover Letter	Letter of Agency	letter.pdf
Test Report	Test Report	report.doc
Operation Description	Technical Description	descri.pdf
Test Report	Modulation Frequency Response	mfr.pdf
Test Report	Modulation Limiting Characteristics	mlc.pdf
Test Report	Modulation Transient Response	mtr.pdf
Test Report	Bandwidth Plot	bw.pdf
Test Setup Photo	Radiated emission	radiated1.jpg, radiated2.jpg
Test Report	Spurious emission plot	spurious.pdf
External Photo	External Photo	ophoto1.jpg to ophoto2.jpg
Internal Photo	Internal Photo	ipphoto1.jpg to ipphoto4.jpg
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	Electronic Tube specification	power.pdf

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.

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EXHIBIT 1

GENERAL DESCRIPTION

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1.0 **General Description**

1.1 Product Description

The 21-1705 is a 40 Channel mobile citizen Band (CB) transceiver. 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
- iv) Source-based Time-averaged Duty Factor: <50% (Push to Talk Device)

Receiver Portion:

- i) Type of Receiver: Superheterodyne receiver
- ii) Tuning Frequency: 26.965 MHz to 27.405 MHz
- iii) Local oscillator: 10.695 MHz and 10.240 MHz
- iv) IF: 10.695 MHz and 455 kHz

For compliance with FCC RF exposure requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

For electronic filing, 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 CB Transceiver. The receiver section of the CB Transceiver is subject to the verification process, in accordance with Section 15.101(b).

1.3 Test Methodology

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.

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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 mounted to a cardboard box, 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 50 Ω 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.

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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

There is no special accessory necessary for compliance of this product.

2.4 Equipment Modification

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

No modification were installed by Intertek Testing Services.

Confirmed by:

*Wilson Loke
Manager
Intertek Testing Services
Agent for RadioShack Corporation*

_____ Signature

August 7, 2000 _____ Date

EXHIBIT 3

RF POWER OUTPUT

INTERTEK TESTING SERVICES

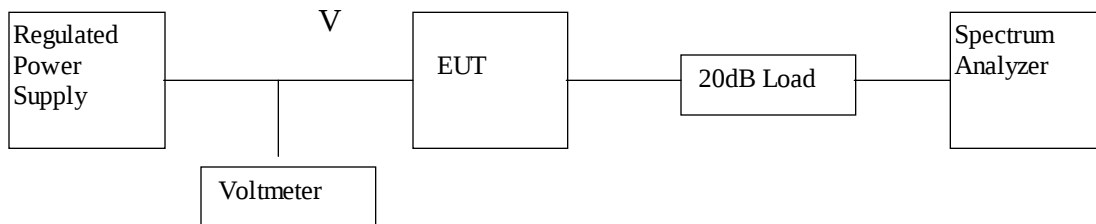
3.0 **RF Power Output (Section 2.985(a))**

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.

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Table 1

**RadioShack Corporation
RadioShack 21-1705**

Transmission Power

Channel	Frequency (M H z)	M easured Power (W)	N et Power (W)	L i m i t (W)	M a r g i n (W)
1	26.965	31.00	3.25	4	-0.75
2	26.975	30.50	3.19	4	-0.81
3	26.985	30.50	3.19	4	-0.81
4	27.005	30.50	3.19	4	-0.81
5	27.015	30.50	3.19	4	-0.81
6	27.025	30.50	3.19	4	-0.81
7	27.035	30.50	3.19	4	-0.81
8	27.055	30.50	3.19	4	-0.81
9	27.065	30.80	3.22	4	-0.78
10	27.075	30.40	3.18	4	-0.82
11	27.085	30.60	3.20	4	-0.80
12	27.105	30.80	3.22	4	-0.78
13	27.115	30.80	3.22	4	-0.78
14	27.125	30.80	3.22	4	-0.78
15	27.135	30.80	3.22	4	-0.78

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

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

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Table 1 (Cont'd...)

