



Shenzhen Lanya Electronic Co.,Ltd

Address: 3F, No.6 Building, LiJinCheng Industrial Park, East Industrial Road, LongHua Town, ShenZhen City, China.

Product Specification

Product name: Bluetooth Headset

Model NO.: BH703

Customer Approval	
Check and sign here, date	

Manufacturer		
content	Signature	Date
Prepared by	李玉怀	2013-02-21
Reviewed by		
Approved by		



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History of revision:



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1. Product introduction.

BH703 is a cost-effective bluetooth headset, it is light, comfortable to wear, clear in calls and far communication distance.

2. Design

Outside drawing:



Product color and silkscreen in accordance with the prototype.

3. Basic Specifications



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Primary features	
Product name	Bluetooth headset
Model NO.	BH703
Pairing name	According to the order
Design style	Small size, light weight, stylish design, Ergonomic ear hook design comfortable to wear.
Bluetooth version	2.4GHz Bluetooth Specification V3.0+EDR
Operation range	10 meters in open space
Button design	Multi-function button*1, VOL+, VOL-
Dimensions	53.6(L) x 15.5(W) x 9.2 (T) mm
Weight(Bare device)	8g
Battery	80mAh, 3.7V, Lithium polymer battery 401030
Talk time	>7hours
Standby time	>250hours
Charge time	<2 hours
Accessories	User Manual*1 Earhook*1 USB charging cable*1

Hardware specifications definitions	
Solution platform	BC6130
Transmit power	Class 2, 4 dBm
Reception sensitivity	-88dbm(typical)
Working band	2.4G ISM band, 2.402-2.480GHz
Modulation system	GFSK, π/4 DQPSK, 8DPSK
LED	Red LED*1 Blue LED*1
Memory	64 kbit EEPROM
Charging port	Micro USB
Antenna	Blult-in PCB antenna
Speaker	32± 15% ohm, 5mW, Max10mW
Microphone	4015 omni-directional -42±2dB
Battery life	Cycle times >300 times
Operating temperature	-10 — +50 °C
Storage temperature	-20 — 60 °C

Software specification definition	
Bluetooth headset protocol software version	V1.1
Bluetooth hands-free protocol software version	V1.5

Mechanical operation definition	
Multi-function button(MFB)	Pressure force 220gf±80gf ; Route 0.2mm±0.1mm
Button life	>50,000 times
Charging terminal plugging and connecting force	400gf±200gf



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Charging terminal plugging and connecting life	>1000 次
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4. User interface 、 Menu definition

Operation and user interface definition						
category function	Preoperative state	MFB button	Volume+	Volume-	LED description	Comments
Turn On	Power off state	Long press for 3S			Blue LED flashes 3 times	There is a prompt tone
Turn Off	Starting up connecting or disconnecting state	long press for 2S			Red LED flashes 2 times	There is a promote tone
Pairing mode	Power off state	long press for 7S			The red and blue lights flash alternately	There is a promote tone
Answer calls	A mobile phone rings when there is an incoming call	Short press			Blue LED flashes 2 times every 5 seconds	
Hang up	In conversation	Short press				
VOL+	In conversation	---	Short press		----- ---	there is a prompt tone when meeting with the maximum value
VOL-	In conversation	---		Short press	----- ---	there is a prompt tone when meeting with the minimum value
Voice dialling	Connecting state	Double-click			----- ---	There is a prompt tone
Refuse receiving calls	A mobile phone rings when there is an incoming call	long press for 3S			----- ---	There is a promote tone
Switch voice	In conversation	long press for 3S			----- ---	There is a promote tone
Last number redial	Connecting state	---	Double click		----- ---	There is a promote tone
Mic mute	In conversation	---		Long press for	----- ---	



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				3S		
Delete records of pairing devices	— —	— —			— —	
Multi-point call switch	There is an incoming call or in conversation	— —	Long press for 3S		— —	When the first phone during a call, the second has an incoming call, long press the VOL+ for 3S to answer the call, at the same time hold the the first phone call, then long press the VOL+ for 3 seconds can switch calls between two phones, short press the MFB can end the present call, at the same time connect the second hold phone (some phone will ask whether need to connect), press the MFB again to end the hold call.
Dual-Link	In standby mode	— —	Long press for 3S		1. In pairing mode, the red and blue LED will flash. 2. Pairing finished, the blue LED on for 2S.	
Automatic connecting back	Available after starting up if there are pairing records before	— —			— —	
In charge	Inserting a charging line	— —			The red light remains on	
Charge finished	— —	— —			The red light goes out	
Charge reset function	In on state	— —			— —	Insert the charging line and automatically reset to power off
Quit out of pairing mode	— —	— —			— —	Automatically quit out the pairing mode when there is no pairing finished within 5 min
Earphone connecting state	— —	— —			The blue light flashes every 7 sec	



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Earphone disconnecting state	—	—		The blue light flashes every 5 sec	
Automatic power off	No connection lasts for 10 min or low voltage of the battery is lower than 3.2 v	—			There is a prompt tone
Low-voltage indication	Voltage is less than 3.29 v			The red light flashes twice every 30 sec	There is a prompt tone

