



香港標準及檢定中心  
The Hong Kong Standards and Testing Centre Ltd  
Date : August 31, 1998

FCC ID: N24WT55416

TECHNICAL REPORT  
=====

- 1) Full Name of the Manufacturer of the Device  
VAST GLORY ELECTRONIC & PLASTIC FACTORY
- 2) Mailing Address of the Manufacturer of the Device  
Dong Guan Zhang Mu Tou  
Zhen Bao Shan Gong Ye Qu  
Di Yi Zhuang  
CHINA
- 3) Trade Name  
N/A
- 4) Model Number  
BW005
- 5) Additional Model Numbers under which the Device will be Marketed  
N/A
- 6) Copy of the Operating Instruction Furnished to the User  
As enclosed

\*\*\*\*\*





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Date: 1998-08-12  
No.: HM1135/504

## TEST REPORT

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**APPLICANT:** (Code: 021675)

LEAVES INDUSTRIES LTD.

Unit 1006, 10/FL, Eastern Centre, 1065 King's Road, Hong Kong.

**DATE OF SAMPLES RECEIVED:** 1998.07.07

**DATE OF TESTING:** 1998.08.13

### DESCRIPTION OF SAMPLE(S):

A sample of product said to be:

Product: DC 49MHz Duplex Walkie Talkie Headset  
Manufacturer: Vast Glory Electronic & Plastic Factory  
Model Number: BW005  
Band Name: N/A  
Rating: 3.0Vd.c. ("AA" size battery  $\times$  2)  
Origin: China

### INVESTIGATIONS REQUESTED:

Measurement to the relevant clauses of F.C.C. Rules and Regulations Part 15 Subpart B - Unintentional Radiator and Subpart C - Intentional Radiator.

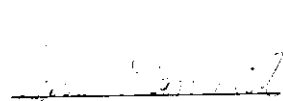
**RESULT/ REMARK:** Please see attached sheet(s).

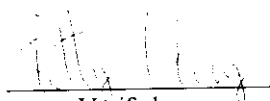
### CONCLUSION:

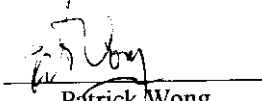
From the measurement data obtained, the tested sample was considered to have COMPLIED after modification with the clause 15.109(a) and ANSI C63.4-1992 Section 12.1.1.1-2. for Receiver Section and with the clause 15.235 for Transmitter Section of Federal Communications Commission Rules and Regulations Part 15.

**TEST EQUIPMENT AUDIT:** Please see Appendix A

**MODIFICATION:** Change L1 to 2.2 $\mu$ H.

  
Testing Engineer

  
Verify by

  
Patrick Wong  
for Managing Director

#### Conditions in issuance of Test Report

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### TEST SUMMARY

#### \*\*\*UNINTENTIONAL RADIATOR\*\*\*

- |     |  |                |
|-----|--|----------------|
| (A) | <u>Measurement of Radiated Emissions</u> ..... | Satisfactory   |
| (B) | <u>Line Conducted Voltage Test</u> .....       | Not applicable |

#### \*\*\* INTENTIONAL RADIATOR \*\*\*

- |     |  |                |
|-----|--|----------------|
| (1) | <u>Measurement of Emission of RF energy on the carrier frequency</u> ..... | Satisfactory   |
|     | <u>Measurement of the out-of band emissions including harmonics</u> .....  | Satisfactory   |
| (2) | <u>Measurement of Emission Within Band Edges</u> .....                     | Satisfactory   |
| (3) | <u>Measurement of Line-Conducted Voltage onto AC Power Line</u> .....      | Not applicable |

### TEST DATA

Please refer to the attached result sheets.



