

# BlueExpert BES102, BES103

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## 1 Product Description

BES102 is a Bluetooth stereo headphone which allows music streaming via Bluetooth AV Dongle, General Dongle, or stereo audio transmitter BES103 that transmits stereo audio thru Bluetooth A2DP Profile.

BES102 can also work as a Bluetooth handsfree device. Users can be noticed that there is an incoming call while listening to music.

BES103 is a Bluetooth stereo audio transmitter that transmits stereo audio thru Bluetooth A2DP Profile.

## 2 Product Contents and Functionality

### 2.1 Product Contents

BES102 Bluetooth stereo headphone  
BES103 Bluetooth stereo audio transmitter  
Power adapter  
Y cable (for charging)  
3.5 to 3.5 audio line  
RCA to 3.5 converter  
Detachable microphone  
User Guide

Optional: BED101(AV Dongle)、BED002(General Dongle)

### 2.2 Hardware Specification

#### 2.2.1 BES102 (Headphone)

<b>Product Name</b>	<b>Bluetooth Stereo Headphone</b>
<b>Product ID</b>	<b>BES102</b>
<b>Hardware Version</b>	<b>Rev.R03</b>
<b>Software Version</b>	<b>Rev. 20050406</b>
<b>Product category</b>	<b>End-user- product</b>
<b>Bluetooth specification</b>	<b>Bluetooth 1.2 compliant</b>
<b>Qualification</b>	<b>FCC、 CE</b>
<b>Support Profile</b>	<b>A2DP、 AVRCP、 Headset、 Handsfree</b>

<b>Power class</b>	<b>Class 2</b>
<b>Power control</b>	<b>Auto</b>
<b>Antenna</b>	<b>PIFA</b>
<b>Frequency range</b>	<b>2402-2480MHz</b>
<b>Spread Spectrum</b>	<b>FHSS(79 channels) USA/EU</b>
<b>Modulation</b>	<b>GFSK(Gaussian Frequency Shift Keying)</b>
<b>Data Rate</b>	<b>1Mbps</b>
<b>Interoperability</b>	<b>All devices support the Bluetooth A2DP、AVRCP、HS、HF profile</b>
<b>Security</b>	<b>Pairing, Encryption ,and Authentication</b>
<b>RF Output power</b>	<b>-6dBm ~ +4 dBm</b>
<b>Sensitivity</b>	<b>&lt;0.1% BER at -80dBm</b>
<b>Operation range</b>	<b>5~10 meters</b>
<b>Audio Specification THD</b>	<b>0.1%</b>
<b>Quality</b>	<b>44.1,48KHz 16bit stereo CD-Quality</b>
<b>Sensitivity</b>	<b>96dB</b>
<b>Frequency Response</b>	<b>20Hz~20KHz</b>
<b>Codec</b>	<b>Sub Band Codec</b>
<b>Power Consumption</b>	<div>Link 42mA</div> <div>Play Music 85mA</div> <div>Headset talking 49mA</div>
<b>Battery</b>	<b>3.7V Lithium-Polymer battery 550mAh</b>
<b>Input Power</b>	<b>AC 100~240V, Output DC 5V 1A</b>
<b>Play time</b>	<b>Up to 6 hours</b>
<b>Dimension</b>	<b>121.5mm x 150.0mm x 30.22mm</b>
<b>Weight</b>	<b>88.8g</b>

### 2.2.2 BES103 (Transmitter)

<b>Product Name</b>	<b>Bluetooth Stereo Transmitter</b>
<b>Product ID</b>	<b>BES103</b>

