

In-Tech Electronics Ltd.

Application
For
Certification
(FCC ID: NV6PR900DX)

WO# 0111744
WL/Agnes
October 31, 2001

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MEASUREMENT/TECHNICAL REPORT

Application : In-Tech Electronics Ltd.
Trade Name/Model No : Cobra PR900DX
Date : October 31, 2001

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

Equipment Type: General Mobile Radio Service, GMRS

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:

Wilson Loke
Intertek Testing Services
2/F., Garment Centre,
576 Castle Peak Road,
Kowloon, Hong Kong.
Phone: 852-2173-8575
Fax: 852-2745-8306

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List of attached file

| Exhibit type | File Description | Filename |
|------------------------|---------------------------------|---------------------|
| Operation Description | Technical Description | descri.pdf |
| Test Report | Bandwidth Plot | bw.pdf |
| Test Report | Modulation Frequency Response | mfr.pdf |
| Test Report | Modulation Limit Characteristic | mlc.pdf |
| Test Report | Spurious Emission | spurious.pdf |
| Block Diagram | Block Diagram | block.pdf |
| Schematics | Circuit Diagram | circuit.pdf |
| ID Label/Location Info | Label Artwork and Location | label.pdf |
| User's Manual | User Manual | manual.pdf |
| Test Report | Test Report | report.doc |
| Test Setup Photo | Radiated Emission | Rconfig photos.doc |
| Internal Photo | Internal Photo | internal photos.doc |
| External Photo | External Photo | external photos.doc |
| Part List/Tune-up Info | Tune Up Procedure | tuneup.pdf |
| Part List/Tune-up Info | Part List | partlist.pdf |
| Test Report | Audio Low Pass Filter Response | lpf.pdf |
| RF Exposure Info | SAR Report | sar.pdf |

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EXHIBIT 1

GENERAL DESCRIPTION

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1.0 **General Description**

1.1 Product Description

The Equipment Under Test (EUT) is a 15-channel General Mobile Radio Service (GMRS) Transceiver operating between 462.5500 and 462.7250MHz. The EUT is powered by 6V d.c. (4 x 1.5V “AAA” battery). The input current to the final r.f. stage at 6V d.c. input is 0.72A.

Transmitter Portion:

- (i) Type of Emission: 10K3F3E
- (ii) Frequency Range: 462.5500 to 462.7250.
- (iii) Maximum Power Rating: 1.5W ERP or 2.1W conducted
- (iv) Channel Separation: 12.5kHz
- (v) Antenna type: Integral

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

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1.2 Related Submittal(s) Grants

This is an Application for Certification of the transmitter portion of a GMRS Transceiver. The receiver portion of the GMRS Transceiver is subject to verification process.

1.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992) and ANSI/TIA/EIA-603-1992. 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 4 x fully charged 1.5V "AAA" battery.

The frequency range from 9 kHz to 4.63 GHz was searched for radiated emissions from the device. Only those emissions reported were detected. All other emissions were at least 20 dB below the applicable limits.

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2.2 EUT Exercising Software

There was no special software to exercise the device. Once the unit is powered on, a signal is transmitted.

2.3 Special Accessories

A special headset is provided by client for compliance of this device.

2.4 Equipment Modification

Any modification installed previous to testing by In-Tech Electronics Ltd. 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 In-Tech Electronics Ltd.*

Signature

October 31, 2001 Date

EXHIBIT 3

RF POWER OUTPUT

3.0 **RF Power Output (Section 95.135)**

The RF power output from the antenna terminal and from the EUT are measured and shown in the Exhibit 3.1 & 3.2

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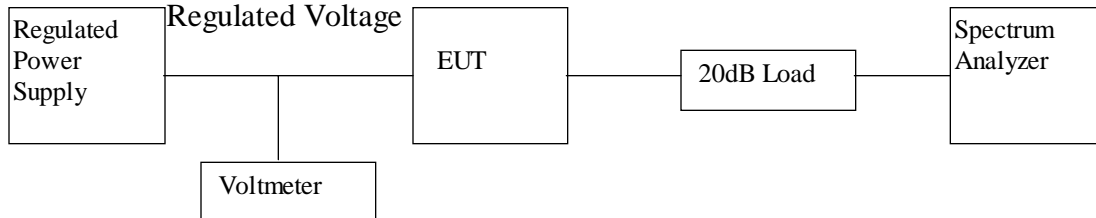
3.1 RF Output Power at the antenna terminal