Bluetooth function operation

- 1) Turn on: In the off state, press and hold the multifunction key for 3 seconds until the Blue LED flashes 3 times with an indication tone.
- 2) Turn off: In the standby mode, press and hold the multifunction key for 2 seconds until the Red LED flashes 2 times with an indication tone.
- 3) Pairing: In the off state, press and hold the multifunction key for about 7 seconds until the red and blue LEDs flash alternately indicate that the device is in pairing mode. Operate your phone to pair, and there is promote tone after paired. (second phone pairing: If have connect with another phone, long press VOL+ for 3S into pairing mode, after paired and connected, activate the dual-link of the phone, then manually connect first mobile phone)
- 4) Answer a call: Short press the multifunction button to answer an incoming call.
- 5) End a call: When the call is connected successful, short press the multifunction button to hang up, you will hear an indication tone.
- 6) Reject a call: Hold the multifunction button for 3 seconds and release to reject an incoming call. you will hear an indication tone
- 7) Volume Adjustment: when answering, dialing or during a call, short press VOL+/VOL- button to increase/decrease volume, and you will hear an indication tone when increase to maximum or minimum volume.



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- 8) Last number redial: In the standby mode, double click the VOL+ button will redial the last outgoing number
- 9) Voice dial: In the standby mode after connected, double click the multifunction button to start voice dial.(Need the support of the mobile phone Bluetooth)
- 10) Voice transfer: During a call, hold the multifunction button for 2 seconds until hear a tone, then the voice begin to be transferred from the Bluetooth speaker to your phone, the same operation can transfer the sound from your phone to a Bluetooth speaker, the red LED flashes, and there is an indication tone every 10S.
- 11) Microphone mute: Long press the VOL- button for 3S can switch to open and close the mute function, there will be an indication tone after mute(twice every 10S)
- 12) Voice transfer: If there is a coming call to the second phone when the first phone during a call, long press the VOL+ for 3 seconds answer the call, and at the same time hold the first phone call, and long press VOL+ for 3 seconds can switch between two phone calls, short press the ON/OFF key to end the phone call, and at the same time connect the hold phone(some phone will ask whether need to connect), press again to end the call.

LED indicator status:

Standby(Connected with Mobile phone): Blue LED flashes once every 7S.

Incoming call: Blue LED flashes twice every 5S

In communication : Blue LED flashes twice every 3S

Active dual phone : Blue LED on for 2S

Charging: Red indicator remains on

Charging finished: Red LED off

Charging:

Charging voltage : 5V

Charging current : 75~80Ma

Charging time: 1.5~2h

Fully charged battery voltage : 4.10~4.20v

Battery status indicator

1. There will low pressure alarm when the battery voltage is less than 3.3V, the red light flashes twice every 30 seconds , a beep sounds every 1 minute .
- 2.The device will automatically shut down when the battery voltage is less than 3.2V , the red flash 2 times with an indication tone

Tips : (These are mainly need to pay attention in the testing)

- 1.Pairing mode will last 5 minutes.other mobile phone cannot search out the bluetooth headset.
- 2.Re-connecting automatically(includes two cases)
 - a. If the bluetooth headset turned off, it will connected to the pre-set bluetooth headset automatically When turn on manually.
 - b.When the headset disconnects with mobile phone owing to exceeding effective range(normally Link loss if exceed 10M), the bluetooth headset will re-connect with mobile phone if back to effective range within about 10 minutes. (The device will be shut down after 10 minutes if two phones simultaneously disconnected,there is a tone only in the beginning of disconnection)
- 3.Support Bluetooth3.0 , (Do not need to enter the pairing code manually if test with Bluetooth2.1 dongle)

5 · Electrical Characteristics

Electrical specifications:	Minmun	Typical	Maxmum	Units
Charging input voltage range	4. 5	5V	5. 5	V
Minimun current required for charger	100	500		mA
Maximum ripple voltage noise for charger		200		mV p-p
Battery charging saturation voltage		4. 2		V
Cell capacity		80		mAH
Low voltage alert		3.2		V
Automatic shutdown Voltage		2.9		V
Talking current(HV3 connection,Dc=3.7V)		10.5		mA
Standby current(ACL connection sniff mode, Dc=3.7V)		0.3		mA
Leakage current(Device is off, DC=3.7V)		0		uA
Talking time		7		H
Standby time		250		H
Audio features				
Speaker output frequency range	20		4000	Hz
Distortion+noise(32ohm speaker)	-72	-75		dB
Output sound pressure level(S.P.L)(1Khz in 1cm)	100	105		dB
Microphone input frequency range	200		4000	Hz
Distortion+noise(1Khz signal to the microphone)	-75	-78		dB
RF characteristics				
Frequency range	2402		2480	GHZ
Transmit power	0		4	dBm
Carrier frequency offset	-40		40	KHZ
Communication distance(forward)		10		Meter
Communication distance(reverse)	6		8	Meter
Reception sensitivty, (0.1% BER)(Bluetooth standard ≤-70dBm)	-82	-88		dBm

