

INTERTEK TESTING SERVICES

EXHIBIT 2
SYSTEM TEST CONFIGURATION

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1.2 Related Submittal(s) Grants

This is an Application for Certification of a cordless telephone system. Two transmitters are included in this Application. This specific report details the emission characteristics of each transmitter. The receivers are subject to the verification authorization process, in accordance with 15.101(b). A verification report has been prepared for the receiver sections of each device. The device is also subject to Part 68 Registration.

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 measurements 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 for maximizing emissions in Appendices D and E were followed. All Radiated tests were performed at an antenna to 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 radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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2.0 System Test Configuration

2.1 Justification

For emission testing, the equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). During testing, all cables were manipulated to produce worst case emissions. The handset was powered by a fully charged battery.

For the measurements, the EUT is attached to a cardboard box and placed on the wooden turntable. If the base unit attaches to peripherals, they are connected and operational (as typical as possible). The handset is remotely located as far from the antenna and the base as possible to ensure full power transmission from the base. Else, the base is wired to transmit full power without modulation.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Detector function is in peak mode. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater. All emissions greater than 20 dB μ V/m are recorded.

Radiated emission measurement were performed from 30 MHz to tenth harmonics.

2.2 EUT Exercising Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

For emissions testing, the units were setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing.

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2.3 Support Equipment List and Description

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system (included inserted cards, which have grants) are:

HARDWARE:

The unit was operated standalone. An AC adapter (provided with the unit) was used to power the device. Its description is listed below.

- (1) AC adapter with two meter unshielded power cord permanently affixed.

CABLES:

- (1) Telecommunication cable with RJ11C connectors (1m, unshielded), terminated

OTHERS:

There are no special accessories necessary for compliance of this product.

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2.4 Equipment Modification

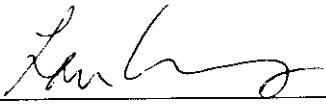
Any modifications installed previous to testing by In-Tech Electronics Ltd. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by ETL Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 2.0 of this report are confirmed by:

Confirmed by:

*C. K. Lam
Assistant Manager
Intertek Testing Services
Agent for In-Tech Electronics Ltd.*



Signature

June 4, 1998

Date

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EXHIBIT 3
EMISSION RESULTS

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3.0 **Emission Results**

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

where FS = Field Strength in dB μ V/m
RA = Receiver Amplitude (including preamplifier) in dB μ V
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:-

$$FS = RR + LF$$

where FS = Field Strength in dB μ V/m
RR = RA - AG in dB μ V
LF = CF + AF in dB

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V}/\text{m}$$

$$AF = 7.4 \text{ dB}$$

$$RR = 23.0 \text{ dB}\mu\text{V}$$

$$CF = 1.6 \text{ dB}$$

$$LF = 9.0 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 23 + 9 = 32 \text{ dB}\mu\text{V}/\text{m}$$

$$\text{Level in } \mu\text{V}/\text{m} = \text{Common Antilogarithm } [(32 \text{ dB}\mu\text{V}/\text{m})/20] = 39.8 \mu\text{V}/\text{m}$$

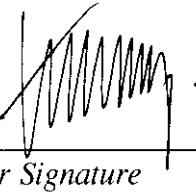
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3.3 Radiated Emission Data - Base Unit

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 4.3 dB

TEST PERSONNEL:



Tester Signature

Tommy W. L. Leung, Engineer
Typed/Printed Name

May 18, 1998
Date

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX-Channel 1

Table 1, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
V	902.156	72.2	32.0	16	88.2	94	-5.8
V	1804.107	46.9	26.5	34	39.4	54	-14.6
V	*2706.154	41.5	29.1	34	36.6	54	-17.4

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX-Channel 15

Table 2, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
V	902.900	73.7	32.0	16	89.7	94	-4.3
V	1905.802	46.1	26.5	34	38.6	54	-15.4
V	*2708.704	42.4	29.1	34	37.5	54	-16.5

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX-Channel 30

Table 3, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
V	904.000	73.6	32.0	16	89.6	94	-4.4
V	1808.002	45.9	26.5	34	38.4	54	-15.6
V	*2712.005	40.2	29.1	34	35.3	54	-18.7

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : Stand by

Table 4, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
V	31.995	39.6	10	16	33.6	40	-6.4
V	35.994	33.6	10	16	27.6	40	-12.4
V	39.999	30.2	10	16	24.2	40	-15.8
V	51.992	28.3	11	16	23.3	40	-16.7
V	59.992	30.8	10	16	24.8	40	-15.2
V	79.989	33.5	6	16	23.5	40	-16.5