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 (2 channels) by Spectrum Analyzer in Watt.
- 3) Calculate the actual power by times the measured power with a correction factor, 104.7*
i.e. Actual Power = measured Power \times 104.7

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

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Table 3.1

**In-Tech Electronics Ltd.
Cobra PR900DX**

Conducted Power

| Channel | Frequency (M H z) | Conducted Power | | L i m i t (W) | M a r g i n (W) |
|---------|----------------------|-----------------|------|-------------------|---------------------|
| | | (dBm) | (W) | | |
| 1 | 462.5625 | 33.3 | 2.1 | 50 | -47.9 |
| 2 | 462.5875 | 33.3 | 2.1 | 50 | -47.9 |
| 3 | 462.6125 | 33.3 | 2.1 | 50 | -47.9 |
| 4 | 462.6375 | 33.3 | 2.1 | 50 | -47.9 |
| 5 | 462.6625 | 33.3 | 2.1 | 50 | -47.9 |
| 6 | 462.6875 | 33.3 | 2.1 | 50 | -47.9 |
| 7 | 462.7125 | 33.3 | 2.1 | 50 | -47.9 |
| 8 | 462.5750 | 33.3 | 2.1 | 50 | -47.9 |
| 9 | 462.6250 | 33.3 | 2.1 | 50 | -47.9 |
| 10 | 462.6750 | 33.3 | 2.1 | 50 | -47.9 |
| 11 | 462.5500 | 33.3 | 2.1 | 50 | -47.9 |
| 12 | 462.6000 | 33.3 | 2.1 | 50 | -47.9 |
| 13 | 462.6500 | 33.3 | 2.1 | 50 | -47.9 |
| 14 | 462.7000 | 33.3 | 2.1 | 50 | -47.9 |
| 15 | 462.7250 | 33.3 | 2.1 | 50 | -47.9 |

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

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

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3.2 RF Output Power by Substitution Method

A. Equipment Used

| Equipment | Brand Name | Model No. |
|----------------------|-----------------|------------------|
| Biconical Antenna | CDI | B300 |
| Test receiver | Rohde & Schwarz | ESVS30 |
| RF Filter | Tailithic | 3VF |
| Tuned Dipole Antenna | CDI | Robert Antenna 4 |
| Signal Generator | Maconi | 2024 |

B. Testing Procedure

1. On a test site, the EUT shall be placed at 1.5m height on a turn table, and in the position closest to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarisation located 3m from EUT to correspond to the frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the quasi-peak detector is used for the measurement.
4. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the transmitter under test.
5. The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.

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6. The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
8. The maximum signal level detected by the measuring receiver shall be noted.
9. The transmitter shall be replaced by a tuned dipole (substitution antenna).
10. The substitution antenna shall be orientated for vertical polarisation and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
11. The substitution antenna shall be connected to a calibrated signal generator.
12. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
14. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
15. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarisation.
17. The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.

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Table 3.2

**In-Tech Electronics Ltd.
Cobra PR900DX**

Transmission Power

| Channel | Frequency (M H z) | E ffective Radiated Power | | L i n i t (W) | M a r g i n (W) |
|---------|----------------------|---------------------------|------|-------------------|---------------------|
| | | (dBm) | (W) | | |
| 1 | 462.5625 | 31.8 | 1.5 | 5 | -3.5 |
| 2 | 462.5875 | 31.8 | 1.5 | 5 | -3.5 |
| 3 | 462.6125 | 31.8 | 1.5 | 5 | -3.5 |
| 4 | 462.6375 | 31.8 | 1.5 | 5 | -3.5 |
| 5 | 462.6625 | 31.8 | 1.5 | 5 | -3.5 |
| 6 | 462.6875 | 31.8 | 1.5 | 5 | -3.5 |
| 7 | 462.7125 | 31.8 | 1.5 | 5 | -3.5 |
| 8 | 462.5750 | 31.8 | 1.5 | 5 | -3.5 |
| 9 | 462.6250 | 31.8 | 1.5 | 5 | -3.5 |
| 10 | 462.6750 | 31.8 | 1.5 | 5 | -3.5 |
| 11 | 462.5500 | 31.8 | 1.5 | 5 | -3.5 |
| 12 | 462.6000 | 31.8 | 1.5 | 5 | -3.5 |
| 13 | 462.6500 | 31.8 | 1.5 | 5 | -3.5 |
| 14 | 462.7000 | 31.8 | 1.5 | 5 | -3.5 |
| 15 | 462.7250 | 31.8 | 1.5 | 5 | -3.5 |

