

INTERTEK TESTING SERVICES

EXHIBIT 2
SYSTEM TEST CONFIGURATION

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

2.4 Equipment Modification

Any modifications installed previous to testing by Shenzhen Guangdong Comm. Co. 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.

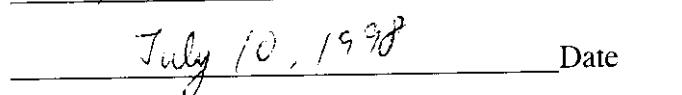
All the items listed under section 2.0 of this report are confirmed by:

Confirmed by:

*C. K. Lam
Assistant Manager
Intertek Testing Services
Agent for Shenzhen Guangdong Comm. Co. Ltd.*



Lam _____ Signature



July 10, 1998 _____ Date

INTERTEK TESTING SERVICES

EXHIBIT 3
EMISSION RESULTS

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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 $\text{dB}\mu\text{V}/\text{m}$

RA = Receiver Amplitude (including preamplifier) in $\text{dB}\mu\text{V}$

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 $\text{dB}\mu\text{V}/\text{m}$

RR = $RA - AG$ in $\text{dB}\mu\text{V}$

LF = $CF + AF$ in dB

Assume a receiver reading of 52.0 $\text{dB}\mu\text{V}$ 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 $\text{dB}\mu\text{V}/\text{m}$. This value in $\text{dB}\mu\text{V}/\text{m}$ was converted to its corresponding level in $\mu\text{V}/\text{m}$.

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

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

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

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

$$FS = RR + LF$$

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

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

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

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

INTERTEK TESTING SERVICES

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 12.7 dB

TEST PERSONNEL:



Tester Signature

Ken C. C. Lam, Engineer

Typed/Printed Name

July 10, 1998

Date

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

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	902.100	51.2	32.0	16	67.2	94	-26.8
H	*2706.303	42.7	29.1	34	37.8	54	-16.2
H	*3608.405	41.5	32.8	34	40.3	54	-13.7

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: Ken C. C. Lam

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : TX-Channel 30

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	902.825	50.1	32.0	16	66.1	94	-27.9
H	*2708.477	40.3	29.1	34	35.4	54	-18.6
H	*3611.302	42.2	32.8	34	41.0	54	-13.0

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: Ken C. C. Lam

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : TX-Channel 60

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	903.620	49.8	32.0	16	65.8	94	-28.2
H	*2710.862	44.7	29.1	34	39.8	54	-14.2
H	*3614.482	42.5	32.8	34	41.3	54	-12.7

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: Ken C. C. Lam

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

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	33.037	27.4	10	16	21.4	40	-18.6
V	37.167	28.3	10	16	22.3	40	-17.7
V	41.296	27.2	10	16	21.2	40	-18.8
H	45.426	28.1	10	16	22.1	40	-17.9
H	53.684	25.8	11	16	20.8	40	-19.2
H	57.815	25.1	11	16	20.1	40	-19.9
H	70.204	29.7	7	16	20.7	40	-19.3

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: Ken C. C. Lam

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

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	33.037	27.4	10	16	21.4	40	-18.6
V	37.167	28.3	10	16	22.3	40	-17.7
V	41.296	27.2	10	16	21.2	40	-18.8
H	45.426	28.1	10	16	22.1	40	-17.9
H	53.684	25.8	11	16	20.8	40	-19.2
H	57.815	25.1	11	16	20.1	40	-19.9
H	70.204	29.7	7	16	20.7	40	-19.3

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: Ken C. C. Lam

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

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 8.2 dB

TEST PERSONNEL:



Tester Signature

Ken C. C. Lam, Engineer
Typed/Printed Name

July 10, 1998
Date

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : TX-Channel 1

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)
V	926.100	58.2	33.0	16	75.2	94	-18.8
H	1852.200	41.7	26.5	34	34.2	54	-19.8
H	*2778.300	45.6	29.1	34	40.7	54	-13.3
H	*3704.400	45.9	32.8	34	44.7	54	-9.3

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: Ken C. C. Lam

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : TX-Channel 30

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)
V	926.825	59.1	33.0	16	76.1	94	-17.9
H	1853.650	43.3	26.5	34	35.8	54	-18.2
H	*2780.475	46.5	29.1	34	41.6	54	-12.4
H	*3707.3	47.0	32.8	34	45.8	54	-8.2

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: Ken C. C. Lam

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.
Model: GD-2606
Mode : TX-Channel 60

Date of Test: June 11, 1998

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)
V	927.575	61.2	33.0	16	78.2	94	-15.8
H	1855.150	43.1	26.5	34	35.6	54	-18.4
H	*2782.725	47.0	29.1	34	42.1	54	-11.9
H	*3710.300	45.8	32.8	34	44.6	54	-9.4

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: Ken C. C. Lam

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 70 dB below the carrier level at band edge (902 and 928 MHz). It meet the requirement of section 15.249(c).

