April 14, 2000

Guangdong (Baoan) Communication Co., Ltd.
Blk. 27, Chentian Ind'l. Park,
Xixian, Baoan, Shenzhen,
China.
Tel. : 86-755-7936202
Fax. : 86-755-7936962

Dear Mr. Dan Coronia:

Enclosed you will find your file copy of a Part 15 Certification (FCC ID: NS2GH9402). We have forwarded the original, along with your check for $45.00, to the FCC.

For your reference, FCC will normally take another 60 to 90 days for reviewing the report. Approval will then be granted when no query is sorted.

Please contact me if you have any questions regarding the enclosed material.

Sincerely,

Wilson Loke
Manager

Enclosure

FCC ID: NS2GH9402

Guangdong (Baoan) Communication Co., Ltd.

FCC Part 15

Permissive Change

2.4GHz 50-Channel Basic Cordless Telephone

(FCC ID: NS2GH9402)

WO# 0002342
PKL/kid
April 14, 2000

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

FCC ID: NS2GH9402

Intertek Testing Services Hong Kong Ltd.
2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong.
Tel: (852) 2173 8888 Fax: (852) 2741 1693

LIST OF EXHIBITS

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EXHIBIT 2: System Test Configuration

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MEASUREMENT/TECHNICAL REPORT

Guangdong (Baoan) Communication Co., Ltd. - MODEL: BellSouth GH9404
FCC ID: NS2GH9402

This report concerns (check one:) Original Grant_____ Class II Change _X_

Equipment Type : Cordless Telephone (example : computer, modem, transmitter, etc.)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No _X_

If yes, defer until : _____ date

Company Name agrees to notify the Commission by: _____ date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37 ? Yes _____ No _X_

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-1-96 Edition] Provision.

Report prepared by:

Wilson Loke
Intertek Testing Services.
2/F., Garment Centre,
576 Castle Peak Road,
Kowloon, Hong Kong.
Phone : 852-2173-8575
Fax: 852-2741-1693

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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 Setup Photo	Radiated Emission for Base	base1.jpg, base2.jpg
Test Setup Photo	Radiated Emission for Handset	handset1.jpg, handset2.jpg
Test Report	Emission Plot	emission.pdf
Test Setup Photo	Conducted Emission	conduct1.jpg to conduct3.jpg
Test Report	Conducted Emission Test Result	conduct.pdf
External Photo	External Photo	ophoto1.jpg, ophoto2.jpg
Internal Photo	Internal Photo	iphoto1.jpg to iphoto10.jpg
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf, rfcircuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf

EXHIBIT 1
GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The BellSouth GH9404 is a 2.4GHz 50-Channel Basic Cordless Telephone. The unit is capable of either tone or pulse dialing. The internal power supply's isolation is accomplished through a power transformer having an adequate dielectric rating. The circuit wiring is consistent under the requirement of part 68.

The handset unit consists of a keypad with twelve standard keys (0,...9,*,#), Five function keys (Redial, Flash, Memo, Pause, Tone), and one channel switch key. A Talk key is provided to control pick/release telephone line in a toggle base.

The base unit has a page key, which is used to page the handset unit.

The circuit description is saved with filename: descri.pdf

Connection between the device and the telephone network is accomplished through the use of USOC RJ11C in the 2-wire loop calling central office line.

1.2 Purpose of the Change

The purpose of this application is to modify the PCB layout for fitting the new enclosure and the RF module, features and functionality remain the same.

1.3 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 emission characteristics of each receiver are also included.

1.4 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. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

1.5 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.

EXHIBIT 2
SYSTEM TEST CONFIGURATION

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 dBμV/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.

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:

(1) A headset for telephone use with 1.2m unshielded cable permanently affixed.

2.4 Equipment Modification

Any modifications installed previous to testing by Guangdong (Baoan) Communication 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:

Wilson Loke
Manager
Intertek Testing Services
Agent for Guangdong (Baoan) Communication Co. Ltd.

Signature

April 15, 2000 Date

EXHIBIT 3
EMISSION RESULTS

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.

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 dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
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 dBμV/m
RR = RA - AG in dBμV
LF = CF + AF in dB

Assume a receiver reading of 52.0 dBμV 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 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV/m
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dBμV/m

RR = 23.0 dBμV
LF = 9.0 dB

Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m

3.2 Radiated Emission Configuration Photograph - Base Unit

Worst Case Radiated Emission

at 898.459 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: base1.jpg and base2.jpg

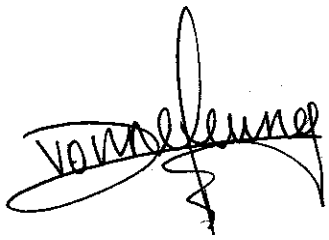
3.3 Radiated Emission Data - Base Unit

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

Judgement : Passed by 3.5 dB

****

TEST PERSONNEL:



Tester Signature

Yvonne Leung, Engineer
Typed/Printed Name

April 14, 2000
Date

Company: Guangdong (Baoan) Communication Co. Ltd. Date of Test: April 2, 2000
Model: BellSouth GH9404
Mode : Channel 1

Table 1, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Limit (dBµV/m)	Margin (dB)
V	2472.215	95.1	29.1	34	90.2	94	-3.8
H	824.072	29.2	21.3	16	34.5	46	-11.5
V	1648.143	47.3	26.5	34	39.8	54	-14.2
V	3296.287	40.7	31.4	34	38.1	54	-15.9
H	895.310	35.7	22.4	16	42.1	46	-3.9
V	1790.620	46.0	26.5	34	38.5	54	-15.5
V	*2685.930	44.0	29.1	34	39.1	54	-14.9

