

Binatone Electronics International Ltd.

Application
For
Permissive Change Class II

Unlicensed Personal Communication Service Devices

FCC ID: VLJ80-6997-01

Test Report Number: HK09010267-1

Issue Date: February 19, 2009

TL/ ac

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INTERTEK TESTING SERVICES

MEASUREMENT/TECHNICAL REPORT

Binatone Electronics International Ltd.

Model: S801, S802, S803, S804, S805, S80x, P8

FCC ID: VLJ80-6997-01

This report concerns (check one): Original Grant ☐ Class II Change ☒

Equipment Type : PUB - Part 15 Unlicensed PCS Base Station
PUE - Part 15 Unlicensed PCS portable Tx held to ear

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes ☐ No ☒

If yes, defer until :

Date

Company Name agrees to notify the Commission by: _____
Date

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

Transition Rules Request per 15.37? Yes ☐ No ☒

If no, assumed Part 15, Subpart D for Unlicensed Personal Communication Service Device - the new 47 CFR [10-01-07 Edition] Provision.

Report prepared by: Leung Wai Leung, Tommy

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INTERTEK TESTING SERVICES

Table of Contents

| | |
|--|-----------|
| 1.0 Summary of Test Results | 4 |
| 2.0 General Description | 6 |
| 2.1 Product Description | 6 |
| 2.2 Purpose of Application..... | 7 |
| 2.3 Test Methodology..... | 7 |
| 2.4 Test Facility..... | 7 |
| 3.0 System Test Configuration | 9 |
| 3.1 Justification | 9 |
| 3.2 Conducted Emission Test Configuration | 10 |
| 3.3 EUT Exercising Software..... | 10 |
| 3.4 Details of EUT and Description of Peripherals | 11 |
| 3.5 Measurement Uncertainty | 12 |
| 3.6 Equipment Modification | 12 |
| 4.0 Measurement Results | 14 |
| 4.1 Antenna Requirement | 14 |
| 4.2 Directional Gain of the Antenna | 15 |
| 4.3 Power Spectral Density | 16 |
| 4.4 Unwanted Emission Inside the Sub-Band | 18 |
| 4.5 Emissions Outside the Sub-Band | 20 |
| 4.5.1 Radiated Emissions Configuration Photographs | 21 |
| 4.5.2 Radiated Emissions Data | 22 |
| 4.5.3 Field Strength Calculation..... | 29 |
| 4.6 AC Power Lines Conducted Emissions from Transmitter portion of EUT | 30 |
| 4.6.1 AC Power Lines Conducted Emissions Configuration Photographs..... | 31 |
| 4.6.2 AC Power Line Conducted Emissions Data | 32 |
| 4.7 Radio Frequency Radiation Exposure | 33 |
| 4.8 Frame Period and Jitter | 34 |
| 4.9 Monitoring Antenna | 35 |

Appendix – Exhibits for Application of Certification

INTERTEK TESTING SERVICES

EXHIBIT 1 SUMMARY OF TEST RESULTS

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1.0 Summary of Test Results

Binatone Electronics International Ltd.

Model: S801, S802, S803, S804, S805, S80x, P8

FCC ID: VLJ80-6997-01

| Technical Requirements | | | | |
|--|---------------------|---|---------|---------------------------|
| Test Items | FCC Part 15 Section | Test Procedure ANSI C63.17 / ANSI C63.4 * | Results | Details see section |
| Antenna Requirement | 15.317 | --- | Pass | 4.1 |
| Directional Gain of the Antenna | 15.319(e) | 4.3.1 | Pass | 4.2 |
| Power Spectral Density | 15.319(d) | 6.1.5 | Pass | 4.3 |
| Unwanted Emission Inside the Sub-Band | 15.323(d) | 6.1.6.1 | Pass | 4.4 |
| Emissions Outside the Sub-Band | 15.323(d) | 6.1.6.2 | Pass | 4.5 |
| AC Power Lines Conducted Emissions from Transmitter Portion of EUT | 15.315 | 7 * | Pass | 4.6 |
| Radio Frequency Radiation Exposure | 15.319(i) | --- | Pass | 4.7 |
| Frame Period and Jitter | 15.323(e) | 6.2.3 | Pass | 4.8 |
| Monitoring Antenna | 15.323(c)(8) | 4 | Pass | 4.9 |