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

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

EXHIBIT 4

MODULATION CHARACTERISTICS

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4.0 **Modulation Characteristics**

In order to satisfy the 95.637(a) requirement, Modulation Frequency Response and Modulation Limit Characteristics are attached in Exhibit 4.1 & 4.2.

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

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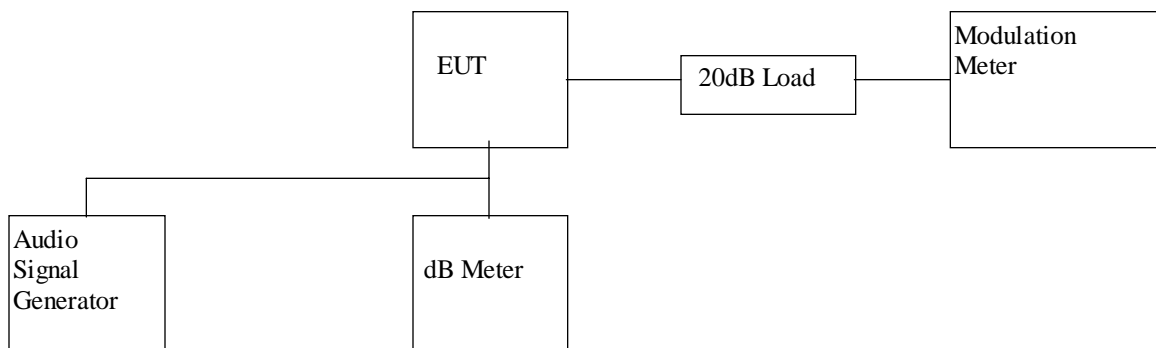
4.1 Modulation Frequency Response

A. Test Equipment

| Equipment | Brand Name | Model No. |
|------------------------|--------------------|------------|
| 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 the sound pressure level 97.0dB SPL at the microphone of the EUT.
- 3) The frequency of the audio signal generator is changed from 200Hz to 5kHz.
- 4) Record the frequency deviation.

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C. Test Result

Table 4.1

**In-Tech Electronics Ltd.
Cobra PR900DX**

Modulation Frequency Response

Test Channel : 4

Input level = 97.0dB SPL

| Modulation Frequency (Hz) | Modulation index (%) |
|---------------------------|----------------------|
| 200 | 0.75 |
| 300 | 1.30 |
| 400 | 1.90 |
| 500 | 2.20 |
| 600 | 2.40 |
| 700 | 2.14 |
| 800 | 1.63 |
| 900 | 1.20 |
| 1000 | 0.91 |
| 1250 | 0.71 |
| 1500 | 0.61 |
| 1750 | 0.34 |
| 2000 | 0.13 |
| 2250 | 0.14 |
| 2500 | 0.12 |
| 2750 | 0.12 |
| 3000 | 0.10 |
| 3125 | 0.09 |
| 3250 | 0.07 |
| 3500 | 0.06 |
| 4000 | 0.05 |
| 5000 | 0.04 |

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

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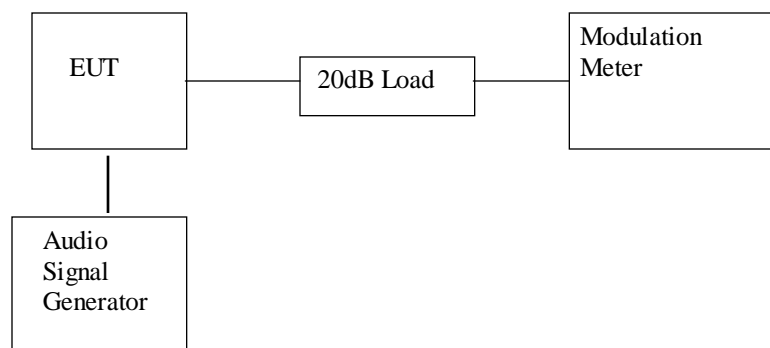
4.2 Modulation Limiting Characteristics (Section 2.1047(b))

A. Test Equipment

| Equipment | Brand Name | Model No. |
|------------------------|------------|------------|
| Audio Signal Generator | Leader | LFG-1300S |
| 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 500Hz and adjust the level from 47dBSPL to 127dBSPL.
- 3) Record the maximum value of plus or minus peak frequency deviation.
- 4) Repeat the above procedure with frequency 1000Hz, 2500Hz & 3125Hz.