INTERTEK TESTING SERVICES

Emission Plot -Base

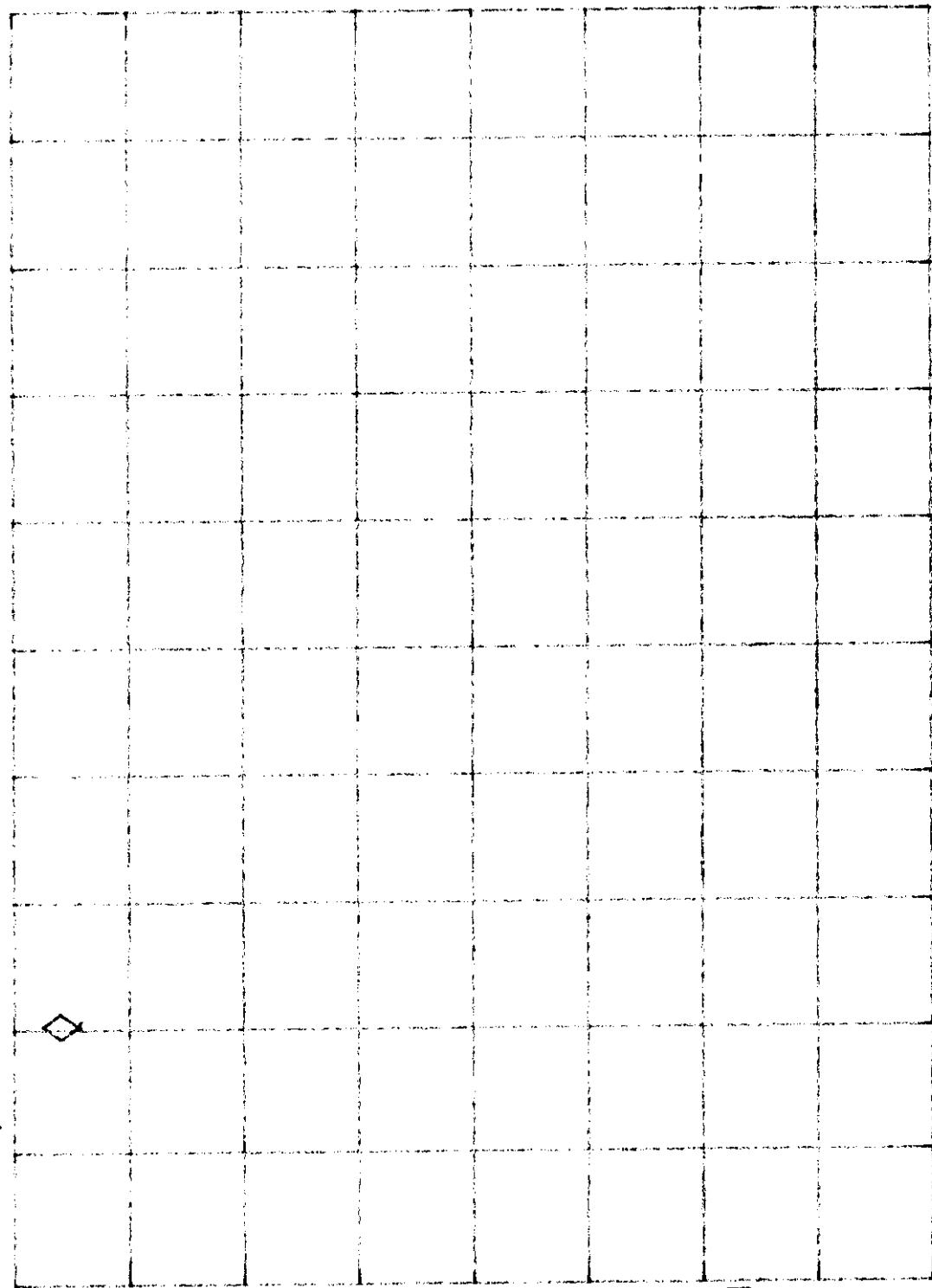
MKR 902.1013 MHz

77.36 dB μ V

AT 10 dB

REF 83.0 dB μ V

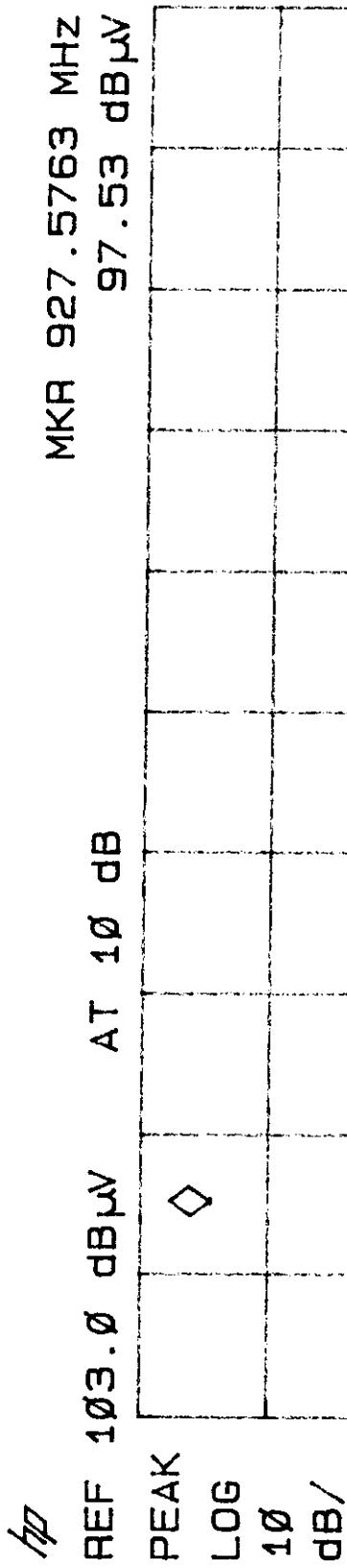
PEAK
LOG
10
dB/



VA SB
SC FC
CORR

START 902.0000 MHz
#RES BW 10 kHz
#VBW 3 MHz
STOP 902.5000 MHz
SWP 30.0 msec

Emission Plot - Handset



VA SB
SC FC
CORR

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

INTERTEK TESTING SERVICES

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 15.4 dB

* All readings are peak unless stated otherwise.

TEST PERSONNEL:



Tester Signature

Ken C. C. Lam, Engineer
Typed/Printed Name

July 10, 1998
Date

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

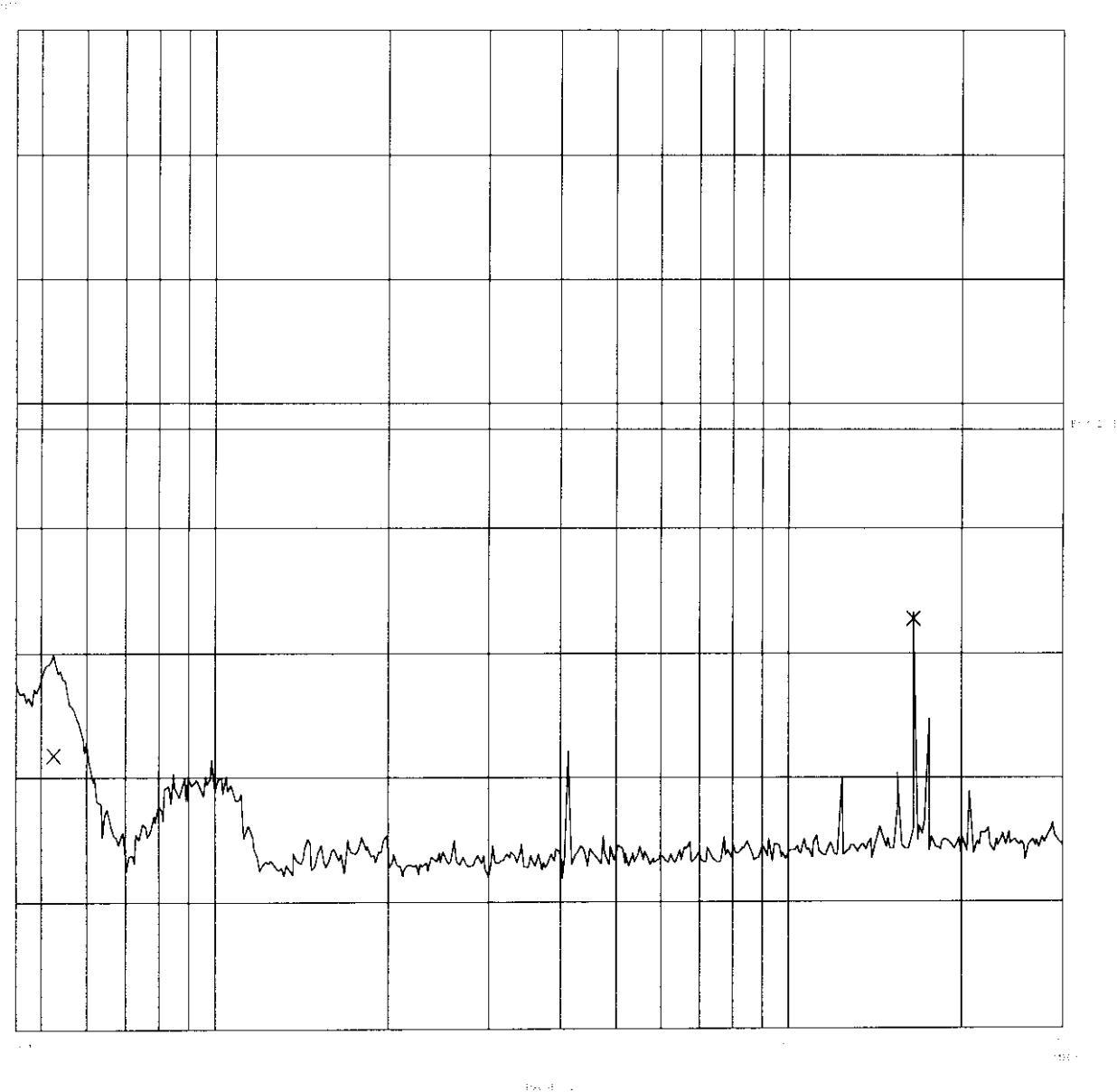
Mode : TX

Graph 1, Base Unit

Conducted Emissions

Model: TX

Report No.: 9802335



Ctrl. No.: *N/A*

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : TX

Table 9, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Report No.: 9802335

Model: TX

Tested By:Hong, Report No.:9802335

Scan Settings (1 Range)

Frequencies			Receiver Settings						
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge	
480k	36M	5k	10k	PK	30ms	AUTO	LN	OFF	60dB

Final Measurement Results:

Frequency	QP Level	QP Limit
MHz	dBuV	dBuV

6.52500	21.7	48.0
16.51500	32.6	48.0

* limit exceeded

Ctrl. No.: N/A

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : Charging

Graph 2, Base Unit

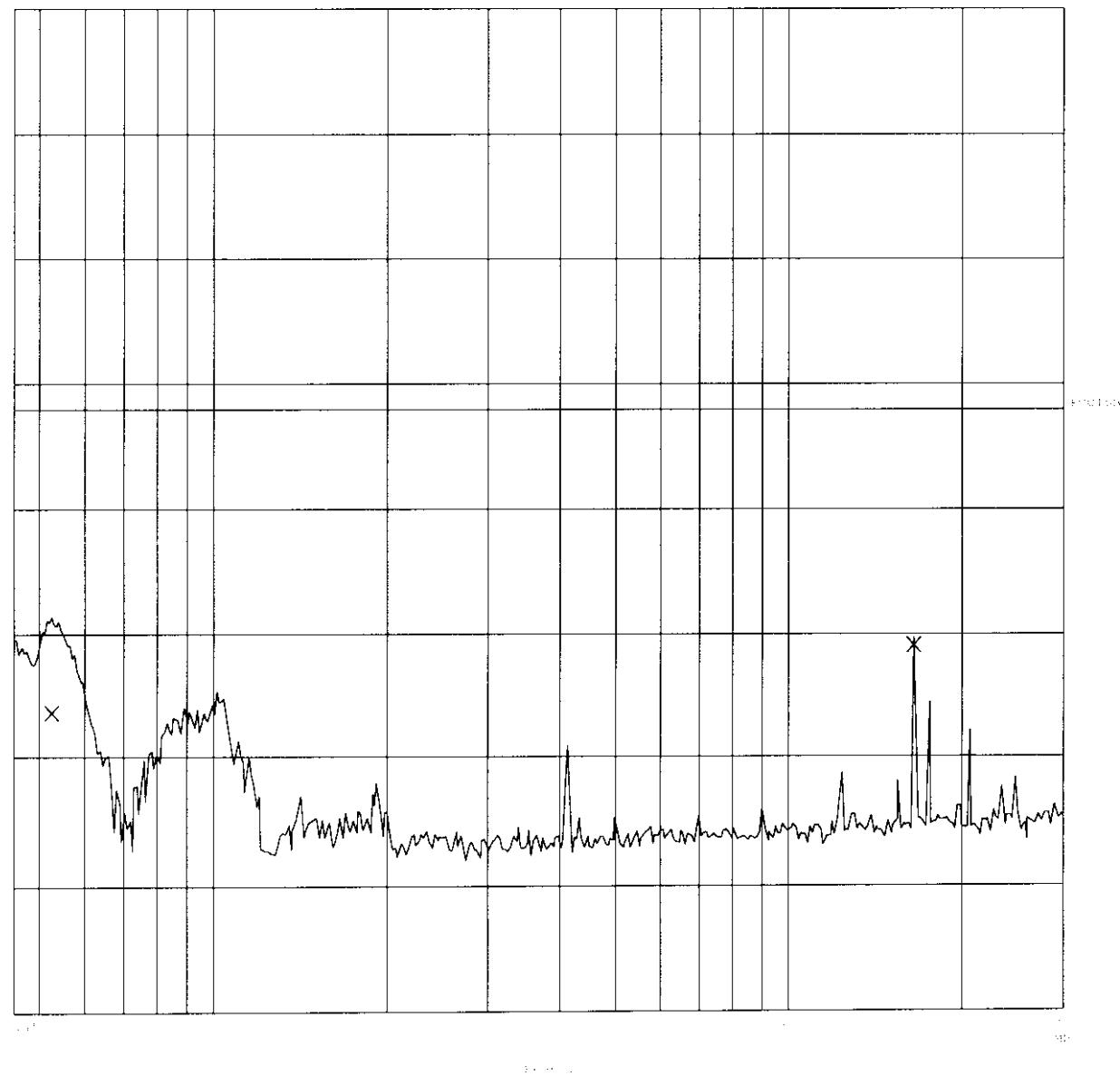
Conducted Emissions

Intertek Testing Services

ETL Testing Laboratories

Module: Charging

Report No.: 9802335



Ctrl. No.: *N/A*

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : Charging

Table 10, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Model: Charging

Report No.: 9802335

Tested By:Hong, Report No.:9802335

Scan Settings (1 Range)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450K	3000	5K	10K	PK	20ms	AUTO	LN OFF	60dB

Final Measurement Results:

Frequency	QP Level	QP Limit
MHz	dBuV	dBuV
6.52500	23.7	48.0
16.51500	29.0	48.0

* limit exceeded

Ctrl. No.: N/A

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : Stand by

Graph 3, Base Unit

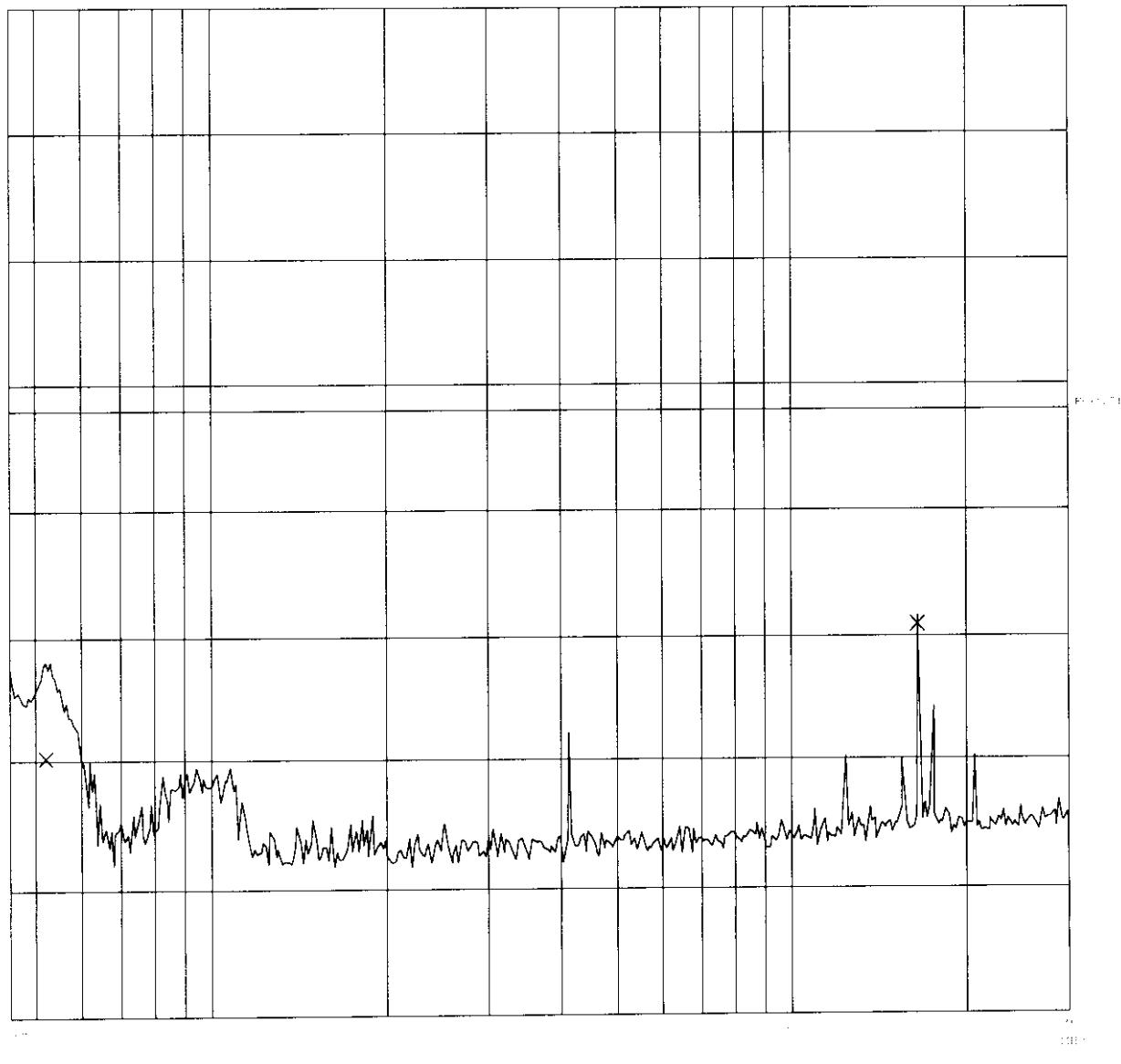
Conducted Emissions

Intertek Testing Services

ETL Testing Laboratories

Report No.: 9802335

Mode: standby



Ctrl. No.: N/A

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

Company: Shenzhen Guangdong Comm. Co. Ltd.

Date of Test: June 11, 1998

Model: GD-2606

Mode : Stand by

Table 11, Base Unit

Conducted Emissions

ITS Intertek Testing Services

ETL Testing Laboratories

Mode: Standby

Report No.: 4802335

Tested By: Hong, Report No.: 9802335

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	QP Level	QP Limit
MHz	dBuV	dBuV
0.52000	26.0	48.0
16.51500	30.8	48.0

* Limit exceeded

Ctrl. No.: N/A

FCC ID: M90GDC2606

INTERTEK TESTING SERVICES

EXHIBIT 4
EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

4.0 Equipment Photographs

Photographs of the tested EUT are attached.

INTERTEK TESTING SERVICES

EXHIBIT 8
SECURITY CODE INFORMATION

INTERTEK TESTING SERVICES

8.0 Security code information

The telephone has an internal security code with 65,536 possible combinations. Each time you pick up the HANDSET, the code is randomly set to a new combination.

Communication between HANDSET and BASE UNIT may not be possible in any of the following situation:

1. After a power failure.
2. After relocation the BASE UNIT by disconnecting the AC adaptor.
3. After replacing the HANDSET battery.
4. The handset goes out of range from the base unit.

To reset, place the HANDSET on the BASE UNIT for 5 seconds.