**RadioShack Corporation
RadioShack 21-1705**

Transmission Power

Channel	Frequency (M H z)	M easured Power (W)	N et Power (W)	L im it (W)	M argin (W)
16	27 .155	30 .80	3 .22	4	-0 .78
17	27 .165	30 .80	3 .22	4	-0 .78
18	27 .175	30 .80	3 .22	4	-0 .78
19	27 .185	30 .00	3 .14	4	-0 .86
20	27 .205	29 .50	3 .09	4	-0 .91
21	27 .215	29 .40	3 .08	4	-0 .92
22	27 .225	29 .50	3 .09	4	-0 .91
23	27 .255	29 .50	3 .09	4	-0 .91
24	27 .235	29 .50	3 .09	4	-0 .91
25	27 .245	29 .50	3 .09	4	-0 .91
24	27 .265	29 .50	3 .09	4	-0 .91
27	27 .275	29 .50	3 .09	4	-0 .91
28	27 .285	29 .50	3 .09	4	-0 .91
29	27 .295	29 .51	3 .09	4	-0 .91
30	27 .305	29 .90	3 .13	4	-0 .87

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

Test Engineer: Test Engineer

Date of Test: Date of Test

INTERTEK TESTING SERVICES

Table 1 (Cont'd...)

**RadioShack Corporation
RadioShack 21-1705**

Transmission Power

Channel	Frequency (M H z)	M easured Power (W)	N et Power (W)	L i m i t (W)	M a r g i n (W)
31	27.315	29.40	3.08	4	-0.92
32	27.325	29.60	3.10	4	-0.90
33	27.335	29.60	3.10	4	-0.90
34	27.345	29.60	3.10	4	-0.90
35	27.355	29.60	3.10	4	-0.90
36	27.365	29.60	3.10	4	-0.90
37	27.375	29.60	3.10	4	-0.90
38	27.385	29.60	3.10	4	-0.90
39	27.395	29.40	3.08	4	-0.92
40	27.405	29.50	3.09	4	-0.91

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

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

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 attached in Exhibit 4.1, 4.2 & 4.3.

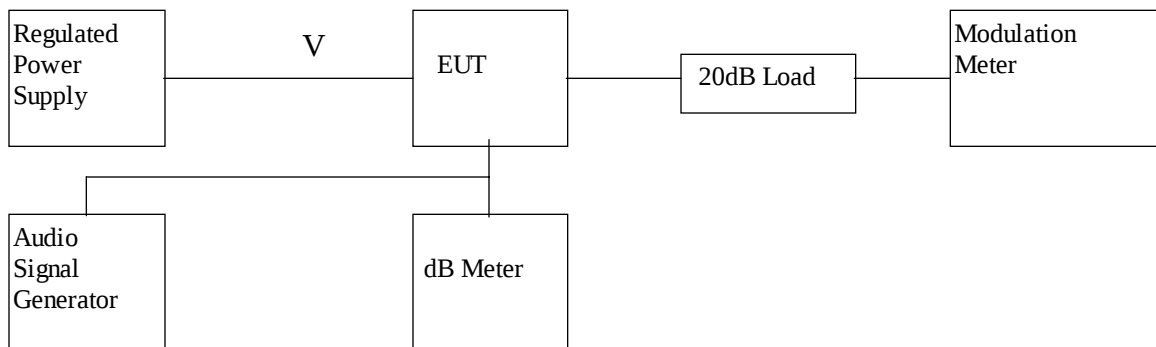
For electronic filing, the plots are saved with filenames: mfr.pdf, mlc.pdf and mtr.pdf respectively.

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 from 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.

INTERTEK TESTING SERVICES

C. Test Result

Table 2

RadioShack Corporation
RadioShack 21-1705

Modulation Frequency Response (Section 2.987(a))

Test Channel : 19
0 dB Level : 60.5dB μ V
Modulation Output : 50%

Modulation Frequency (Hz)	Modulation input relative to max. output. (dB)
100	39.6
200	21.3
300	14.2
400	6.5
500	3.6
600	1.9
700	0.7
800	0.2
900	0.0
1000	0.0
1200	0.0
1500	0.1
2000	1.7
2500	3.7
3000	6.0
4000	10.8
5000	15.1
6000	18.9
7000	22.0
8000	24.9
9000	27.9
10000	30.2