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\*\*\*UNINTENTIONAL RADIATOR\*\*\*

\*\* RECEIVER SECTION \*\*

### (A) Measurement of Radiated Interference

TEST REFERENCE: FCC Rules Part 15 Subpart B section 15.109(a)

TEST CONDITION : Normal

TEST DATE : 1998.08.13

Freq. to which tuned	Freq of the emission	Polarization H-V	Meter reading (at 3m)		Antenna factor	Field Strength (at 3m)		FCC limit @
MHz	MHz		dB( $\mu$ V)	dB		dB( $\mu$ V/m)	$\mu$ V/m	$\mu$ V/m
49.860	49.9	<	1.0	+	15.0	< 16.0	< 6	100
	99.7	<	1.0	+	12.2	< 13.2	< 5	150
	149.6	<	1.0	+	9.8	< 10.8	< 3	150
	199.4	<	1.0	+	11.5	< 12.5	< 4	150
	249.3	<	1.0	+	15.9	< 16.9	< 7	200
	299.1	<	1.0	+	17.0	< 18.0	< 8	200
	349.0	<	1.0	+	17.2	< 18.2	< 8	200
	398.8	<	1.0	+	18.8	< 19.8	< 10	200
	448.7	<	1.0	+	19.7	< 20.7	< 11	200
	498.6	<	1.0	+	20.6	< 21.6	< 12	200
	548.4	<	1.0	+	22.2	< 23.2	< 14	200
	598.3	<	1.0	+	23.4	< 24.4	< 17	200
	648.1	<	1.0	+	23.5	< 24.5	< 17	200
	698.0	<	1.0	+	25.0	< 26.0	< 20	200
	747.8	<	1.0	+	26.2	< 27.2	< 25	200
	797.7	<	1.0	+	27.2	< 28.2	< 25	200
	847.5	<	1.0	+	27.2	< 28.2	< 25	200
	897.5	<	1.0	+	27.2	< 28.2	< 25	200
	947.2	<	1.0	+	27.8	< 28.8	< 27	200
	997.1	<	1.0	+	28.5	< 29.5	< 27	500

### =====SUMMARY=====

All data is within limits

Broad-band Antennas were used and both polarizations of emissions were measured

Polarizations at highest reading indicated as:

H -- Horizontal                      V -- Vertical



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#### NOTES FOR THE RADIATION MEASUREMENT

(1) Test site facility:

Open field test site located at Taipo (Hong Kong) with a metal ground plane on filed with the FCC pursuant to section 2.948 of the FCC Rules.

(2) Distance between the ET and measuring antenna:

3 meters.

(3) Measuring instrumentation's:

CISPR Quasi-peak type field strength meter (25 MHz - 1000 MHz.). 6 dB bandwidth set at 120 KHz. Also, peak level of the fundamental emissions was measured in order to determine compliance with the 20dB peak to average limit specified in Section 15.35(b) of the FCC new Rules.

(4) Measuring antenna:

Broad band antenna for the frequency range 25-1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable. included in the Antenna Factor for measurement data. The antenna are capable of measuring both horizontal and vertical polarizations.

(5) Frequency range scanned:

The frequency range from 25 MHz to 1000 MHz had been searched. Readings of the highest emissions relating to the limit were reported as above.

(6) Arrangement of EUT:

During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.

(7) Measuring Procedure:

In accordance with the relevant clauses of the FCC Rules Part 15 section 15.109(a) and ANSI C63.4:1992 section 12.1.1.1-2.

(8) Measuring Uncertainty:

The calculated uncertainty for measurement performed at 3M test distance are:-  
30MHz to 200MHz =  $\pm 3.7\text{dB}$ , 200MHz to 1000MHz =  $+ 3.0\text{dB}/-2.7\text{dB}$ .

Remark: Purpose of this test is to provide the Applicant with the necessary test data of their device for the submission to FCC with application for Equipment Authorization under FCC's Equipment Authorization Program. This test itself is not an Approval Test.