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C. Test Result

Table 4.2

**In-Tech Electronics Ltd.
Cobra PR900DX**

Modulation Limiting Characteristics

Test Channel : 4

| M odulation Input (dB SPL) | Peak Frequency Deviation (kHz) at 500H z | Peak Frequency Deviation (kHz) at 1000H z | Peak Frequency Deviation (kHz) at 2500H z | Peak Frequency Deviation (kHz) at 3125H z |
|--------------------------------------------|---------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| 47 | 0.17 | 0.15 | 0.15 | 0.15 |
| 57 | 0.17 | 0.15 | 0.15 | 0.15 |
| 67 | 0.17 | 0.17 | 0.15 | 0.15 |
| 77 | 0.22 | 0.22 | 0.15 | 0.15 |
| 87 | 0.43 | 0.35 | 0.22 | 0.15 |
| 97 | 1.04 | 0.81 | 0.33 | 0.26 |
| 107 | 2.62 | 2.30 | 0.75 | 0.45 |
| 117 | 3.41 | 2.82 | 1.35 | 0.84 |
| 127 | 4.49 | 4.47 | 2.20 | 0.93 |
| 137 | 4.41 | 4.46 | 2.15 | 0.99 |

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

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4.3 Audio Low Pass Filter Response (Section 95.637(b))

A. Test Equipment

| Equipment | Brand Name | Model No. |
|------------------------|------------|-----------|
| Audio Signal Generator | Leader | LFG-1300S |
| dB meter | Leader | LMV-182A |

B. Testing Procedure

- 1) Connect 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) Apply a 1000 Hz tone from the audio signal generator and adjust the level per manufacturer's specifications. Record 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. Record the dB level at the test frequency as LEV_{FREQ} .
- 4) Calculate the audio frequency response at the test frequency as:

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

- 5) Repeat 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.

EXHIBIT 5

OCCUPIED BANDWIDTH

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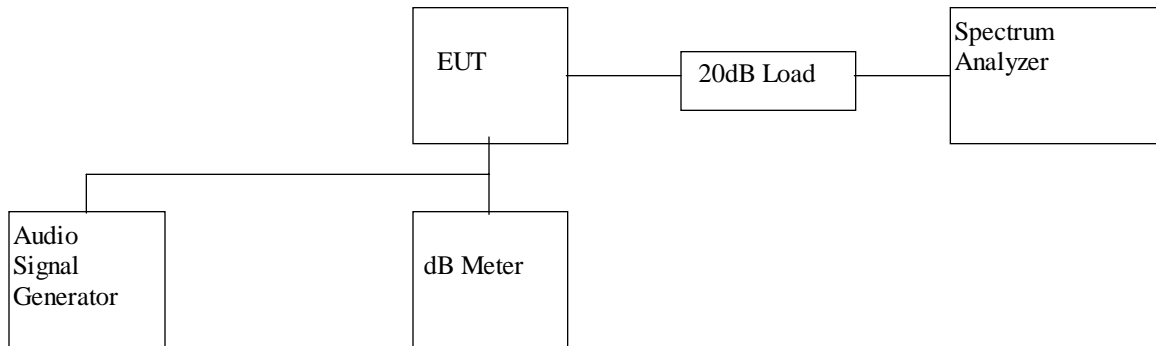
5.0 Occupied Bandwidth (Section 95.633(a))

A. Test Equipment

| Equipment | Brand Name | Model No. |
|------------------------|-----------------|------------|
| 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 10.3 kHz.