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : Charging

Table 5, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
V	31.995	39.6	10	16	33.6	40	-6.4
V	35.994	33.6	10	16	27.6	40	-12.4
V	39.999	30.2	10	16	24.2	40	-15.8
V	51.992	28.3	11	16	23.3	40	-16.7
V	59.992	30.8	10	16	24.8	40	-15.2
V	79.989	33.5	6	16	23.5	40	-16.5

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

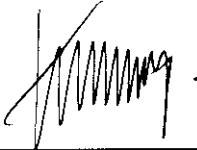
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3.5 Radiated Emission Data - Handset

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 9.5 dB

TEST PERSONNEL:



Tester Signature

Tommy W. L. Leung, Engineer

Typed/Printed Name

May 18, 1998

Date

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.
Model: Cobra CP-9105
Mode : TX-Channel 17

Date of Test: May 18, 1998

Table 6, Handset

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
H	926.100	67.4	33.0	16	84.4	94	-9.6
H	1852.202	47.8	26.5	34	40.3	54	-13.7
H	*2778.302	37.6	29.1	34	32.7	54	-21.3
H	*3704.401	26.6	32.8	34	25.4	54	-28.6
H	*4630.502	33.2	34.0	34	33.2	54	-20.8

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX-Channel 21

Table 7, Handset

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
H	927.000	66.3	33.0	16	83.3	94	-10.7
H	1854.001	49.0	26.5	34	41.5	54	-12.5
H	*2781.005	36.6	29.1	34	31.7	54	-22.3
H	*3708.006	28.0	32.8	34	26.8	54	-27.2
H	*4635.007	31.4	34.0	34	31.4	54	-22.6

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX-Channel 6

Table 8, Handset

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dB μ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
H	927.850	67.5	33.0	16	84.5	94	-9.5
H	1855.702	49.6	26.5	34	42.1	54	-11.9
H	*2783.557	37.3	29.1	34	32.4	54	-21.6
H	*3711.407	28.0	32.8	34	26.8	54	-27.2
H	*4639.252	30.6	34.0	34	30.6	54	-23.4

NOTES: 1. Peak Detector data

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna and average detector are used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of part 15.205. The corresponding limit as per 15.209 is based on Quasi peak detector data for frequencies below 1000 MHz and average detector data for frequencies over 1000 MHz.