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

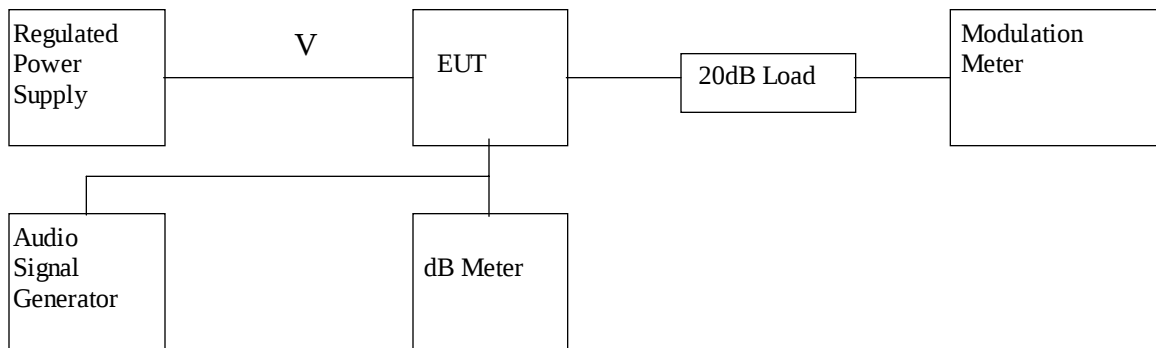
4.2 Modulation Limiting Characteristics (Section 2.987(b))

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 1200Hz, 1500Hz, 2500Hz & 5000Hz.

INTERTEK TESTING SERVICES

C. Test Result

Table 3

**RadioShack Corporation
RadioShack 21-1705**

Modulation Limiting Characteristics

Test Channel : 19

Modulation Input (dBm)	Modulation Index(%) at 400Hz	Modulation Index(%) at 1200Hz	Modulation Index(%) at 1500Hz	Modulation Index(%) at 2500Hz	Modulation Index(%) at 5000Hz
-60	15	33	37	23	8
-50	49	87	86	70	22
-40	86	88	87	83	63
-30	88	89	89	84	85
-20	92	91	92	87	87
-10	95	97	99	91	89
0	90	113	109	95	87
10	97	122	119	99	92

Test Engineer: H. Y. Vu

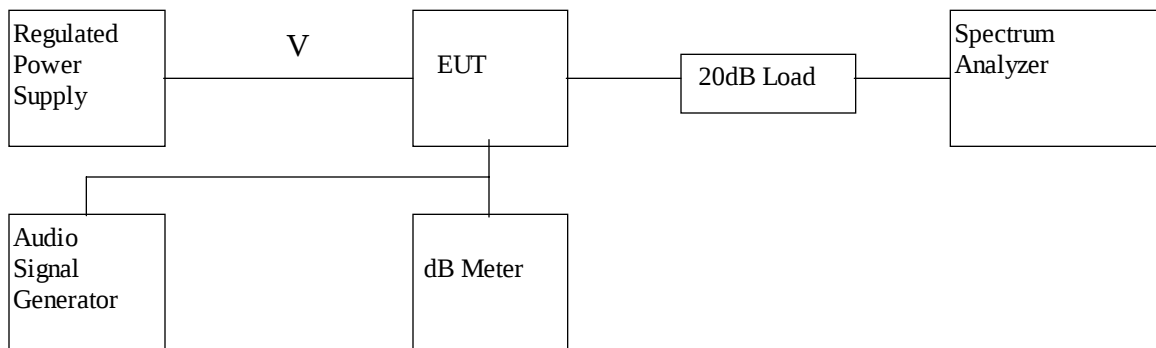
Date of Test: July 12, 2000

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.

INTERTEK TESTING SERVICES

C. Test Result

Table 4

**RadioShack Corporation
RadioShack 21-1705**

Over modulation Transient Response

Channel	Adjacent Frequency (MHz)	Transient Level with respect to TP in (dB)	Transient Duration (ms)
1	26.955	-37.3	15.0
1	26.975	-45.3	35.0
19	27.175	-39.9	30.0
19	27.195	-44.3	17.5
40	27.395	-40.8	22.5
40	27.415	-38.2	30.0