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\*\*\* INTENTIONAL RADIATOR \*\*\*

### (1) Measurement of Radiated Interference

TEST REFERENCE: FCC Rules Part 15 Subpart Section 15.235(49.82-49.90 MHz)

TEST CONDITION : Normal

TEST DATE : 1998.08.13

Emission of RF energy on the carrier frequency -- 49.857 MHz  
(PEAK VALUE)

Emission Frequency	Meter Reading	Polarization	Antenna Factor	Field Strength (at 3m)		FCC Limit
MHz	dB( $\mu$ V)	H-V	dB	dB( $\mu$ V/m)	$\mu$ V/m	$\mu$ V/m
49.90	46.2	V +	15.0	61.2	1148.2	10000

Emission of RF energy on the carrier frequency -- 49.857 MHz  
(AVERAGE VALUE)

Emission Frequency	Meter Reading	Polarization	Antenna Factor	Field Strength (at 3m)		FCC Limit
MHz	dB( $\mu$ V)	H-V	dB	dB( $\mu$ V/m)	$\mu$ V/m	$\mu$ V/m
49.90	45.8	V +	15.0	59.8	977.2	100000

... to be continued



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\*\*\* INTENTIONAL RADIATOR \*\*\*

### (1) Measurement of Radiated Interference . . Continued . .

TEST REFERENCE: FCC Rules Part 15 Section 15.235(49.82-49.90 MHz)

TEST CONDITION : Normal

TEST DATE : 1998.08.13

### The out-of-band emissions, including harmonics (25-1000 MHz) (CISPR VALUE)

Emission Frequency MHz	Meter Reading dB(μV)	Polarization H-V	dB	Antenna Factor dB(μV/m)	Field Strength (at 3m) μV/m		FCC Limit
99.7	17.4	V	+	12.2	29.6	30.2	150
149.6	18.1	V	+	9.8	27.9	24.8	150
199.4	19.3	H	+	11.5	30.8	34.7	150
249.3	14.4	H	+	15.9	30.3	32.7	200
299.1	15.2	V	+	17.0	32.2	40.7	200
348.8	18.5	H	+	17.2	35.7	61.0	200
398.6	11.4	H	+	18.8	30.2	32.4	200
448.5	< 1.0		+	19.7	< 20.7	< 10.8	200
498.3	< 1.0		+	20.6	< 21.6	< 12.0	200
543.1	< 1.0		+	22.2	< 23.2	< 14.5	200
598.1	< 1.0		+	23.4	< 24.4	< 16.6	200
647.8	< 1.0		+	23.5	< 24.5	< 16.8	200
697.4	< 1.0		+	25.0	< 26.0	< 20.0	200
747.8	< 1.0		+	26.2	< 27.2	< 22.9	200
797.7	< 1.0		+	27.2	< 28.2	< 25.7	200
847.5	< 1.0		+	27.2	< 28.2	< 25.7	200
897.4	< 1.0		+	27.2	< 28.2	< 25.7	200
947.2	< 1.0		+	27.8	< 28.8	< 27.5	200
997.1	< 1.0		+	28.5	< 29.5	< 29.9	500

### =====SUMMARY=====

data is within limits

Broad-band Antennas were used and both polarizations of emissions were measured.  
polarizations at highest reading indicated as:

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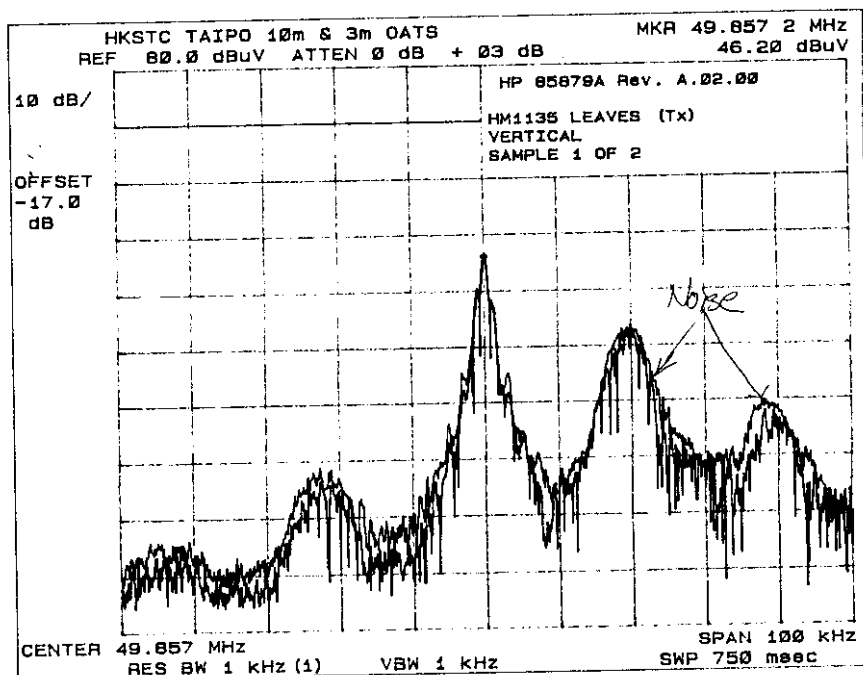
\*\*\* INTENTIONAL RADIATOR \*\*\*