<b>Hardware Version</b>	<b>Rev.R03</b>
<b>Software Version</b>	<b>Rev. 20050406</b>
<b>Product category</b>	<b>End-user- product</b>
<b>Bluetooth specification</b>	<b>Bluetooth 1.2 compliant</b>
<b>Qualification/list date</b>	<b>FCC、 CE</b>
<b>Support Profile</b>	<b>Advanced Audio Distribution Profile (A2DP)</b>
<b>Power class</b>	<b>Class 2</b>
<b>Power control</b>	<b>Auto</b>
<b>Antenna</b>	<b>PIFA</b>
<b>Frequency range</b>	<b>2402-2480MHz</b>
<b>Spread Spectrum</b>	<b>FHSS(79 channels) USA/EU</b>
<b>Modulation</b>	<b>GFSK(Gaussian Frequency Shift Keying)</b>
<b>Data Rate</b>	<b>1Mbps</b>
<b>Interoperability</b>	<b>BES102</b>
<b>Security</b>	<b>Pairing, Encryption ,and Authentication</b>
<b>RF Output power</b>	<b>-6dBm ~ +4 dBm</b>
<b>Sensitivity</b>	<b>&lt;0.1% BER at -80dBm</b>
<b>Operation range</b>	<b>Up to 10 meters</b>
<b>Audio Input Level</b>	<b>5V pp(max.)</b>
<b>Quality</b>	<b>44.1,48KHz 16bit stereo CD-Quality</b>
<b>Sensitivity</b>	<b>96dB</b>
<b>Frequency Response</b>	<b>20Hz~20KHz</b>
<b>Codec</b>	<b>Sub Band Codec</b>
<b>Power Consumption</b>	
<b>Inquiry</b>	<b>63mA</b>
<b>Play</b>	<b>77mA</b>
<b>Battery</b>	<b>3.7V Lithium-Polymer battery 480mAh</b>
<b>Input Power</b>	<b>AC 100~240V, Output DC 5V 1A</b>
<b>Play time</b>	<b>Up to 6 hours</b>

<b>Dimension</b>	20mm x 32mm x80mm
<b>Weight</b>	26g

### 2.3 BES102 Buttons and LED Definition

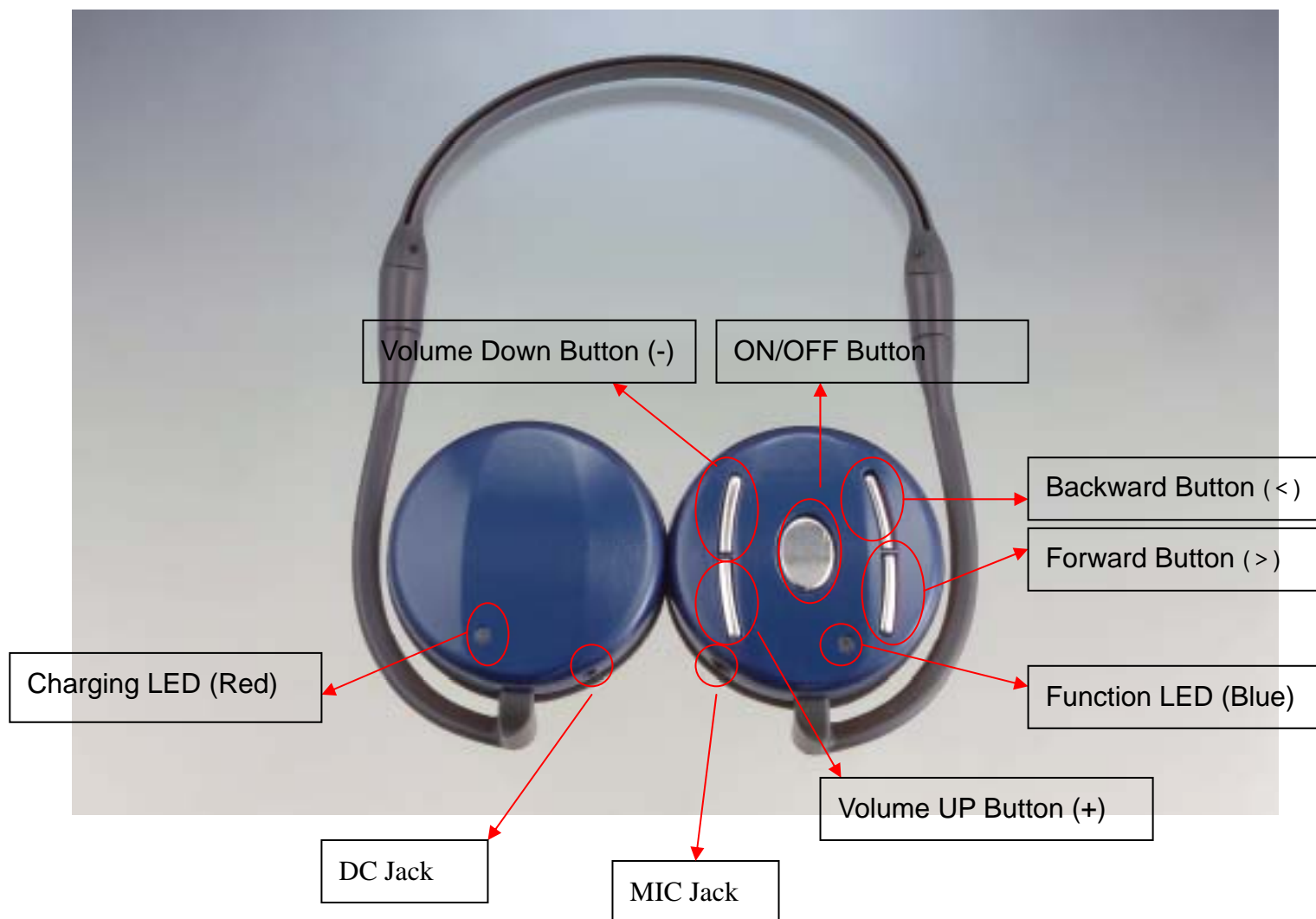
Buttons Definition	Functions			
	Listen Music		Connected with Mobile phone (headset, handsfree function)	
	Connected with BES103 or AV Dongle	Connected with General Dongle	Ringing	During call
ON/OFF Button	* Power On (Hold for 5 seconds) * Power Off (Hold for 4 seconds) * mute / un-mute	* Power On (Hold for 5 seconds) * Power Off (Hold for 4 seconds) * Pause/Play (note 1)	Accept a call	Hang up a call
Volume UP Button (+)	Volume Up	Volume Up	Reject calls	Volume Up
Volume DOWN Button (-)	Volume Down	Volume Down	Reject calls	Volume DOWN
Forward Button (>)	N/A	Skip to next song (note 1)	Reject calls	Microphone mute/un-mute
Backward Button (<)	N/A	Skip to previous song (note 1)	Reject calls	Microphone mute/un-mute