Received signal strength in the 0.1% BER (Bluetooth standard \geq -20dBm)	0	3		dBm
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Environmental suitability

Type	Minnum	Maxnum	Unit
Operating temperature range	-10	50	°C
Storage temperature range	-20	60	°C
Working environment humidity range		75	%
Storage environment temperature range		90	%

6. Mechanical structure and packaging

6.1 Product shape and size

6.2 Explosive view

6.3 Package

In accordance with the packing requirements of customer samples

7. Surface definitions and technology standards

This part is for standard definition of appearance defects and acceptable standard of finished products

7.1 Surface classification

Different plane surface is divided into five kinds: AA(front), A and B, and C,D

AA.interface: refer to the surface user prolonged exposure to

A.front: Refer to the surface that the other side look directly at when use,

B.Side: Refer to the surface that the other side be able to see from top to bottom,

C.Back: Refer to the surface that cannot see when use.

D.Bottom: Refer to the surface that cannot see and reach when use.

7.2 The classifications of defect level of the surface definition.

1 level: 0.0075-inch diameter checkpoint (0.18mm)

2 level: 0.010 inches in diameter checkpoint (0.25)

3 level: 0.015 inches in diameter checkpoint (0.38mm)

4 level: 0.020 inches in diameter checkpoint (0.50mm)

5 level: 0.030-inch diameter checkpoint (0.76mm)

6 level: 0.040-inch diameter checkpoint (1.01mm)

7 level: 0.050-inch diameter checkpoint (+1)

7.3 Product acceptance criteria

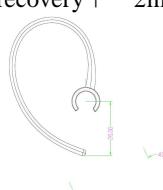
Surface	“AA”	“A”	“B”	“C”	“D”
Actual material	Bottom, upper and lower cover of speaker cavity	lens	Four sides of the headphone	none	none
The biggest defect in the same color	4 level	2 level	4 level	no	no
The number of defect points	3	4	6		

Gap acceptance criteria

Gap position	Acceptable level
Upper and lower cover junction	Maximum 0.2mm
The upper and lower cover junction of the speaker cavity	Maximum 0.2mm

8. Reliability Testing standards

Reliability test

Reliability Test	
Product certification	CE,FCC,BQB
USB cable, headphone cable tensile test	Fix the cable, imposed 1kg pulling force, one minute later, the outer surface of the cable has no obvious peeling or strain, and the basic functions should be tested normal
USB cable, headphone cable swing test	Fix the cable, imposed 100g pulling force, swing angle of + -90 degrees, 40 times per minute (+ -90 degrees for once), for 1500 times, the basic functions should be tested normal.
Vibration test	Frequency:10HZ~55HZ (Frequency change is 1Hz/min) Vibration amplitude:0.8mm Vibration direction and time: Along the X/Y/Z directions, each for 90~100min.
Drop test	Drop from the height of 100cm onto the cement floor, free drop one time respectively from each side(six surfaces),no damage to the appearance after the test,allow the upper and lower cover junction but do not separate, can exert pressure to fasten from up and down, and the basic functions should be tested normal.
Low height drop test	Drop height: 4cm, onto 20mm wood surface, In standby mode, do 100 times drop test for each side(600 times total),and the basic functions should be tested normal after drop test.
Earhook plug intensity test	Intensity of insert and pull:Maximum 2kg, Minimum 0.5kg, 300 times life to meet the intensity requirements
Ear hook bend test	Ear hook bend range: 20cm, 20 times per minute, and stop for 3 minutes every 100 times, no breaking after 300 times, position recovery + - 2mm. 
Canton drop test	Drop from height of 75cm, onto concrete surface, free drop one time respectively from 6 plane and 4 corner, functionality must comply

with electrical specifications.	
ESD test	<p>Reference standard: IEC 801-2 Part 2 ; Samples quantity: 3 (Temperature: 15°C~35°C, Humidity: 30~60%RH, Atmospheric pressure: 68~106Kpa)</p> <p>1. Contact discharge: (+/- 1KV to +/-4KV) When product connected and in working, exert 1KV to the MFB button, charging terminal, the upper and lower cover junction, should ground discharge the tested products after each high-voltage discharge, 10 times discharge; 1KV for an increment to 4KV, Function must be normal and without damage to the products in testing.</p> <p>2. Air discharge : (+/-1KV to +/-8KV, Distance 1cm) When product connected and in working, the outer surface close to the region of non-isolated devices, such as microphone, speaker, charging port, 10 discharge from 1KV, should ground discharge the metal parts after each discharge, 1KV for an increment to 8KV, Function must be normal and without damage to the products in testing.</p>
High temperature storage test	<p>Store the product 8H at +60 °C temperature, do function test after recovery at room temperature for 0.5 h.</p> <p>Result: No appearance damage, functionality comply with product testing requirements.</p>
Low temperature storage test	<p>Store the product 8H at -10 °C temperature, do function test after recovery at room temperature for 0.5 h.</p> <p>Result: No appearance damage, functionality comply with product testing requirements.</p>

FCC Regulations Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Reorient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ◆ Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.