Test Engineer:



Ken Sit
Assistant Manager

Date: February 19, 2009

Approved By:



Leung Wai Leung, Tommy
Senior Manager

Date: February 19, 2009

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EXHIBIT 2 GENERAL DESCRIPTION

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2.0 **General Description**

2.1 Product Description

The S802 is a 1.9GHz Digital Modulation Cordless Phone with Caller ID and Digital Answering Machine. It operates at frequency range of 1921.536MHz to 1928.448MHz with 5 channels (1921.536MHz, 1923.264MHz, 1924.992MHz, 1926.720MHz and 1928.448MHz). The Base Unit is powered by an adaptor 110-120VAC to 6VDC 600mA. The Handset is powered by a "Ni-MH" type rechargeable battery pack (2.4V 500mAh).

The antennas used in base unit and handset are integral, and the test sample is a prototype.

The Model: S801, S803, S804, S805, and S80x are the same as the Model: S802 in hardware aspect except different number of handsets and extra chargers. Suffix, x, indicates number of identical handsets and extra chargers packed in the package. Model: P8 is an additional identical handset with an extra charger for selling a handset standalone. The difference in model number serves as marketing strategy.

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

The technical description is saved as filename: descri.pdf

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2.2 Purpose of Application

The purpose of change is saved as filename: product change.pdf

This is an application for Certification of a PUB - Part 15 Unlicensed PCS Base Station, PUE - Part 15 Unlicensed PCS portable Tx held to ear. The device is also subject to Part 68 Registration. A Verification report has been prepared for the digital device portion.

2.3 Test Methodology

The radiated emission measurements for unintentional radiator (if any) and AC power line-conducted emission measurements (if applicable) were performed according to the test procedures specified in ANSI C63.4 (2003). The radiated emission measurements for intentional radiator contained in UPCS device, antenna conducted measurements were performed according to the test procedures specified in ANSI C63.17 (2006). All radiated 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. All other measurements were made in accordance with the procedures in 47 CFR Part 2.

2.4 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. This test facility and site measurement data have been fully placed on file with the FCC.

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EXHIBIT 3 SYSTEM TEST CONFIGURATION

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3.0 **System Test Configuration**

3.1 Justification

For emissions testing, the equipment under test (EUT) was setup to transmit continuously in burst mode with pseudo-random data to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst-case emissions. The handset (if any) was powered by a fully charged battery.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable. If the base unit attached to peripherals, they were connected and operational (as typical as possible).

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

The spectrum analyzer resolution bandwidth was approximately 1% of the EUT emission bandwidth, unless otherwise specified.

Radiated emission measurements were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

RF module and LBT algorithm for base unit and handset of S802 are the same as the previous granted models L402 and L302. Therefore conducted emission measurement for emission bandwidth, peak transmit power, jitter, frame repetition stability, carrier stability and listen before transmit requirements for S802 are skipped.

As the base unit has 2 antennas, both have been checked. While conducting the test on one of antennas, another one was being disable its transmission. The data in this report represented the worst-case.

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3.2 Conducted Emission Test Configuration

The setup and equipment setting were made in accordance with ANSI C63.17. The antenna of EUT transmitter was replaced by a coaxial cable. The impedance matching of connection, cable loss and external RF attenuator were taken into account. The EUT was arranged to communicate via a fixed carrier frequency between its transmitter and a companion device. The transmission was configured in burst mode with pseudo-random data as typical as normal operation.