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

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

EXHIBIT 5

OCCUPIED BANDWIDTH

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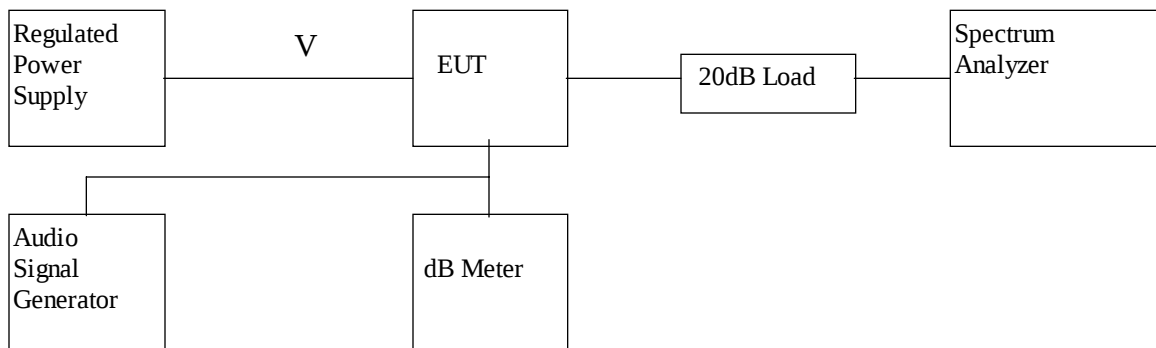
5.0 Occupied Bandwidth (Section 2.989 & Section 95.633)

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 6.00 kHz.

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

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

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

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

INTERTEK TESTING SERVICES

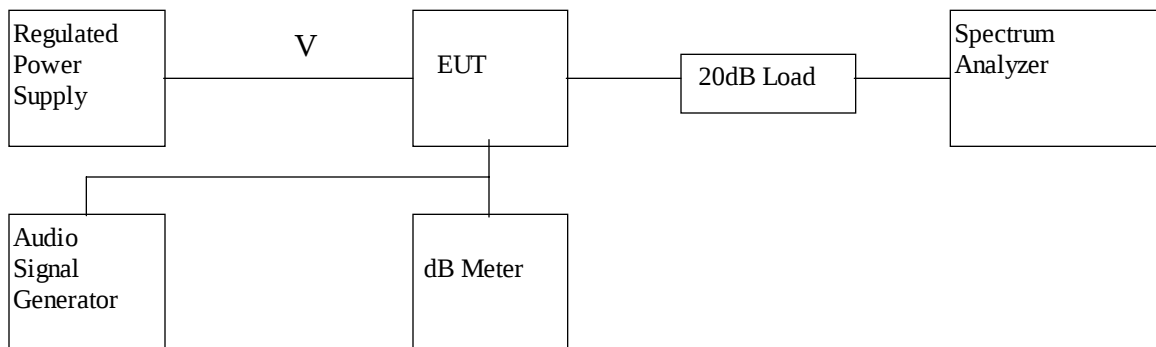
6.1 Spurious emission at the antenna terminal (Section 2.991 & Section 95.631)

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 $\text{CARRIER} \pm 4\text{kHz}$ to $\text{CARRIER} \pm 20\text{kHz}$ from the plot.
- 5) Record the emissions relative to TP from region $\text{CARRIER} \pm 20\text{kHz}$ to 1000MHz.

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C. Test Result

RadioShack Corporation

RadioShack 21-1705

Table 5(a)

- 1) Unwanted emission from CARRIER $\pm$ 4kHz to Carrier $\pm$ 20kHz (Refer to the plots)

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

- 2) Unwanted emission from CARRIER $\pm$ 20kHz to 1000MHz

Table 5(b): Channel 1

Frequency (M H z)	Em ission relative to TP (dB)	L in it (dB)	M argin (dB)
53.930	-61.0	-60	-1.0
80.895	-72.9	-60	-12.9
107.860	-85.8	-60	-25.8
134.825	-81.6	-60	-21.6
161.790	-88.6	-60	-28.6
188.755	-87.5	-60	-27.5
215.720	-86.0	-60	-26.0
242.685	-84.9	-60	-24.9
269.650	-74.7	-60	-14.7
296.615	-72.4	-60	-12.4
323.580	-71.7	-60	-11.7
350.545	-75.7	-60	-15.7

- 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: H. Y. Vu

Date of Test: July 12, 2000

RadioShack Corporation

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RadioShack 21-1705

Table 5(c): Channel 19

F r e q u e n c y (M H z)	E m i s s i o n r e l a t i v e t o T P (d B)	L i m i t (d B)	M a r g i n (d B)
54.370	-61.7	-60	-1.7
81.555	-74.7	-60	-14.7
108.740	-86.9	-60	-26.9
135.925	-81.7	-60	-21.7
163.110	-84.3	-60	-24.3
190.295	-87.7	-60	-27.7
217.480	-90.6	-60	-30.6
244.665	-84.9	-60	-24.9
271.850	-75.2	-60	-15.2
299.035	-73.8	-60	-13.8
326.220	-71.5	-60	-11.5
353.405	-78.9	-60	-18.9