#### Notes:

- 1) If BES102 is connecting with BES103 Bluetooth Stereo Transmitter, or BED101 AV Dongle, then the Forward/Backward key has no functions, due to BES103 and BED101 can only send audio signal out, so not possible to make Forward/Backward control.
- 2) IVT's BlueSoleil 1.6 supports Winamp 5 and Microsoft Media Player 8.

LED Definition	Description
Blue LED	Solid when Connected (With transmitter or mobilephone) Slow Blinks when Power On

	Fast Blinks when Ringing(Incoming call)
Red LED	Solid when Charging Off when finished Charging



## 2.4 BES103 Buttons and LED Definition

Buttons Definition	Functions
ON/OFF Button	Power On (Hold for 2 seconds) Power Off (Hold for 4 seconds)

Symbol	Functions
Blue LED	Fast Blinks when Power On Solid when Connected
Red LED	Blinks when battery low Solid when charging Off when finished Charging



## 2.5 BES102 Bluetooth stereo headphone functionality:

### 2.5.1 Power On

1. Hold ON/OFF Button for about 5 seconds until a short welcome sound appears. Meanwhile, the function LED (blue) blinks.
2. When connected with a Bluetooth device(Transmitter or mobilephone), the function LED (blue) becomes solid.

### 2.5.2 Power Off

Hold ON/OFF Button for about 4 seconds, the function LED (blue) become off.

### 2.5.3 Volume Control

- Press Volume UP (+) button to increase volume.
- Press Volume DOWN (-) button to decrease volume.
- Volume levels : 20 levels, default: 13.

### 2.5.4 Forward / Backward

When BES102 is connected by General Dongle with like IVT BlueSoleil software,



users can skip next/previous song via Forward (>) / Backward (<) button.

### 3 Charging

BES102 & BES103 are embedded with a rechargeable Lithium Polymar battery. The embedded battery is not fully charged when packaged. Therefore, before using the BES102 & BES103 at the first time, please charge the battery with the enclosed 5.0V DC power adapter.

#### **Charging Reminder:**

1. It takes 1.5 to 2 hours to fully recharge the battery.
2. Provided '1 to 2 converter' is for charge the BES102 and BES103 at the same time.
3. While the battery is charging, Charging LED lights up in solid state.
4. When finished charging, Charging LED turns off.
5. BES102 & BES103 will be reset when plugged with power adapter, thus users can force them to be reset if they are abnormal.
6. While the battery is charging, users can still use BES102 & BES103 by pressing the ON/OFF button to power them on.

**Note:** BES102 : If users hear beeps with 5 seconds time gap while using BES102, it means the battery is low and requires charging as soon as possible or it will power off automatically after 100 seconds.