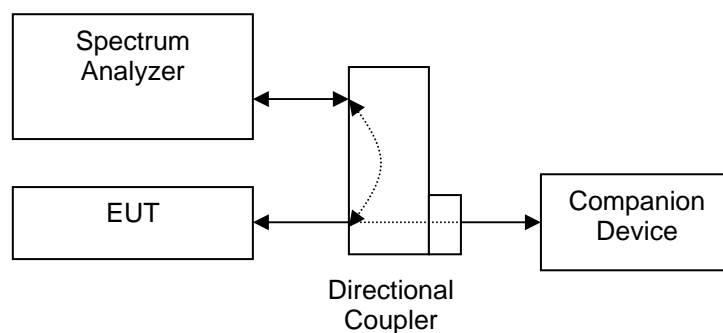


Figure 3.2.1

3.3 EUT Exercising Software

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

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3.4 Details of EUT and Description of Peripherals

Details of EUT:

An AC adaptor and/or a battery (provided with the unit) were used to power the device. Their description are listed below.

- (1) Base Unit: An AC adaptor (110-120VAC to 6VDC 600mA, Model: S005IU0600060) (Supplied by Client)
- (2) Handset: A "Ni-MH" Type Rechargeable Battery Pack (2.4V 500mAh) (Supplied by Client)
- (3) Extra Charger: An AC adaptor (117VAC to 6VAC 300mA, Model: UA-0603) (Supplied by Client)

Description of Peripherals:

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

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3.5 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty test has been considered.

3.6 Equipment Modification

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

No modifications were installed by Commercial and Electrical Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 3.0 of this report are confirmed by:

Confirmed by:

*Leung Wai Leung, Tommy
Senior Manager
Intertek Testing Services Hong Kong Ltd.
Agent for Binatone Electronics International Ltd.*



Signature

February 19, 2009 Date

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EXHIBIT 4 MEASUREMENT RESULTS

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.0 **Measurement Results**

4.1 Antenna Requirement, FCC Rule 15.317:

EUT must meet the antenna requirement of FCC Rule 15.203.

- [x] EUT uses a permanently attached antenna which is considered sufficient to comply with the provisions of this rule. Please refer to internal photos.pdf for more details.
- [] EUT uses a unique antenna jack or electrical connector which is considered sufficient to comply with the provisions of this rule. Please refer to internal photos.pdf for more details.

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.2 Directional Gain of the Antenna, FCC Rule FCC 15.319(e):

The peak transmit power shall be reduced by the amount in dB that the maximum directional gain of the antenna exceeds 3 dBi.

The requirements are made in accordance with ANSI C63.17 sub-clause 4.3.1.

- ☒ [x] Manufacturer declares that the directional gain of the antenna is less than or equal to 3dBi. No peak transmit power reduction is required.
- ☐ [] Manufacturer declares that the directional gain of the antenna is greater than 3dBi. The peak transmit power shall be reduced by _____ dB.

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.3 Power Spectral Density, FCC Rule 15.319(d):

Power spectral density shall not exceed 3 mW (4.8dBm) in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz.

Measurements are made in accordance with ANSI C63.17 sub-clause 6.1.5. Test setup is shown in section 3.2 Figure 3.2.1.

Test Results:

I. Traffic Carrier - Base Unit

| Channel | Channel Frequency (MHz) | Measured Power Spectral Density (dBm/3kHz) | Limit (dBm/3 kHz) | Results |
|---------|-------------------------|--|-------------------|---------|
| Lowest | 1921.536 | -9.7 | 4.8 | Pass |
| Highest | 1928.448 | -11.3 | 4.8 | Pass |

II. Dummy Carrier - Base Unit

| Channel | Channel Frequency (MHz) | Measured Power Spectral Density (dBm/3kHz) | Limit (dBm/3 kHz) | Results |
|---------|-------------------------|--|-------------------|---------|
| Lowest | 1921.536 | -9.9 | 4.8 | Pass |
| Highest | 1928.448 | -11.5 | 4.8 | Pass |