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

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

EXHIBIT 6

SPURIOUS EMISSION

6.0 **Spurious Emission (Section 95.635)**

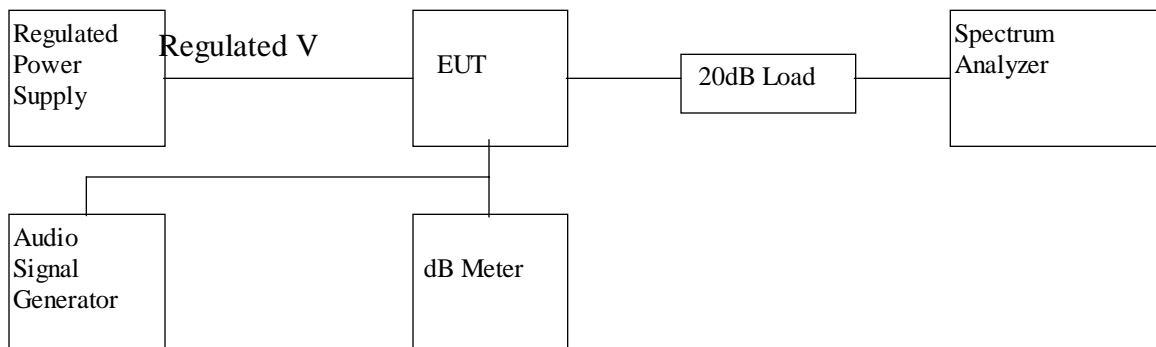
In order to satisfy the 95.635 requirement, the spurious emission from the antenna terminal and from the EUT are measured and shown in the Exhibit 6.1 and 6.2

6.1 Spurious emission at the antenna terminal**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 100kHz span.
- 4) Measure the emissions relative to TP in region $\text{CARRIER} \pm 10\text{kHz}$ to $\text{CARRIER} \pm 20\text{kHz}$ from the plot.
- 5) Measure the emissions relative to TP from region $\text{CARRIER} \pm 20\text{kHz}$ to 50kHz.
- 6) Measure the emissions relative to TP from region $\text{CARRIER} \pm 50\text{kHz}$ to 1000MHz.

C. Test Result**In-Tech Electronics Ltd.
Musical GMRS1000H****Table 6.1(a)**

- 1) Unwanted emission from CARRIER $\pm 20\text{kHz}$ to Carrier $\pm 50\text{kHz}$ (Refer to the plots which is saved with filename: spurious.pdf)

| Region | Unwanted emission |
|--------------------------------------------------|--------------------------|
| | Channel 4 |
| CARRIER $\pm 10\text{kHz}$ to $\pm 20\text{kHz}$ | < 25dB |
| CARRIER $\pm 20\text{kHz}$ to $\pm 50\text{kHz}$ | < 35dB |

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2) Unwanted emission from CARRIER $\pm 50\text{kHz}$ to 1000MHz

Table 6.1(b): Channel 4

| Frequency | Conducted Power | Transmission Power | Attenuation | Limit | Margin |
|-----------|-----------------|--------------------|-------------|-------|--------|
| (MHz) | (dBm) | (dBm) | (dB) | (dB) | (dB) |
| 925.275 | -21.2 | 33.3 | 54.5 | 46.3 | 8.2 |
| 1387.913 | -39.0 | 33.3 | 72.3 | 46.3 | 26.0 |
| 1850.550 | -35.2 | 33.3 | 68.5 | 46.3 | 22.2 |
| 2313.188 | -46.1 | 33.3 | 79.4 | 46.3 | 33.1 |
| 2775.825 | -50.5 | 33.3 | 83.8 | 46.3 | 37.5 |
| 3238.463 | -43.8 | 33.3 | 77.1 | 46.3 | 30.8 |
| 3701.100 | -44.2 | 33.3 | 77.5 | 46.3 | 31.2 |

Remark: 1. Transmission power is 33.3 dBm or 3.3 dB(W).
2. According to Section 95.635(b7), the unwanted emission should be attenuated below TP by at least $43 + 10 \log_{10}(\text{TP})$ dB or 46.3 dB.