- 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: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

Table 5(d): Channel 40

Frequency (M H z)	Em ission relative to TP (dB)	L in it (dB)	M argin (dB)
54.810	-61.3	-60	-1.3
82.215	-75.1	-60	-15.1
109.620	-84.7	-60	-24.7
137.025	-84.2	-60	-24.2
164.430	-80.4	-60	-20.4
191.835	-87.5	-60	-27.5
219.240	-91.8	-60	-31.8
246.645	-83.6	-60	-23.6
274.050	-75.1	-60	-15.1
301.455	-76.8	-60	-16.8
328.860	-71.7	-60	-11.7
356.265	-77.6	-60	-17.6

- 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: H. Y. Vu

Date of Test: July 12, 2000

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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.

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C. Radiated Emission Configuration Photograph

Worst Case Radiated Emission

Front View

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated 1.jpg

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C. Radiated Emission Configuration Photograph (cont.)

Worst Case Radiated Emission

Back View

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated 2.jpg

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D. Test Result

Table 6

**RadioShack Corporation
RadioShack 21-1705
Radiated Spurious Emissions**

Channel : 1

The output power of transmitter is 35.1 dBm

Antenna Polarity	Frequency (M H z)	Reading (dB μ V)	Antenna Factor (dB)	Net at 3m (dB μ V /m)	ERP (dBm)	ERP to related TOP*
V	53.938	31.8	11.7	43.5	-53.9	-89.0
H	80.895	36.1	6.7	42.8	-54.6	-89.7
H	107.864	45.4	12.2	57.6	-39.8	-74.9
H	134.833	37.6	12.3	49.9	-47.5	-82.6
H	161.802	32.7	13.1	45.8	-51.6	-86.7
H	188.771	34.6	16.7	51.3	-46.1	-81.2
H	215.720	43.3	11.8	55.1	-42.3	-77.4
H	242.685	41.6	11.4	53.0	-44.4	-79.5
H	269.663	49.2	12.4	61.6	-35.8	-70.9
H	296.628	52.1	13.3	65.4	-32.0	-67.1
H	323.593	49.1	14.3	63.4	-34.0	-69.1
H	350.558	50.5	14.9	65.4	-32.0	-67.1

* “TOP” is Transmitter Output Power

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

Table 6 (Cont'd...)

**RadioShack Corporation
RadioShack 21-1705
Radiated Spurious Emissions**

Channel : 1

The output power of transmitter is 35.1 dBm

Antenna Polarity	Frequency (M H z)	Reading (dBμV)	Antenna Factor (dB)	Net at 3m (dBμV /m)	ERP (dBm)	ERP to related TOP*
H	377.523	50.3	15.9	66.2	-31.2	-66.3
H	404.488	43.7	15.9	59.6	-37.8	-72.9
H	431.453	38.5	16.3	54.8	-42.6	-77.7
H	458.418	38.9	16.8	55.7	-41.7	-76.8
H	485.383	36.3	17.3	53.6	-43.8	-78.9
H	512.348	35.7	18.0	53.7	-43.7	-78.8
H	539.307	34.0	18.2	52.2	-45.2	-80.3
H	566.295	35.5	18.3	53.8	-43.6	-78.7
H	593.240	38.6	18.6	57.2	-40.2	-75.3
H	620.245	39.2	18.9	58.1	-39.3	-74.4
H	647.184	32.3	19.2	51.5	-45.9	-81.0
H	674.149	19.8	19.6	39.4	-58.0	-93.1

* “TOP” is Transmitter Output Power

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

D. Test Result

Table 7

RadioShack Corporation
RadioShack 21-1705
Radiated Spurious Emissions

Channel : 19

The output power of transmitter is 35.1 dBm

Antenna Polarity	Frequency (M H z)	Reading (dB μ V)	Antenna Factor (dB)	Net at 3m (dB μ V /m)	ERP (dBm)	ERP to related TOP*
V	54.376	30.3	11.7	42.0	-55.4	-90.5
H	81.553	35.4	6.7	42.1	-55.3	-90.4
H	108.743	44.6	12.2	56.8	-40.6	-75.7
H	135.927	38.8	11.9	50.7	-46.7	-81.8
H	163.118	37.2	13.1	50.3	-47.1	-82.2
H	190.508	35.4	17.1	52.5	-44.9	-80.0
H	217.696	43.1	11.8	54.9	-42.5	-77.6
H	244.884	42.2	11.4	53.6	-43.8	-78.9
H	272.072	48.4	12.4	60.8	-36.6	-71.7
H	299.260	51.5	13.3	64.8	-32.6	-67.7
H	326.448	48.8	14.3	63.1	-34.3	-69.4
H	353.636	50.3	14.9	65.2	-32.2	-67.3

* "TOP" is Transmitter Output Power

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

Table 7 (Cont'd...)