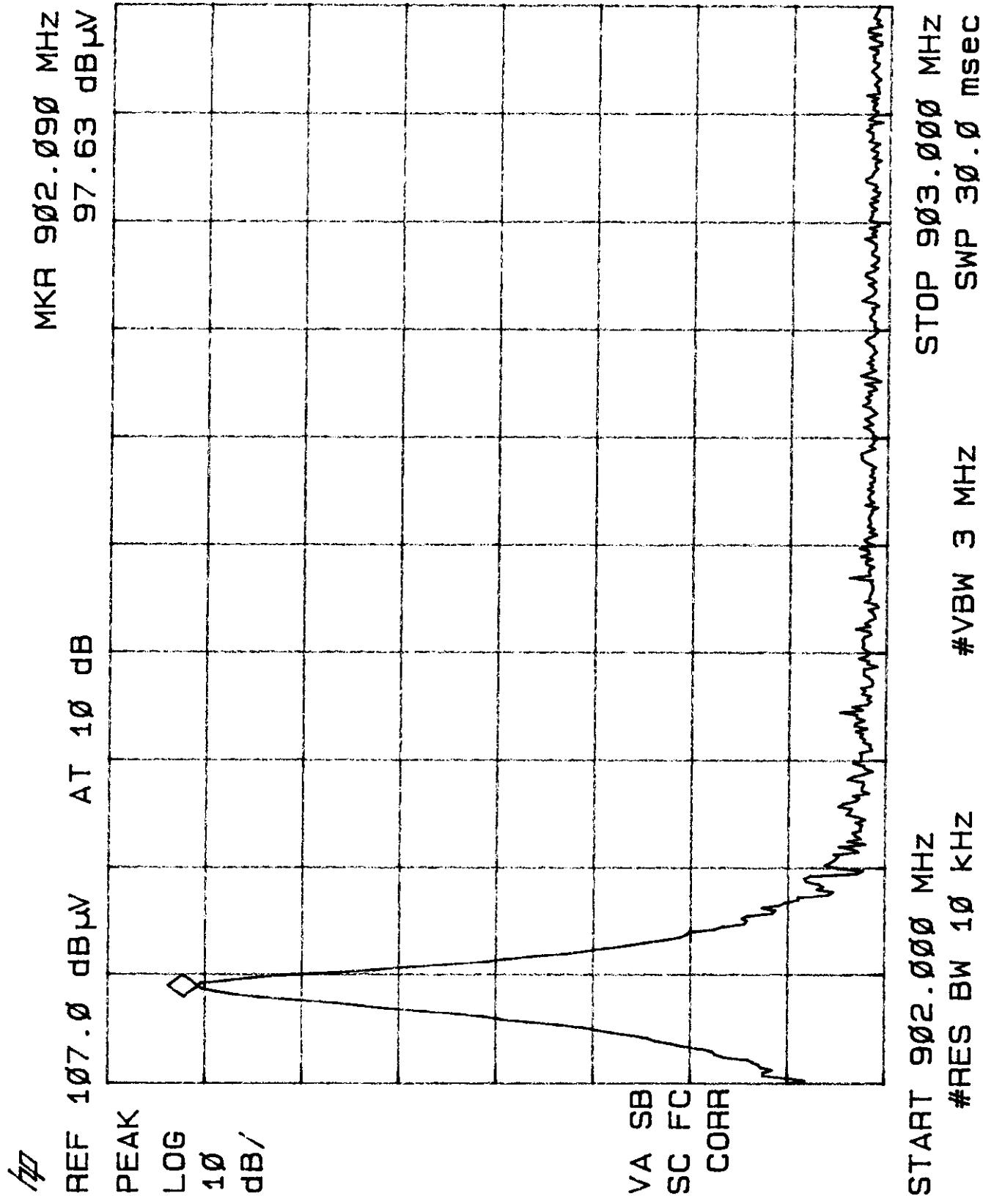
Test Engineer: Tommy W. L. Leung

INTERTEK TESTING SERVICES

3.6 Radiated Emission on the bandedge

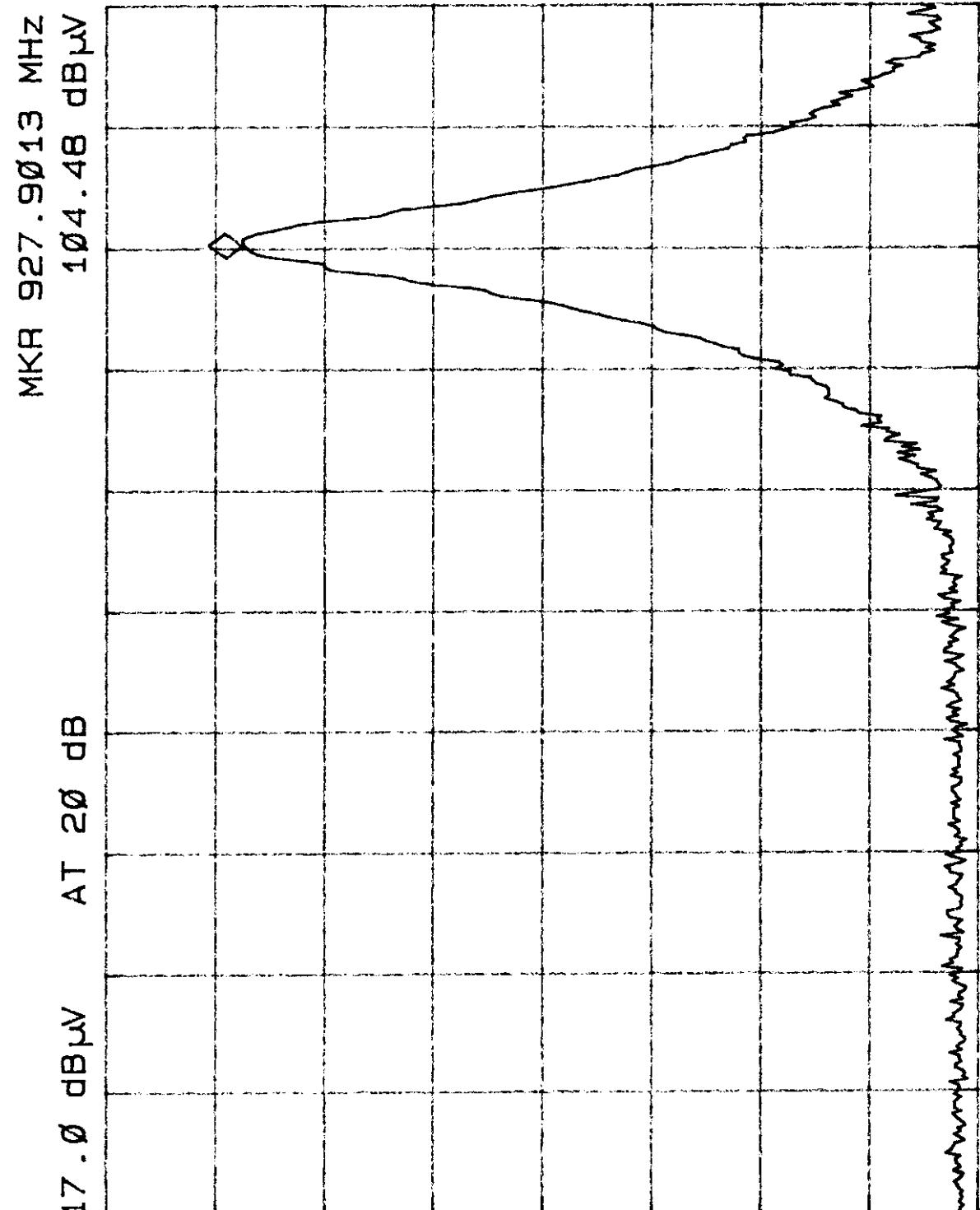
From the following plot, it shows that the fundamental emission is confined in the specified band. And there are shows that the emissions are at least 60 dB below the carrier level at band edge (902 and 928 MHz). It meet the requirement of section 15.249(c).