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

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6.2 Field Strength of Spurious Radiation

A. Test Equipment

| Equipment | Brand Name | Model No. |
|---------------|-----------------|----------------------|
| Antenna | CDI | B100,B200,B300, Horn |
| 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

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

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D. Test Result

In-Tech Electronics Ltd. Cobra PR900DX

Table 6.2(a): Channel 4

| Frequency (M H z) | Effective Radiated Power (dBm) | Transm ission Power (dBm) | A ttenuation (dB) | L in it (dB) | M argin (dB) |
|--------------------------|----------------------------------------------|--------------------------------------|---------------------------|----------------------|----------------------|
| 925.276 | -20.7 | 31.8 | 52.5 | 44.8 | 7.7 |
| 1387.914 | -17.3 | 31.8 | 49.1 | 44.8 | 4.3 |
| 1850.552 | -24.4 | 31.8 | 56.2 | 44.8 | 11.4 |
| 2313.190 | -30.7 | 31.8 | 62.5 | 44.8 | 17.7 |
| 2775.828 | -32.0 | 31.8 | 63.8 | 44.8 | 19.0 |
| 3238.466 | -34.4 | 31.8 | 66.2 | 44.8 | 21.4 |
| 3701.104 | -26.3 | 31.8 | 58.1 | 44.8 | 13.3 |
| 4163.742 | -30.7 | 31.8 | 62.5 | 44.8 | 17.7 |
| 4626.380 | -31.7 | 31.8 | 63.5 | 44.8 | 18.7 |
| 5089.018 | -35.0 | 31.8 | 66.8 | 44.8 | 22.0 |

- Remark:
1. Transmission power is 31.8 dBm or 1.8 dB(W).
 2. According to Section 95.635(b7), the unwanted emission should be attenuated below TP by at least $43 + 10 \log_{10} (TP)$ dB or 44.8 dB.
 3. The test is performed according to ANSI/TIA/EIA-603-1992.

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

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

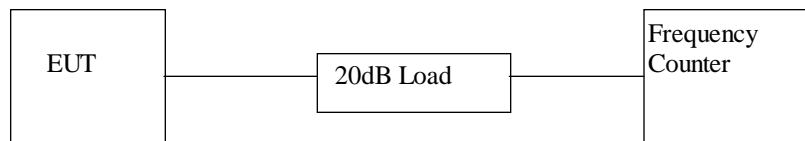
7.1 Frequency Tolerance (Section 95.625)

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 7.1

**In-Tech Electronics Ltd.
Cobra PR900DX**

Frequency Tolerance

| Channel | Frequency (M H z) | M easured Frequency (M H z) | Tolerance (%) |
|---------|----------------------|--------------------------------|-------------------|
| 1 | 462.56250 | 462.56238 | 0.000026 |
| 2 | 462.58750 | 462.58713 | 0.000080 |
| 3 | 462.61250 | 462.61213 | 0.000080 |
| 4 | 462.63750 | 462.63713 | 0.000080 |
| 5 | 462.66250 | 462.66213 | 0.000080 |
| 6 | 462.68750 | 462.68713 | 0.000080 |
| 7 | 462.71250 | 462.71213 | 0.000080 |
| 8 | 462.57500 | 462.57450 | 0.000108 |
| 9 | 462.62500 | 462.62450 | 0.000108 |
| 10 | 462.67500 | 462.67450 | 0.000108 |
| 11 | 462.55000 | 462.54950 | 0.000108 |
| 12 | 462.60000 | 462.59950 | 0.000108 |
| 13 | 462.65000 | 462.64950 | 0.000108 |
| 14 | 462.70000 | 462.69950 | 0.000108 |
| 15 | 462.72500 | 462.72450 | 0.000108 |

INTERTEK TESTING SERVICES

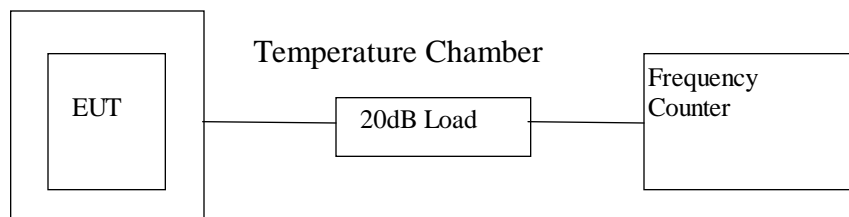
7.2 Frequency Stability - Temperature (Section 2.1055)

A. Test Equipment

| Equipment | Brand Name | Model No. |
|-------------------|------------|------------|
| 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 -20°C and stabilize the EUT temperature for one hour. Set transmitter ON for two minutes.
- 3) Measure the channel frequency of channel 4, 11 in MHz.
- 4) Turn the EUT OFF
- 5) Repeat the above procedure from -20°C to 50°C with 10°C increment.