III. Traffic Carrier - Handset

| Channel | Channel Frequency (MHz) | Measured Power Spectral Density (dBm/3kHz) | Limit (dBm/3 kHz) | Results |
|---------|-------------------------|--|-------------------|---------|
| Lowest | 1921.536 | -9.4 | 4.8 | Pass |
| Highest | 1928.448 | -9.1 | 4.8 | Pass |

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.3 Power Spectral Density, FCC Rule 15.319(d): - Continued

Please refer to the attached plots for more details:

Base Unit

Plot B3A: Lowest Channel Power Spectral Density (Traffic Carrier)
Plot B3B: Highest Channel Power Spectral Density (Traffic Carrier)
Plot B3C: Lowest Channel Power Spectral Density (Dummy Carrier)
Plot B3D: Highest Channel Power Spectral Density (Dummy Carrier)

Handset

Plot H3A: Lowest Channel Power Spectral Density (Traffic Carrier)
Plot H3B: Highest Channel Power Spectral Density (Traffic Carrier)

The plots of the power spectral density are saved as filename: psd.pdf

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.4 Unwanted Emission Inside the Sub-Band, FCC Rule 15.323(d):

Emissions inside the sub-band must comply with the following emission mask:

1. In the bands between $1B$ and $2B$ measured from the center of the emission bandwidth, emission shall be at least 30 dB below the permitted peak transmit power
2. In the bands between $2B$ and $3B$ measured from the center of the emission bandwidth, emission shall be at least 50 dB below the permitted peak transmit power
3. In the bands between $3B$ and the band edge, emission shall be at least 60 dB below the permitted peak transmit power

Where B = emission bandwidth in Hz

Measurements are made in accordance with ANSI C63.17 sub-clause 6.1.6.1. Test setup is shown in section 3.2 Figure 3.2.1.

Test Results:

I. Traffic Carrier - Base Unit

| Channel | Channel Frequency (MHz) | Results |
|---------|-------------------------|---------|
| Lowest | 1921.536 | Pass |
| Highest | 1928.448 | Pass |

II. Dummy Carrier - Base Unit

| Channel | Channel Frequency (MHz) | Results |
|---------|-------------------------|---------|
| Lowest | 1921.536 | Pass |
| Highest | 1928.448 | Pass |

III. Traffic Carrier - Handset

| Channel | Channel Frequency (MHz) | Results |
|---------|-------------------------|---------|
| Lowest | 1921.536 | Pass |
| Highest | 1928.448 | Pass |

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.4 Unwanted Emission Inside the Sub-Band, FCC Rule 15.323(d): - Continued

Please refer to the attached plots for more details:

Base Unit

Plot B4A: Lowest Channel Unwanted Emission Inside the Sub-Band (Traffic Carrier)

Plot B4B: Highest Channel Unwanted Emission Inside the Sub-Band (Traffic Carrier)

Plot B4C: Lowest Channel Unwanted Emission Inside the Sub-Band (Dummy Carrier)

Plot B4D: Highest Channel Unwanted Emission Inside the Sub-Band (Dummy Carrier)

Handset:

Plot H4A: Lowest Channel Unwanted Emission Inside the Sub-Band (Traffic Carrier)

Plot H4B: Highest Channel Unwanted Emission Inside the Sub-Band (Traffic Carrier)

The plots of the unwanted emission inside the sub-band are saved as filename:
inband.pdf

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.5 Emissions Outside the Sub-Band, FCC Rule 15.323(d):

Emissions outside the sub-band shall be attenuated below a reference power of 112 mW (20.5 dBm) as follows:

1. 30 dB between the band edge and 1.25 MHz above or below the band;
2. 50 dB between 1.25 and 2.5 MHz above or below the band; and
3. 60 dB at 2.5 MHz or greater above or below the band, or shall not exceed the limits of FCC Rule 15.209.

