

**Fujikon Industrial Co., Ltd.**

Application  
For  
Certification  
**(FCC ID: TTC-BHP90VOIP)**

Multimedia Headset

0718607  
TC/el  
October 23, 2007

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## INTERTEK TESTING SERVICES

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# INTERTEK TESTING SERVICES

## MEASUREMENT / TECHNICAL REPORT

Fujikon Industrial Co., Ltd. – MODEL: Hi-Tex BHP-90VOIP

FCC ID: TTC-BHP90VOIP

October 23, 2007

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

Equipment Type: Computer Peripheral (example: computer, printer, modem, etc.)

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 C for intentional radiator – the new 47 CFR [05-04-07 Edition] provision.

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### List of attached file

Exhibit Type	File Description	Filename
Test Report	Test Report	report.pdf
Operation Description	Technical Description	descri.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
Test Report	Conducted Emission Test Result	conducted.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label / Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf

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## **EXHIBIT 1**

### **GENERAL DESCRIPTION**

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### 1.0 **General Description**

#### 1.1 Product Description

The Equipment Under Test (EUT) is an innovative Multimedia Headsets. The EUT is connected to USB port of computer and the driver will be automatically installed. The EUT can be operated when connecting to computer. This stereo headset can be operated with "Skype" control function with the in-line control box.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

#### 1.2 Related Submittal(s) Grants

This is a single application for certification of a computer peripheral.

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### 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Radiated Emission measurement was performed in Open Area Test Sites and Conducted Emission was performed in Shield Room. 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.

### 1.4 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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### **EXHIBIT 2**

### **SYSTEM TEST CONFIGURATION**

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### **2.0 System Test Configuration**

#### **2.1 Justification**

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003). The typical testing mode was selected.

The EUT is connected to USB port of computer.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

#### **2.2 EUT Exercising Software**

The driver of the headset was installed automatically when connecting the headset into the computer USB port. In addition, the software “Skype” was installed for Skype control function.

#### **2.3 Special Accessories**

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 Fujikon Industrial Co., Ltd. will be incorporated in each production model sold / leased in the United States.

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

### 2.5 Measurement Uncertainty

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

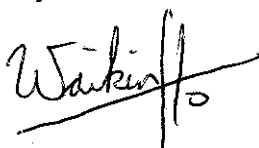
### 2.6 Support Equipment List and Description

1. HP Computer – Product No.: D530S, Serial No.: CNG4110FN
2. HP Keyboard – Product No.: SK-2502, Serial No.: M981135799
3. Philips LCD Monitor – Product No.: 150B4CG, Serial No.: CX000409301774
4. HP Mouse – Product No.: M-S34, Serial No.: LZC84609205
5. HP Printer – Product No.: C2642A, Serial No.: SG6121702C
6. Hayes Modem – Product No.: 6800CN, Serial No.: A00900153317
7. HP Computer – Product No.: DC5100, Serial No.: CNG611064K
8. Samsung LCD Monitor – Product No.: 152N 15" LCD, Serial No.: NB15HMEWA08791
9. HP Keyboard – Product No.: SK-2502C, Serial No.: M000626313
10. HP Mouse – Product No.: M-S34, Serial No.: LZC01306529
11. HP Printer – Product No.: C6431D, Serial No.: CN23B 680ZP
12. Genius Modem – Product No.: GM56EX, Serial No.: ZT5505000355  
(Provided by Intertek)

All the items listed under section 2.0 of this report are

*Confirmed by:*

*Ho Wai Kin, Ben  
Supervisor  
Intertek Testing Services Hong Kong Ltd.  
Agent for Fujikon Industrial Co., Ltd.*



\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
October 23, 2007

\_\_\_\_\_  
*Date*

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### **EXHIBIT 3**

### **EMISSION RESULTS**

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### 3.0 **Emission Results**

Data included were result from worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs, data tables and graphical representations 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 below:

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

where FS = Field Strength in dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ 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 $\mu$ V/m

RR = RA – AG in dB $\mu$ V

LF = CF + AF in dB

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### 3.1 Field Strength Calculation (cont'd)

#### Example

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

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

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

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

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

$$FS = RR + LF$$

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

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

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

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

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### 3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at  
192.018MHz and 288.030MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos.pdf.



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### 3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 4.9dB margin

#### **TEST PERSONNEL:**



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*Signature*

Terry C. H. Chan, Compliance Engineer  
*Typed / Printed Name*

October 23, 2007  
*Date*

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Company: Fujikon Industrial Co., Ltd.  
Model: Hi-Tex BHP-90VOIP  
Worst Case Operating Mode: Operating

Date of Test: August 31, 2007

**Table 1**

### **Radiated Emissions**

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp (dB)	Antenna factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	36.001	37.4	16	10	31.4	40.0	-8.6
V	48.005	37.6	16	11	32.6	40.0	-7.4
V	60.007	39.4	16	10	33.4	40.0	-6.6
H	120.014	39.1	16	14	37.1	43.5	-6.4
H	144.016	38.5	16	14	36.5	43.5	-7.0
H	192.018	38.6	16	16	38.6	43.5	-4.9
H	216.020	33.2	16	17	34.2	46.0	-11.8
H	240.024	30.9	16	19	33.9	46.0	-12.1
H	288.030	35.1	16	22	41.1	46.0	-4.9
H	312.035	31.7	16	23	38.7	46.0	-7.3
H	360.037	28.0	16	24	36.0	46.0	-10.0
H	480.041	25.4	16	26	35.4	46.0	-10.6

- NOTES: 1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances 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 is used for the emission over 1000MHz.

Test Engineer: Terry C. H. Chan

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### 3.4 Conducted Emission Configuration Photograph

Worst Case Line-Conducted Emission  
at  
23.366MHz

For electronic filing, the worst case line-conducted configuration photographs are saved with filename: conducted photos.pdf.

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### 3.5 Conducted Emission Data

For electronic filing, the graph and data table of conducted emission are saved with filename: conducted.pdf. The data table lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 6.23dB margin

#### **TEST PERSONNEL:**



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*Signature*

Terry C. H. Chan, Compliance Engineer  
*Typed / Printed Name*

October 23, 2007  
*Date*

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### **EXHIBIT 4**

### **EQUIPMENT PHOTOGRAPHS**

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### 4.0 **Equipment Photographs**

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

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### **EXHIBIT 5**

### **PRODUCT LABELLING**

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### 5.0 **Product Labelling**

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



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### **EXHIBIT 6**

### **TECHNICAL SPECIFICATIONS**

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### 6.0 **Technical Specifications**

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

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### **EXHIBIT 7**

### **INSTRUCTION MANUAL**

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### 7.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

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