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: Yvonne Leung

Company: Guangdong (Baoan) Communication Co. Ltd. Date of Test: April 2, 2000
Model: BellSouth GH9404
Mode : Channel 50

Table 2, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Limit (dBµV/m)	Margin (dB)
V	2476.939	95.2	29.1	34	90.3	94	-3.7
H	825.646	29.0	21.8	16	34.8	46	-11.2
V	1651.292	47.6	26.5	34	40.1	54	-13.9
V	3302.585	41.2	31.4	34	38.6	54	-15.4
H	898.459	36.1	22.4	16	42.5	46	-3.5
V	1797.918	47.3	26.5	34	39.8	54	-14.2
V	*2695.377	44.2	29.1	34	39.3	54	-14.7

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: Yvonne Leung

Company: Guangdong (Baoan) Communication Co. Ltd. Date of Test: April 2, 2000
Model: BellSouth GH9404
Mode : Stand by

Table 3, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Limit (dBµV/m)	Margin (dB)
V	30.969	36.3	11.6	16	31.9	40	-8.1

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: Yvonne Leung

Company: Guangdong (Baoan) Communication Co. Ltd. Date of Test: April 2, 2000
Model: BellSouth GH9404
Mode : Charging

Table 4, Base unit

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Limit (dBµV/m)	Margin (dB)
V	30.969	36.3	11.6	16	31.9	40	-8.1

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: Yvonne Leung

3.4 Radiated Emission Configuration Photograph - Handset

Worst Case Radiated Emission

at 453.005 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: handset1.jpg and handset2.jpg

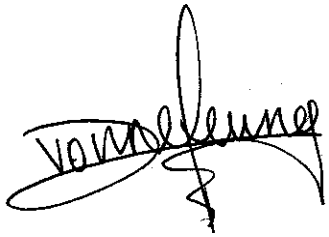
3.5 Radiated Emission Data - Handset

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

Judgement : Passed by 3.2 dB

****

TEST PERSONNEL:



Tester Signature

Yvonne Leung, Engineer
Typed/Printed Name

April 14, 2000
Date

Company: Guangdong (Baoan) Communication Co. Ltd. Date of Test: April 2, 2000
Model: BellSouth GH9404
Mode : Channel 1

Table 5, Handset

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Limit (dBµV/m)	Margin (dB)
V	906.010	79.9	22.6	16	86.5	94	-7.5
V	453.005	42.0	16.8	16	42.8	46	-3.2
V	*1359.015	48.1	25.5	34	39.6	54	-14.4
V	1812.020	46.0	26.5	34	38.5	54	-15.5
H	*2265.025	42.5	29.1	34	37.6	54	-16.4
H	827.638	35.0	21.8	16	40.8	46	-5.2
V	1655.277	55.4	26.5	34	47.9	54	-6.1
V	2483.915	43.5	29.1	34	38.6	54	-15.4
H	3310.553	38.5	31.4	34	35.9	54	-18.1

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: Yvonne Leung

Company: Guangdong (Baoan) Communication Date of Test: April 2, 2000
Model: BellSouth GH9404
Mode : Channel 50

Table 6, Handset

Radiated Emissions

Polarity	Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dBµV/m)	Limit (dBµV/m)	Margin (dB)
V	909.159	80.3	22.6	16	86.9	94	-7.1
V	454.580	41.5	16.8	16	42.3	46	-3.7
H	*1363.739	48.4	25.5	34	39.9	54	-14.1
H	1818.318	46.1	26.5	34	38.6	54	-15.4
H	*2273.898	42.3	29.1	34	37.4	54	-16.6
H	829.213	33.8	21.8	16	39.6	46	-6.4
H	1658.426	54.4	26.5	34	46.9	54	-7.1
V	2487.639	43.5	29.1	34	38.6	54	-15.4
H	3316.852	42.0	31.4	34	39.4	54	-14.6

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: Yvonne Leung

3.6 Radiated Emission on the bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band and they are at least 55 dB below the carrier level at band edge (902 - 928 MHz and 2400 - 2483.5 MHz). It meets the requirement of section 15.249(c).

Emission Plot

For electronic filing, the emission plots are saved with filename: emission.pdf

3.7 Line Conducted Configuration Photograph - Base Unit

Worst Case Line-Conducted Configuration

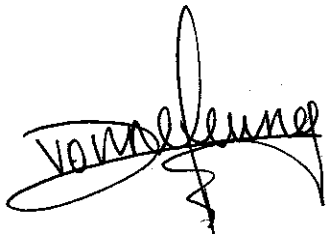
For electronic filing, the worst case line conducted configuration photographs are saved with filename: conduct1.jpg to conduct3.jpg

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 more than 20dB margin

TEST PERSONNEL:



Tester Signature

Yvonne Leung, Engineer
Typed/Printed Name

April 14, 2000
Date

Company: Guangdong (Baoan) Communication Co. Ltd. Date of Test: April 2, 2000
Model: BellSouth GH9404

Conducted Emissions

For electronic filing, the conducted emission test result is saved with filename: conduct.pdf

EXHIBIT 4
EQUIPMENT PHOTOGRAPHS

4.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename: ophoto1.jpg to ophoto2.jpg & iphoto1.jpg to iphoto10.jpg

EXHIBIT 5
PRODUCT LABELLING

5.0 **Product Labelling**

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf

EXHIBIT 6
TECHNICAL SPECIFICATIONS

6.0 **Technical Specifications**

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

EXHIBIT 7
INSTRUCTION MANUAL

7.0 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 on Page 27-28 of 35 of this manual.

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

EXHIBIT 8
SECURITY CODE INFORMATION

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.

To reset, place the HANDSET on the BASE UNIT for 2 to 5 seconds.