**RadioShack Corporation
RadioShack 21-1705
Radiated Spurious Emissions**

Channel : 19

The output power of transmitter is 35.1 dBm

Antenna Polarity	Frequency (M H z)	Reading (dBμV)	Antenna Factor (dB)	Net at 3m (dBμV /m)	ERP (dBm)	ERP to related TOP*
H	380.824	50.7	15.4	66.1	-31.3	-66.4
H	408.012	43.1	15.9	59.0	-38.4	-73.5
H	435.200	39.3	16.3	55.6	-41.8	-76.9
H	462.388	38.9	16.8	55.7	-41.7	-76.8
H	489.576	36.2	17.3	53.5	-43.9	-70.9
H	516.764	37.1	18.0	55.1	-42.3	-77.4
H	543.952	35.9	18.2	54.1	-43.3	-78.4
H	571.140	37.5	18.3	55.8	-41.6	-76.7
H	598.328	36.0	18.6	54.6	-42.8	-77.9
H	625.516	31.7	19.2	50.9	-46.5	-81.6
H	652.704	28.0	19.6	47.6	-49.8	-84.9
H	679.892	18.8	20.7	39.5	57.9	-93.1

* “TOP” is Transmitter Output Power

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

D. Test Result

Table 8

**RadioShack Corporation
RadioShack 21-1705
Radiated Spurious Emissions**

Channel : 40

The output power of transmitter is 35.1 dBm

Antenna Polarity	Frequency (M H z)	Reading (dB μ V)	Antenna Factor (dB)	Net at 3m (dB μ V /m)	ERP (dBm)	ERP to related TOP*
V	54.814	30.3	11.7	42.0	-55.4	-90.5
H	53.215	31.1	11.7	42.8	-54.6	-89.7
H	109.620	43.7	12.2	55.9	-41.5	-76.6
H	137.029	40.6	11.9	52.5	-44.9	-80.0
H	164.435	40.8	13.1	53.9	-43.5	-78.6
H	191.839	33.5	17.1	50.6	-46.8	-81.9
H	219.244	44.4	11.8	56.2	-41.2	-76.3
H	246.649	42.5	11.4	53.9	-43.5	-78.6
H	274.054	49.0	12.4	61.4	-36.0	-71.1
H	301.459	53.5	14.3	67.8	-29.6	-64.7
H	328.871	50.2	14.6	64.8	-32.6	-67.7
H	356.276	43.7	14.9	58.6	-38.8	-67.3

* "TOP" is Transmitter Output Power

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

Table 8 (Cont'd...)

**RadioShack Corporation
RadioShack 21-1705
Radiated Spurious Emissions**

Channel : 40

The output power of transmitter is 35.1 dBm

Antenna Polarity	Frequency (M H z)	Reading (dBμV)	Antenna Factor (dB)	Net at 3m (dBμV /m)	ERP (dBm)	ERP to related TOP*
H	383.686	50.9	15.4	66.3	-31.1	-66.2
H	411.093	42.7	15.9	58.6	-38.8	-73.9
H	438.496	38.4	16.3	54.7	-42.7	-77.8
H	465.901	38.2	16.8	55.0	-42.4	-77.5
H	493.306	40.8	17.3	58.1	-39.3	-74.4
H	520.711	36.4	18.0	54.4	-43.0	-78.1
H	548.116	35.4	18.2	53.6	-43.8	-78.9
H	575.521	38.0	18.6	56.6	-40.8	-75.9
H	602.926	36.5	18.9	55.4	-42.0	-77.1
H	630.331	32.6	19.2	51.8	-45.6	-80.7
H	657.736	28.9	19.6	48.5	-48.9	-84.0
H	685.143	17.4	20.7	38.1	-59.3	-94.4

* “TOP” is Transmitter Output Power

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

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.