Example: Calculation of Limit for emissions between the band edge and 1.25 MHz (1920.000 – 1918.750 MHz)

The emissions shall not exceed the Limit: 20.5 dBm – 30 dB = -9.5 dBm

Measurements are made in accordance with ANSI C63.17 sub-clause 6.1.6.2. As EUT has non-detachable antenna(s), radiated emissions test method is used for out-of-band emissions tests. Emissions that are directly caused by digital circuits in the transmit path and transmitter portion are measured. Test setup and procedures are described in section 3.2 Figure 3.2.1.

Test Results:

Base Unit & Handset:

| Channel | Carrier Frequency (MHz) | Measured Band (MHz) | Limit (dBm) | Results |
|---------|-------------------------|---|-------------|---------|
| Lowest | 1921.536 | 1920.000 - 1918.750 | -9.5 | Pass |
| | | 1918.750 - 1917.500 | -29.5 | Pass |
| | | 0.009 - 1917.500 & 1932.500 - 19300.000 | -39.5 | Pass |
| Highest | 1928.448 | 1930.000 - 1931.250 | -9.5 | Pass |
| | | 1931.250 - 1932.500 | -29.5 | Pass |
| | | 0.009 - 1917.500 & 1932.500 - 19300.000 | -39.5 | Pass |

Please refer to the section 4.5.1 to 4.5.3 for more details.

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009

Model: S802

Mode: Transmission

4.5.1 Radiated Emissions Configuration Photographs:

Worst Case Radiated Emission
at

Base Unit: 3843.072 MHz

Handset: 3856.896 MHz

The worst case radiated emission configuration photographs are saved as filename:
config photos.pdf

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Transmission

4.5.2 Radiated Emissions Data:

Data are 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. All measurements were performed with peak detection unless otherwise specified.

The data in tables 1-6 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Base Unit: Passed by 6.8 dB margin

Handset: Passed by 7.3 dB margin

TEST ENGINEER:



Signature

Ken Sit, Assistant Manager
Typed/Printed Name

February 19, 2009
Date

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Transmission

Table 1, Base Unit

Radiated Emissions Data
Pursuant To FCC Part 15 Section 15.323 (d) Emissions Requirements

Lowest Channel:

| Polarization | Frequency (MHz) | Measured Power (dBm) | Power Limit (dBm) | Margin (dB) |
|--------------|-----------------|----------------------|-------------------|-------------|
| V | 1919.608 | -46.3 | -9.5 | -36.8 |
| V | 1918.604 | -50.4 | -29.5 | -20.9 |
| V | 1916.008 | -51.8 | -39.5 | -12.3 |
| H | 3843.072 | -46.3 | -39.5 | -6.8 |
| H | 5764.608 | -48.8 | -39.5 | -9.3 |
| H | 7686.144 | -48.0 | -39.5 | -8.5 |
| H | 9607.680 | -48.3 | -39.5 | -8.8 |
| H | 11529.216 | -50.4 | -39.5 | -10.9 |

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.

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Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Transmission

Table 2, Base Unit

Radiated Emissions Data
Pursuant To FCC Part 15 Section 15.323 (d) Emissions Requirements

Highest Channel:

| Polarization | Frequency (MHz) | Measured Power (dBm) | Power Limit (dBm) | Margin (dB) |
|--------------|-----------------|----------------------|-------------------|-------------|
| V | 1930.651 | -46.7 | -9.5 | -37.2 |
| V | 1931.362 | -51.0 | -29.5 | -21.5 |
| V | 1932.674 | -52.1 | -39.5 | -12.6 |
| H | 3856.896 | -46.6 | -39.5 | -7.1 |
| H | 5785.344 | -49.3 | -39.5 | -9.8 |
| H | 7713.792 | -49.0 | -39.5 | -9.5 |
| H | 9642.240 | -48.4 | -39.5 | -8.9 |
| H | 11570.688 | -51.0 | -39.5 | -11.5 |

