

RF EXPOSURE EVALUATION REPORT

Issued to

GN Netcom Inc

For

Bluetooth Headset (Mono/Stereo)

Model Name : HSC018W
Trade Name : N/A
Brand Name : Jabra
FCC ID : BCE-HSC018W
Standard : 47CFR 2.1093
KDB 447498 D01 General RF
Exposure Guidance v05r02
Test date : 2014-7-21
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by

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Change History		
Issue	Date	Reason for change
1.0	July 29, 2014	First edition

1. TESTING LABORATORY

1.1. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China 518101
FCC Registration Number:	695796

1.2. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

2. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

2.1. Identification of Applicant

Company Name:	GN Netcom Inc
Address:	77 Northeastern Blvd. Nashua N.H. 3062 USA

2.2. Identification of Manufacturer

Company Name:	GN Netcom Inc
Address:	Lautrupbjerg7, DK-2750 Ballerup, Denmark

2.3. Equipment Under Test (EUT)

Model Name:	HSC018W (Sub-model Name: EVOLVE 65 MS Stereo, EVOLVE 65 UC Stereo, EVOLVE 65 MS Mono, EVOLVE 65 UC Mono)
Trade Name:	N/A
Brand Name:	Jabra
Hardware Version:	27-01557-E, 27-01560-C
Software Version:	1-9-0
Frequency Bands:	Bluetooth: 2402-2480MHz;
Modulation Mode:	GFSK/ $\pi/4$ -DQPSK/8-DPSK;
Antenna type:	Fixed Internal Antenna
Development Stage:	Identical prototype
Battery Model:	AHB472625PLT
Battery specification:	260mAh3.7V

2.3.1. Photographs of the EUT

1. EUT front view



2. EUT rear view



2.3.2. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	27-01557-E, 27-01560-C	1-9-0

2.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	47 CFR§2.1093	Radiofrequency Radiation Exposure Evaluation: portable devices
2	KDB 447498 D01v05r02	General RF Exposure Guidance

3. DEVICE CATEGORY AND RF EXPOSURE LIMIT

Per user manual, this device is a Bluetooth Headset (Mono/Stereo). Based on 47CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47CFR 2.1093(b)

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

47CFR 2.1093(d) (2)

Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

4. MEASUREMENT OF CONDUCTED PEAK OUTPUT POWER.

1. Bluetooth average output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			GFSK	$\pi/4$ -DQPSK	8-DPSK
BT	0	2402	7.06	3.55	3.64
	38	2441	9.06	6.47	6.55
	79	2480	8.55	6.51	6.52

5. RF EXPOSURE EVALUATION

The headset only incorporates a Bluetooth transmitter, so standalone SAR evaluation is required for Bluetooth and simultaneous SAR is not required.

Standalone transmission SAR evaluation

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation

Distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$

The maximum tune-up limit power is **8.913mW @ 2.441GHz**

When Bluetooth Headset (Mono/Stereo) is worn on the ear, BT antenna spacing 15mm from ear, so use **15mm** as the most conservative minimum test separation distance,

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] = \mathbf{0.928} \leq 3.0$$

So SAR evaluation is not required for this headphone.