INTERTEK TESTING SERVICES

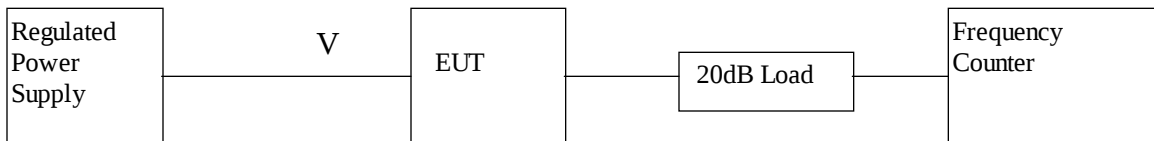
7.1 Frequency Tolerance (Section 95.625)

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.

INTERTEK TESTING SERVICES

C. Test Result

Table 9

**RadioShack Corporation
RadioShack 21-1705
Frequency Tolerance**

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (%)
1	26.96500	26.96488	-0.00045
2	26.97500	26.97485	-0.00056
3	26.98500	26.98489	-0.00042
4	27.00500	27.00483	-0.00065
5	27.01500	27.01481	-0.00069
6	27.02500	27.02486	-0.00051
7	27.03500	27.03484	-0.00060
8	27.05500	27.05481	-0.00069
9	27.06500	27.06485	-0.00055
10	27.07500	27.07484	-0.00060
11	27.08500	27.08485	-0.00055
12	27.10500	27.10483	-0.00065
13	27.11500	27.11481	-0.00069
14	27.12500	27.12483	-0.00065
15	27.13500	27.13486	-0.00050
16	27.15500	27.15480	-0.00074
17	27.16500	27.16484	-0.00060
18	27.17500	27.17483	-0.00064
19	27.18500	27.18480	-0.00074
20	27.20500	27.20484	-0.00060
21	27.21500	27.21479	-0.00078
22	27.22500	27.22484	-0.00060
23	27.25500	27.25483	-0.00064
24	27.23500	27.23484	-0.00059
25	27.24500	27.24484	-0.00059
26	27.26500	27.26483	-0.00064

INTERTEK TESTING SERVICES

C. Test Result

Table 9 (Cont'd...)

**RadioShack Corporation
RadioShack 21-1705
Frequency Tolerance**

Channel	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (%)
27	27.27500	27.27483	-0.00064
28	27.28500	27.28483	-0.00064
29	27.29500	27.29480	-0.00073
30	27.30500	27.30484	-0.00059
31	27.31500	27.31483	-0.00064
32	27.32500	27.32480	-0.00073
33	27.33500	27.33483	-0.00064
34	27.34500	27.34484	-0.00059
35	27.35500	27.35484	-0.00059
36	27.36500	27.36481	-0.00068
37	27.37500	27.37481	-0.00068
38	27.38500	27.38476	-0.00089
39	27.39500	27.39484	-0.00059
40	27.40500	27.40480	-0.00073

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

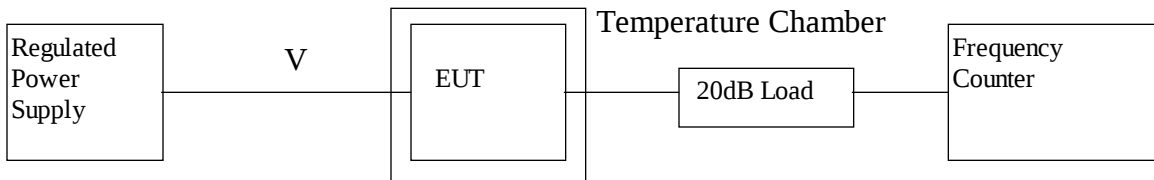
7.2 Frequency Stability - Temperature (Section 2.995)

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

INTERTEK TESTING SERVICES

C. Test Result

Table 10

**RadioShack Corporation
RadioShack 21-1705**

Frequency Deviation with Temperature Variation

Channel : 1

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
-30	26.96500	26.96469	-0.00116
-20	26.96500	26.96479	-0.00079
-10	26.96500	26.96481	-0.00069
0	26.96500	26.96488	-0.00046
10	26.96500	26.96488	-0.00046
20	26.96500	26.96488	-0.00045
30	26.96500	29.96481	-0.00069
40	26.96500	29.96478	-0.00083
50	26.96500	29.96471	-0.00106