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Talk

Table 3, Base Unit

Radiated Emissions Data
Pursuant To FCC Part 15 Section 15.323 (d) Emissions Requirements

| Polarization | Frequency (MHz) | Measured Power (dBm) | Power Limit (dBm) | Margin (dB) |
|--------------|--------------------|----------------------------|-------------------------|----------------|
| V | 41.096 | -61.6 | -39.5 | -22.1 |
| V | 55.986 | -62.0 | -39.5 | -22.5 |
| H | 69.724 | -62.4 | -39.5 | -22.9 |
| H | 108.259 | -62.6 | -39.5 | -23.1 |
| H | 136.785 | -63.1 | -39.5 | -23.6 |
| H | 162.629 | -63.3 | -39.5 | -23.8 |

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Transmission

Table 4, Handset

Radiated Emissions Data
Pursuant To FCC Part 15 Section 15.323 (d) Emissions Requirements

Lowest Channel:

| Polarization | Frequency (MHz) | Measured Power (dBm) | Power Limit (dBm) | Margin (dB) |
|--------------|-----------------|----------------------|-------------------|-------------|
| V | 1919.609 | -46.9 | -9.5 | -37.4 |
| V | 1918.624 | -50.7 | -29.5 | -21.2 |
| V | 1916.008 | -51.8 | -39.5 | -12.3 |
| H | 3843.072 | -46.9 | -39.5 | -7.4 |
| H | 5764.608 | -48.2 | -39.5 | -8.7 |
| H | 7686.144 | -48.4 | -39.5 | -8.9 |
| H | 9607.680 | -50.8 | -39.5 | -11.3 |
| H | 11529.216 | -51.4 | -39.5 | -11.9 |

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Transmission

Table 5, Handset

Radiated Emissions Data
Pursuant To FCC Part 15 Section 15.323 (d) Emissions Requirements

Highest Channel:

| Polarization | Frequency (MHz) | Measured Power (dBm) | Power Limit (dBm) | Margin (dB) |
|--------------|-----------------|----------------------|-------------------|-------------|
| V | 1930.651 | -46.8 | -9.5 | -37.3 |
| V | 1931.360 | -50.6 | -29.5 | -21.1 |
| V | 1932.694 | -52.0 | -39.5 | -12.5 |
| H | 3856.896 | -46.8 | -39.5 | -7.3 |
| H | 5785.344 | -48.0 | -39.5 | -8.5 |
| H | 7713.792 | -48.3 | -39.5 | -8.8 |
| H | 9642.240 | -50.3 | -39.5 | -10.8 |
| H | 11570.688 | -51.0 | -39.5 | -11.5 |

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd.

Date of Test: January 14-22, 2009

Model: S802

Mode: Talk

Table 6, Handset

Radiated Emissions Data
Pursuant To FCC Part 15 Section 15.323 (d) Emissions Requirements

| Polarization | Frequency (MHz) | Measured Power (dBm) | Power Limit (dBm) | Margin (dB) |
|--------------|-----------------|----------------------|-------------------|-------------|
| V | 41.096 | -61.4 | -39.5 | -21.9 |
| V | 55.986 | -61.3 | -39.5 | -21.8 |
| H | 69.726 | -61.6 | -39.5 | -22.1 |
| H | 108.256 | -62.8 | -39.5 | -23.3 |
| H | 136.785 | -62.9 | -39.5 | -23.4 |
| H | 162.628 | -63.4 | -39.5 | -23.9 |

NOTES:

1. Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd.
Model: S802

Date of Test: January 14-22, 2009

4.5.3 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

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

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
- PD = Pulse Desensitization in dB
- AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

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

Example

Assume a receiver reading of 62.0 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 29.0 dB is subtracted. The pulse desensitization factor of the spectrum analyzer is 0.0 dB, and the resultant average factor is -10.0 dB. The net field strength for comparison to the appropriate emission limit is 32.0 dB μ V/m. This value in dB μ V/m is converted to its corresponding level in μ V/m.

