

USB Bluetooth adapter





1. Description of background and application scenarios With bluetooth speakers,

the popularity of bluetooth headset, wireless brought great convenience into people's life, so he went to the cable is a major trend of the current consumer electronics industry, and the integrity of the bluetooth technology with its agreement, generality and standards, as well as the innate advantage in intelligent devices, become the preferred one of wireless communication technology, for the PC, through USB sound card output, can do not drive, than by ordinary bluetooth dongle is better output in the PC compatibility and ease of use. The following are several commonly used scenarios, but they are not limited to them. This scheme can be considered as long as such scenarios are similar to those in which PC pushes audio to Bluetooth receiving devices.

As shown in Figure 1 below, it is mainly used for computer to push audio to Bluetooth speaker headset through Bluetooth, or to make voice chat or call or to hold teleconference through Bluetooth speaker headset.



蓝牙音箱或蓝牙耳机

Figure.1

As shown in Figure 2 below, it is mainly used in the teleconference system, which is equivalent to eliminating the microphone line of the traditional telephone system and making the microphone part wireless.



Figure 2

As shown in Figure 3 below, it is mainly used in the home living room scenario, where the TV sound is emitted to the Bluetooth speaker or headset through the Dongle.



Figure 3

2、The principle diagram

This case the principle diagram of the following block diagram is shown in FIG. 4, the computer via usb audio dongle and connection, the dongle via bluetooth A2DP HFP and bluetooth speakers or headphones, you can put the music on the computer to bluetooth speakers or headphones, or use a bluetooth speakers or headphones through chat software or a conference call with a friend for voice calls, through usb HID the AVRCP and bluetooth, bluetooth speakers or headphones can also do some control of the PC play.

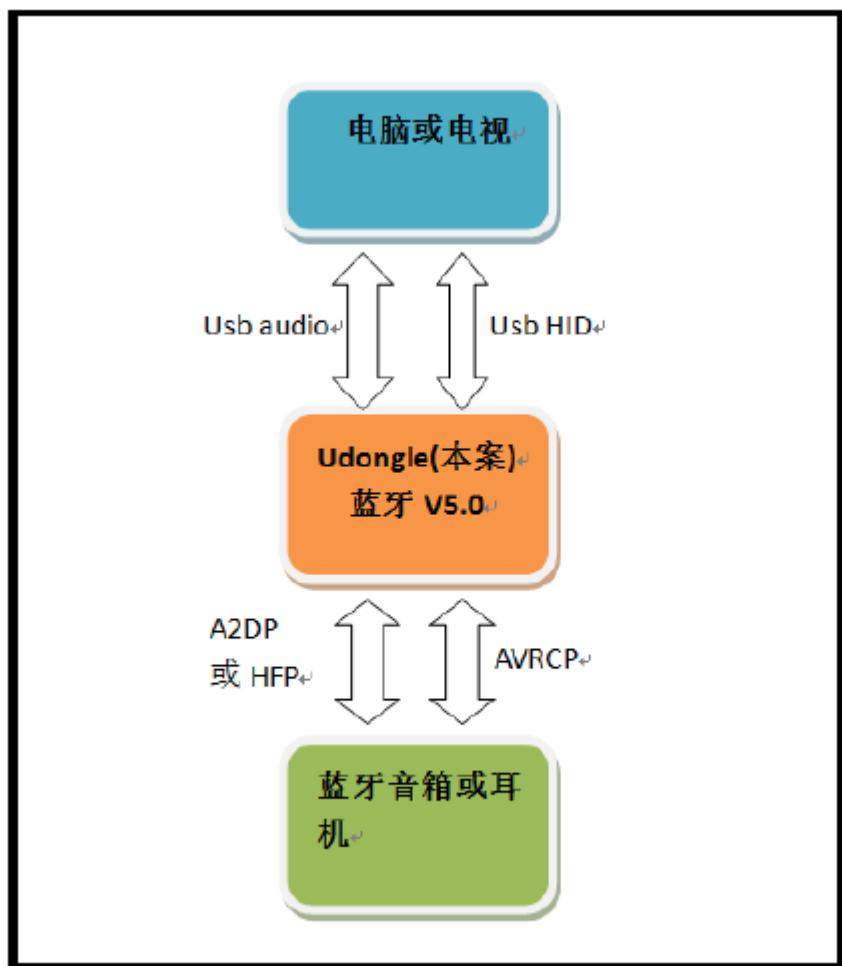


Figure 4

3、function declaration :