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

C. Test Result

Table 11

**RadioShack Corporation
RadioShack 21-1705**

Frequency Deviation with Temperature Variation

Channel : 19

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
-30	27.18500	27.18471	-0.00106
-20	27.18500	27.18478	-0.00083
-10	27.18500	27.18483	-0.00064
0	27.18500	27.18485	-0.00055
10	27.18500	27.18485	-0.00055
20	27.18500	27.18480	-0.00074
30	27.18500	27.18479	-0.00078
40	27.18500	27.18478	-0.00083
50	27.18500	27.18470	-0.00110

Test Engineer: H. Y. Vu

Date of Test: July 12, 2000

INTERTEK TESTING SERVICES

C. Test Result

Table 12

**RadioShack Corporation
RadioShack 21-1705**

Frequency Deviation with Temperature Variation

Channel : 40

Temperature (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
-30	27.40500	27.40474	-0.00096
-20	27.40500	27.40478	-0.00082
-10	27.40500	27.40484	-0.00059
0	27.40500	27.40486	-0.00050
10	27.40500	27.40486	-0.00050
20	27.40500	27.40480	-0.00073
30	27.40500	27.40480	-0.00073
40	27.40500	27.40479	-0.00077
50	27.40500	27.40474	-0.00096

Test Engineer: H. Y. Vu

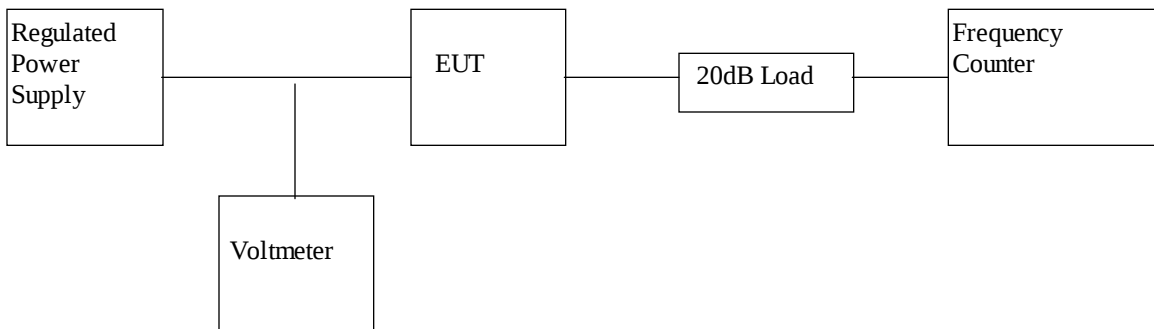
Date of Test: July 12, 2000

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 of the EUT.
- 3) Measure the channel frequency of channel 1, 19, 40 in MHz at each input power level.

INTERTEK TESTING SERVICES

C. Test Result

Table 13

**RadioShack Corporation
RadioShack 21-1705**

Frequency Deviation with Voltage Variation

Channel : 1

Voltage (V)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
11.7	26.96500	26.96485	-0.00056
13.8	26.96500	26.96488	-0.00045
15.9	26.96500	26.96484	-0.00059

Channel : 19

Voltage (V)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
11.7	27.18500	27.18483	-0.00064
13.8	27.18500	27.18480	-0.00074
15.9	27.18500	27.18480	-0.00074

Channel : 40

Voltage (V)	Assigned Frequency (MHz)	Measured Frequency (MHz)	% Deviation
11.7	27.40500	27.40479	-0.00077
13.8	27.40500	27.40480	-0.00073
15.9	27.40500	27.40480	-0.00073

EXHIBIT 8

TECHNICAL SPECIFICATIONS

8.0 **Technical Specifications**

The circuit diagram and block diagram of the CB radio are attached.

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

EXHIBIT 9

PRODUCT LABELLING

9.0 **Product Labelling**

The label and label location are saved with filename: label.pdf

EXHIBIT 10

PHOTOGRAPHS

10.0 Equipment Photographs

Photographs of the tested EUT are saved with filename: ophoto1.jpg to ophoto2.jpg and iphoto1.jpg to iphoto4.jpg

**EXHIBIT 11
INSTRUCTION MANUAL**

11.0 **Instruction Manual**

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

Please note that the required FCC Information to the User 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 of the semiconductors or electron tubes is saved with filename: power.pdf