RA = 62.0 dB μ V
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0.0 dB
AV = -10 dB

$$FS = 62.0 + 7.4 + 1.6 - 29.0 + 0.0 + (-10.0) = 32.0 \text{ dB}\mu\text{V/m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm } [(32.0 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.6 AC Power Lines Conducted Emissions from Transmitter portion of EUT, FCC Rule 15.315:

The AC power lines conducted emission shall not exceed the limits of FCC Rule 15.207.

Measurements are made in accordance with ANSI C63.4 sub-clause 7. Emissions that are directly caused by digital circuits in the transmit path and transmitter portion are measured.

☐ Not applicable – EUT is only powered by battery for operation.

☒ EUT connects to AC power lines. Emission Data are listed in following pages.
Please refer to the section 4.6.1 to 4.6.2 for more details.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009

Model: S802

Mode: Talk with Base Charging

4.6.1 AC Power Lines Conducted Emissions Configuration Photographs:

Worst Case AC Power Line Conducted Emission
at

0.663 MHz

The worst case AC power Line conducted emission configuration photographs are saved as filename: config photos.pdf

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802
Mode: Talk with Base Charging

4.6.2 AC Power Line Conducted Emissions Data:

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

Judgment

Passed by 6.95 dB margin compare with the quasi-peak limit

The worst case AC power line conducted emission data are saved as filename:
conduct.pdf

TEST ENGINEER:



Signature

Ken Sit, Assistant Manager
Typed/Printed Name

February 19, 2009
Date

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.7 Radio Frequency Radiation Exposure, FCC Rule 15.319(i):

EUT is subject to the radio frequency exposure requirements specified in FCC Rule §§ 1.1307(b), 2.1091 and 2.1093. It shall be considered to operate in a “general population / uncontrolled” environment.

- [x] Handset Unit: EUT was evaluated for Specific Absorption Rate (SAR) evaluation compliance according to OET Bulletin 65, Supplement C (Edition 01-01). It is in compliance with the SAR evaluation requirements. The caution statement specified in the user manual. A SAR test report was submitted at the same time and saved as SAR Report.pdf

- [x] Base Unit: EUT was evaluated for Maximum Permissible Exposure (MPE) evaluation compliance according to OET Bulletin 65, Supplement C (Edition 01-01). The evaluation calculation results are saved as filename: RF exposure info.pdf.

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.8 Frame Period and Jitter, FCC Rule 15.323(e):

The frame period (a set of consecutive time slots in which the position of each time slot can be identified by reference to a synchronizing source) of EUT operating in these sub-bands shall be 20 ms or 10 ms/X where X is a positive whole number.

The jitter (time-related, abrupt, spurious variations in the duration of the frame interval) introduced at the two ends of such a communication link shall not exceed 25 μ s for any two consecutive transmissions. Transmissions shall be continuous in every time and spectrum window during the frame period defined for EUT.

Measurements are made in accordance with ANSI C63.17 sub-clause 6.2.3. Test setup is shown in section 3.2 Figure 3.2.1. A spectrum analyzer measures the time duration between the rising edges of two consecutive frames. The measurements are taken over 100,000 frames. These measurement values are used to compute mean value and the difference between any two consecutive frame periods. The mean value is the frame period.

Test Results:

I. Jitter - Handset

| Measured Maximum Jitter (μ s) | Limit (μ s) | Results |
|------------------------------------|------------------|---------|
| -1.1580 | ± 25 | Pass |

INTERTEK TESTING SERVICES

Company: Binatone Electronics International Ltd. Date of Test: January 14-22, 2009
Model: S802

4.9 Monitoring Antenna, FCC Rule 15.323(c)(8):

The monitoring system shall use the same antenna used for transmission, or an antenna that yields equivalent reception at that location.

- ☒ EUT uses the same antenna used for transmission and monitoring that is in compliance meet above provision.
- ☐ EUT uses difference antenna used for transmission and monitoring. It must be verified that the monitoring antenna provides coverage equivalent to that of the transmitting antenna. Measurements are made in accordance with ANSI C63.17 sub-clause 4.