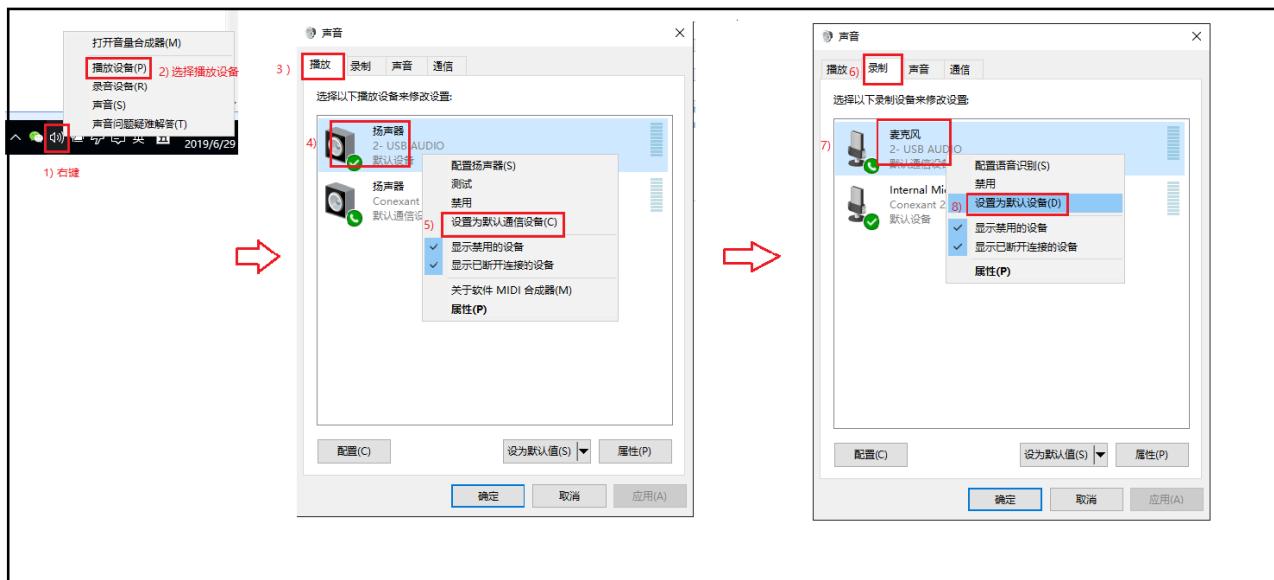
function	require	remark
Support Bluetooth 5.0 protocol	Bluetooth supports version 5.0 of the core protocol, as well as the Bluetooth Profile (A2DP, HFP) involved in the related voice call dongle.	
Supports USB Audio audio transmission	The PC sends the audio output to a dongle via USB Audio channel, and then the dongle sends it to the receiving device (speaker or headset) via Bluetooth A2DP.	
Support USB Audio voice call hands-free	One end of the dongle is connected to the PC through USB Audio channel, and the other end is connected to the Bluetooth speaker or headset through Bluetooth HFP as an AG role. Thus, the Bluetooth speaker or headset can be used to realize the hands-free function of the calling software on the PC.	
Support ordinary voice and HD voice when voice calls	Voice calls can support ordinary voice (8K sampling rate, CVSD codec), can also support WBS (that is, broadband voice: support 16K sampling rate and MSBC codec).	
Bluetooth audio transmission support AVRCP control	The receiver can control the transmitter through AVRCP to play, pause, up and down switch and so on	
Bluetooth audio transmission supports digital volume adjustment	When bluetooth is transmitted, if the connected bluetooth speaker end does not support volume synchronization, you can adjust the digital volume of the sent data.	
Support volume synchronization for Bluetooth audio transmission or voice calls	Support receiver and transmitter volume synchronization function, that is, the receiver and transmitter use a common volume.	

4、Bluetooth protocol support

agreement	scheme requirement	BQB needs	remark
Bluetooth Core Protocol Version	V5.0	support	
A2DP version	V1.3	support	
A2DP SRC role	support	support	
AVRCP version	V1.6	support	
TG AVRCP role	support	support	
HFP version	V1.7	support	
Role of HFP AG	support	support	

5、Binding and Connection

- 1) Plug the Dongle into the USB port on your PC
- 2) Select the USB Dongle as the default sound card on the PC side according to the following operation



- 3) Switch on the Bluetooth speaker or earphone, and then press the pairing button (some speakers or earphones are not required, and the details are subject to the product manual) to enter the pairing mode
- 4) Put the Bluetooth speaker or headset close to Dongle. In order to improve the success rate of pairing, it is better to wait for pairing within 0.5 meters. Then Dongle will choose the nearest Bluetooth speaker or headset to connect
- 5) when the dongle and bluetooth speakers or headset paired automatically connected to the speakers or headset, bluetooth speakers or headphones after being connected, will have a speech or prompt, if is not sure whether the connection is successful, can open players play songs in the PC terminal, if after the success of the bluetooth connection, you can play the song sounds on speakers or headphones
- 6) When the Bluetooth connection is successful, the device will be bound, and the next boot will be connected to the device by default

6、AVRCP control

If the speaker or headset has "Next", "Prev", "Play/Pause" keys and AVRCP support, you can press "Next", "Prev" keys on the speaker or headset to switch "Next, Last" to the PC player, press "Play/Pause" to pause or resume the player on the PC.

7、communicate by telephone

The dongle can support PC WeChat, QQ, SkyP and other conference software calls, the followinWeChatB1 as an example to explain how to use, other communication tools are similar:

Open the PC terminal WeChat, initiate voice chat to friends, enter the voice chat interface, normal voice chat, then the other side's voice will be played out in the speaker or earphone end, and you speak to the speaker or earphone, the other side can also hear your voice.

8、The volume synchronization

If the Bluetooth speaker or headset has a volume button and supports volume synchronization, you can adjust the volume on the PC side by pressing the volume button on the speaker or headset when playing music or talking.

9、reconnect

After pairing, the following two methods can be quickly and automatically connected and can be used:

- 1) Turn on the Bluetooth speaker or headset before plugging in the dongle
- 2) Insert the Dongle first, then turn on the Bluetooth speaker or headset

FCC Warning

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.

Changes or modifications 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.

RF Exposure Information

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.