Emission Plot -Base



Emission Plot - Handset

REF 117.0 dB μ V AT 20 dB
PEAK LOG 10 dB /



VA SB
SC FC
CORR

START 927.5000 MHz
#RES BW 10 KHz
#VBW 3 MHz
SWP 30.0 msec
STOP 928.0000 MHz

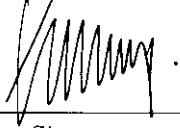
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3.8 Line Conducted Emission Configuration Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Passed by 16.3 dB

TEST PERSONNEL:



Tester Signature

Tommy W. L. Leung, Engineer
Typed/Printed Name

May 18, 1998
Date

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX

Graph 1, Base Unit

Conducted Emissions

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : TX

Table 9, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Mode=TX

Report No.: 9802957

Tested By:Hong, Report No.:9802957

Scan Settings (1 Range)

Frequencies			Receiver Settings						
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge	
450k	30M	5k	10k	PK	20ms	AUTO	LN	OFF	60dB

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.58000	27.8	48.0
0.70000	28.4	48.0
0.76500	26.8	48.0
1.14500	20.8	48.0

* limit exceeded

Ctrl. No.: N/A

FCC ID: NV69105

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : Charging

Graph 2, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Mode = Charging

Report No.: 9802957

Device Type: Report Type: 1000

Device Description: Emitter

Test Type: Emission Test Type: 1000

Test ID: 1000 Date Test: 10/18/98 Time After Preamp: 0:00:00

Test ID: 1000 Date Test: 10/18/98 Time After Preamp: 0:00:00

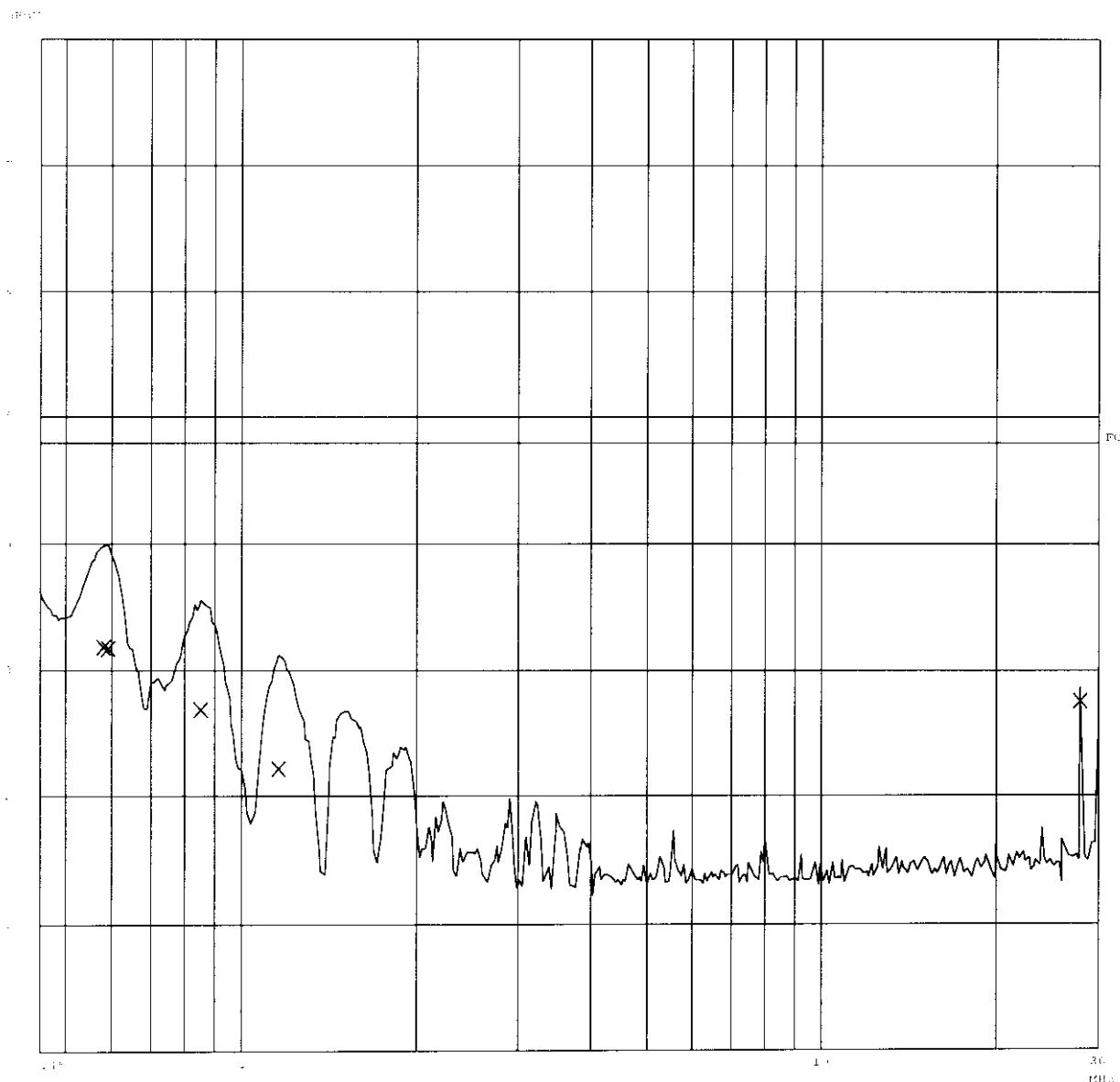
Test ID: 1000 Date Test: 10/18/98

Test ID: 1000 Date Test: 10/18/98

Test ID: 1000 Date Test: 10/18/98

Test Type: Emission

Model: E10075



Ctrl. No.: N/A

FCC ID: NV69105

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : Charging

Table 10, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Mode: Charging

Report No.: 9802957

Tested By:Hong, Report No.:9802957

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450k	30M	5k	10k	PK	20ms	AUTO	LN OFF	60dB

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.58000	31.7	48.0
0.59000	31.7	48.0
0.65500	26.8	48.0
1.16000	22.1	48.0
28.00000	27.4	48.0

* limit exceeded

Ctrl. No.: N/A

FCC ID: NV69105

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : Stand by

Graph 3, Base Unit

Conducted Emissions

INTERTEK TESTING SERVICES

Company: In-Tech Electronics Ltd.

Date of Test: May 18, 1998

Model: Cobra CP-9105

Mode : Stand by

Table 11, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Mode=Stand by

Report No.: 9802957

Tested By:Hong, Report No.:9802957

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450k	30M	5k	10k	PK	20ms	AUTO	LN OFF	60dB

Final Measurement Results:

Frequency MHz	QP Level dBuV	QP Limit dBuV
0.45000	29.0	48.0
0.60000	24.8	48.0
0.93000	20.8	48.0
0.99500	19.6	48.0

* limit exceeded

Ctrl. No.: N/A

INTERTEK TESTING SERVICES

EXHIBIT 4
EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

4.0 Equipment Photographs

Photographs of the tested EUT are attached.

EXHIBIT 8
SECURITY CODE INFORMATION

INTERTEK TESTING SERVICES

8.0 Security code information

The telephone has an internal security code with 65,000 possible combinations. Each time you place the HANDSET in the base, the code is randomly set to a new combination.