### (2) Measurement of Emissions Within Band Edges.

TEST REFERENCE: FCC Rules Part 15 section 15.235(49.82-49.90 MHz)

TEST CONDITION: Normal

TEST DATE : 1998.08.13



### RESULTS AND NOTES

L: FCC Lower Band Edge.....-> 49.820MHz  
H: FCC Higher Band Edge.....-> 49.900MHz  
C: Unmodulated carrier at frequency.....-> 49.857MHz  
D: No. of dB from unmodulated carrier.....-> 46.20dB

### SPECTRUM ANALYZER SETTINGS

Resolution bandwidth : 1.0KHz

Frequency span : 10.0KHz/div

No. of dB/div : 10.0dB/div

### FCC Limit

Minimum No. of dB from unmodulated carrier required : 26.0dB

### SUMMARY

All data is within limits





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### NOTES FOR THE RADIATION MEASUREMENT

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Open field test site located at Taipo (Hong Kong) with a metal ground plane on filed with the FCC pursuant to section 2.948 of the FCC rules.

(2) Distance between the EUT and measuring antenna:

3 meters.

(3) Measuring instrumentations:

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The frequency range from 25 MHz to 1000 MHz had been searched. Readings of the highest emissions relating to the limit were reported as above.

(6) Arrangement of EUT:

During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.

(7) Measuring Procedure:

In accordance with the relevant clauses of the FCC Rules Part 15 section 15.235.

(8) Measuring Uncertainty:

The calculated uncertainty for measurement performed at 3M test distance are:-  
30MHz to 200MHz =  $\pm 3.7\text{dB}$ , 200MHz to 1000MHz =  $+ 3.0\text{dB}/-2.7\text{dB}$ .

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\*\*\*\*\*End of Document\*\*\*\*\*



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## APPENDIX A

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### TEST EQUIPMENT AUDIT

#### Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM007	SPECTRUM ANALYZER	HP	HP85660B	3144A21192	29/05/98
EM008	SPECTRUM ANALYZER DISPLAY	HP	HP85662A	3144A20514	29/05/98
EM009	QUASI PEAK ADAPTOR	HP	HP85650A	3303A01702	29/05/98
EM010	RF PRESELECTOR	HP	HP85685A	3221A01410	29/05/98
EM011	ATTENUATOR/SWITCH	HP	HP11713A	2508A10595	29/05/98
EM012	PRE-AMPLIFIER	HP	HP8449B	3008A00262	29/05/98
EM013	CONTROLLER (COMPUTER), COLOR MONITOR, KEYBOARD & MOUSE FLOPPY DRIVE	HP HP HP	HP9000 HPA1097C HP9133L	6226A60314 3151J39517 2623A02468	CM
EM017	ANTENNA	ARA INC.	LPB-2513/A	1069	31/12/97
EM072	SIGNAL GENERATOR	HP	8640B	1948A11892	30/03/98
EM083	HKSTC OPEN AREA TEST SITE	HKSTC	N/A	N/A	16/02/98

#### ABBREVIATIONS:

CM = Corrective Maintenance

N/A = Not Applicable or Not Available

TBD = To Be Determined