C. Test Result**Table 7.2(a)**

**In-Tech Electronics Ltd.
Cobra PR900DX**

Frequency Deviation with Temperature Variation

Channel : 4

| Temperature (°C) | A ssigned Frequency (M H z) | M easured Frequency (M H z) | % D eviation |
|-------------------|--------------------------------|--------------------------------|--------------|
| -20 | 462.63750 | 462.63795 | -0.000097 |
| -10 | 462.63750 | 462.63860 | -0.000238 |
| 0 | 462.63750 | 462.63865 | -0.000249 |
| 10 | 462.63750 | 462.63838 | -0.000190 |
| 20 | 462.63750 | 462.63713 | 0.000080 |
| 30 | 462.63750 | 462.63763 | -0.000028 |
| 40 | 462.63750 | 462.63688 | 0.000134 |
| 50 | 462.63750 | 462.63700 | 0.000108 |

Test Engineer: Ben W. K. Ho

Date of Test: October 22, 2001

INTERTEK TESTING SERVICES

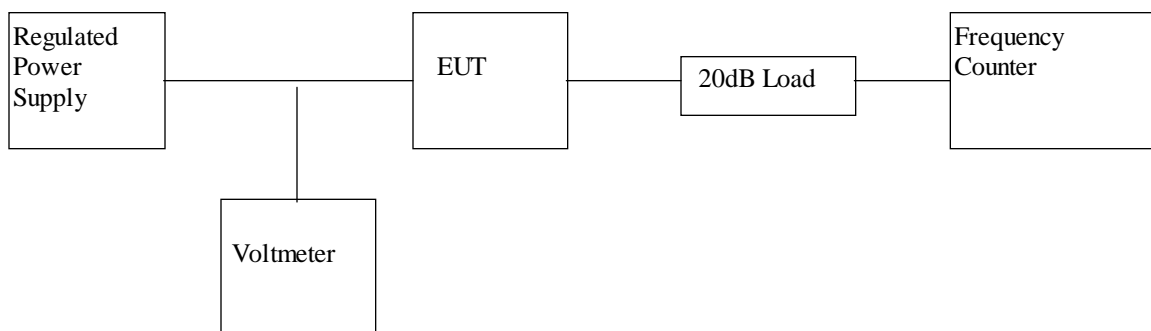
7.3 Frequency Stability - Voltage (Section 2.995)

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 to the manufacturer specified battery end point of the EUT.
- 3) Measure the channel frequency from channel 1 to 14 in MHz.

C. Test Result**Table 7.3**

**In-Tech Electronics Ltd.
Cobra PR900DX**

Frequency Deviation with Voltage Variation

The manufacturer specified battery end point 4.5V

| Channel | Frequency (M H z) | M easured Frequency (M H z) | Tolerance (%) |
|---------|----------------------|--------------------------------|-------------------|
| 4 | 462.63750 | 462.63763 | 0.000028 |

EXHIBIT 8
TECHNICAL SPECIFICATIONS

8.0 Technical Specifications

8.1 Block Diagram

For electronic filing, the block diagram of the GMRS is saved with filename: block.pdf.

Figure 8.1 Block Diagram

8.2 Schematic Diagram

For electronic filing, the schematic diagram of the GMRS is saved with filename: circuit.pdf

Figure 8.2 Schematic Diagram

EXHIBIT 9

PRODUCT LABELLING

9.0 **Product Labelling**

9.1 Label Artwork & Location

Figure 9.1 Label Artwork & Location

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

EXHIBIT 10
PHOTOGRAPHS

10.0 Equipment Photographs

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

EXHIBIT 11
INSTRUCTION MANUAL

11.0 **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 12

TUNE UP PROCEDURE

12.0 **Tune Up Procedure**

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

EXHIBIT 13

PART LIST

13.0 **Part List**

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

EXHIBIT 14

RF EXPOSURE INFO

14.0 RF Exposure Info

For electronic filing, a preliminary copy of the SAR report is saved with filename: sar.pdf