BES103 : If Red LED blinks, it means the battery is low and requires charging as soon as possible or it will power off automatically after 100 seconds.

## 4 Listening to music

### 4.1 Connect with Bluetooth stereo transmitter BES103

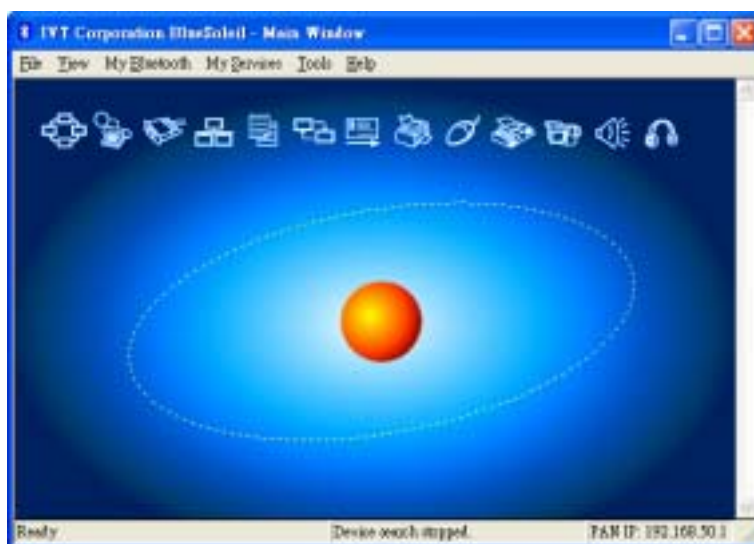
1. Connect the BES103 to any audio player with 3.5 to 3.5 audio line.
2. Power on the BES103 and make sure the audio player is playing music.
3. Power on the BES102 and wait the function LED become solid which means BES102 has been connected with BES103.
4. Users should now be able to listen to music playing by audio player.

### 4.2 Connect with AV Dongle (BED101)

1. Plug the AV Dongle (BED101) into PC's USB port.
2. The AV Dongle (BED101) fast blinks. (Searching for devices).
3. Power on the BES102 and wait for the function LED turn to solid. (Been connected by the AV Dongle (BED101)).
4. Launch the audio player software and play the music.

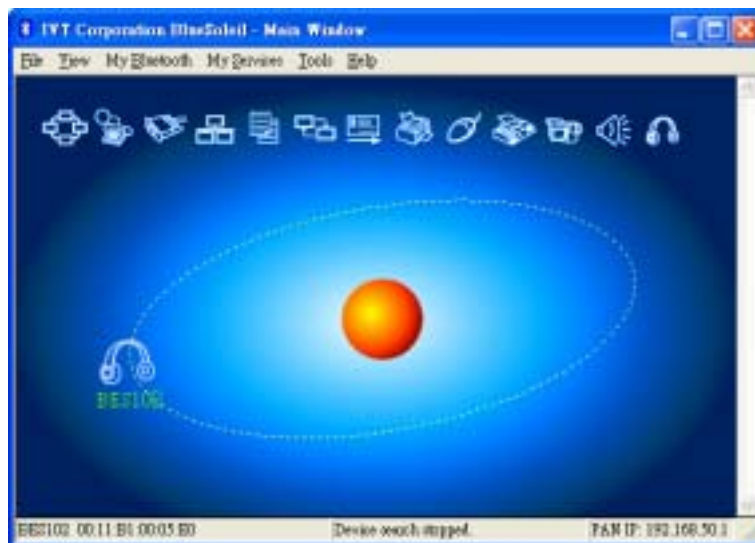
### 4.3 Connect with General Dongle

1. Install the Bluetooth software (e.g. IVT's BlueSoleil), it may require you to restart your computer.
2. Plug the General Dongle (BED002) into PC's USB port.
3. Double click the Bluetooth tray icon on the lower right corner, the BlueSoleil should appear like this:

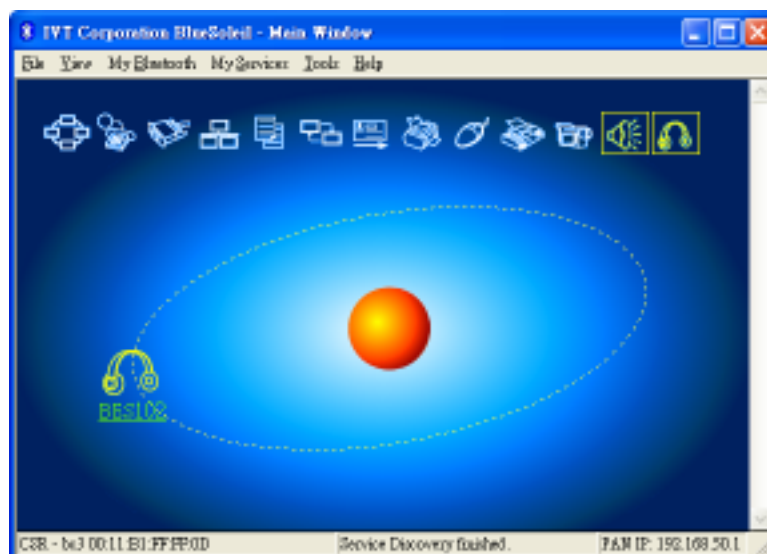


4. Power on the BES102.
5. Make BlueSoleil searches Bluetooth devices around the General Dongle by pressing F5 key.
6. The BES102 headphone icon should appear in the BlueSoleil if BES102 has

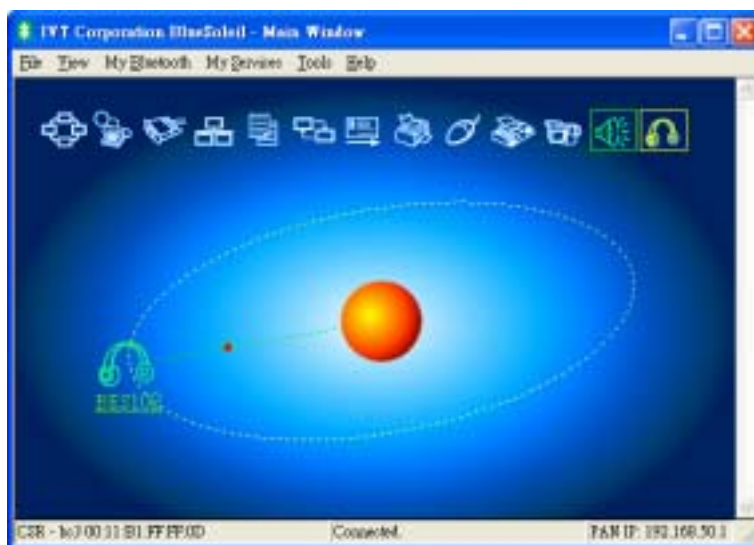
been found like this:



7. Make BlueSoleil to find out all the services that BES102 provides (AV and headset) by double click the BES102 icon in the BlueSoleil. The 2 services are now squared like this:



5. Connect the General Dongle with BES102 by pressing the AV service icon (the trumpet icon). A dotted line appears between BES102 icon and the sun icon.



6. Now you can enjoy wireless music streaming by Launching audio player software and play the music!!!

## 5 Connect with Bluetooth mobile phone



Plug the microphone while using BES102 as headset or handsfree

### 5.1 Pairing stage

1. First of all, enable the Bluetooth function of your mobile phone.
2. Select 'Handsfree devices' and do search.
3. Once the BES102 has been found by mobile phone, it will require you to enter 4 digits PIN code (0000).

### 5.2 Pick up a phone call

1. Users will hear the ring tone if there is a incoming call.
2. Press the ON/OFF button once to pick up the incoming call, or press the other buttons to reject the incoming call.

### **5.3 Hang up the call**

Press the ON/OFF button again to hang up the call if you pressed the ON/OFF button to accept the call previously.

### **5.3 Mute / Un-mute microphone**

- While you are talking on the phone, you can press the “Forward” or “Backward” button to mute the microphone.
- press the “Forward” or “Backward” button again to un-mute.

### **5.4 Make a phone call**

Dial the number normally on your mobile phone, then use BES102 as a handsfree device to talk.

## **6 Notice**

1. If you want the BES102 to work as handsfree device while you are listening to music, you need first of all pair the BES102 with your Bluetooth mobile phone.
2. If the devices are abnormal, you can force them to be reset by plugged with power adapter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Notice: Any changes or modification not expressly approved by the party responsible could void the user's authority to operate the device

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Notice: Any changes or modification not expressly approved by the party responsible could void the user ' s authority to operate the device

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