



10minutes Invisible Bluetooth speakers

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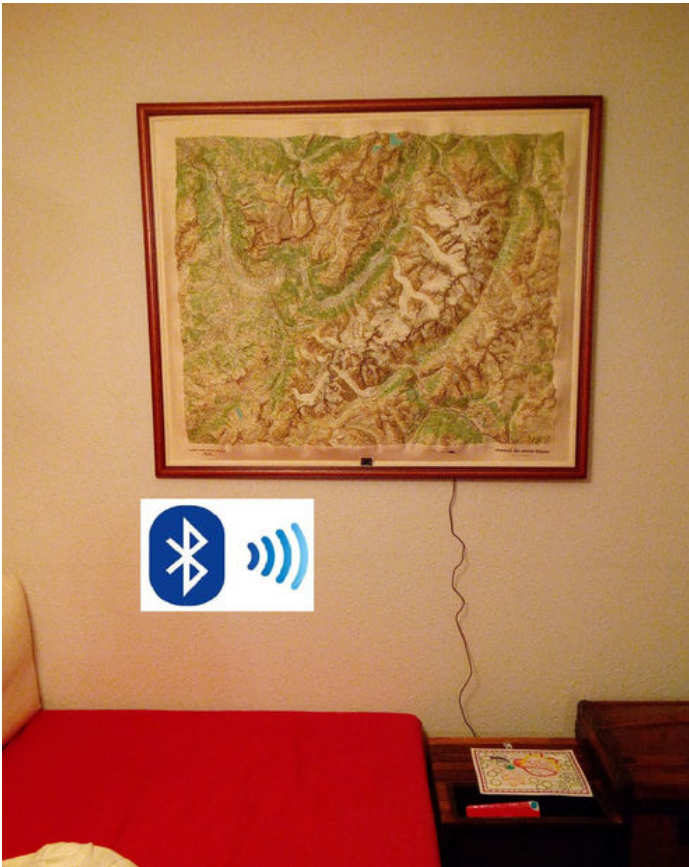
Intro: 10minutes Invisible Bluetooth speakers

Here is a very simple instructable to build your own invisible bluetooth speaker.

This project use exciters. These incredible compact components can turn any surfaces and materials into a speaker. When attached to surfaces, it vibrate mechanically and the vibrations translate into auditory information. The result is surprisingly musical and accurate.

For example, you can use it on doors, ceiling panels, windows, projection screens, wood, glass, cardboard, plastic, metal, ... whatever you want.

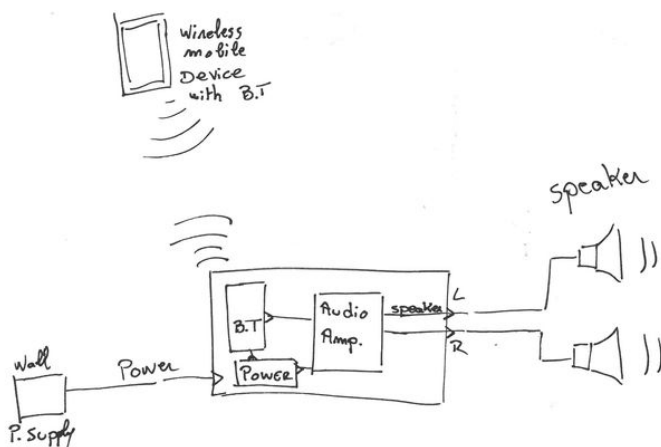
Combine this kind of exciters with an audio amplifier and an audio Bluetooth module, and you get an incredible simple, tiny and powerful wireless speaker !

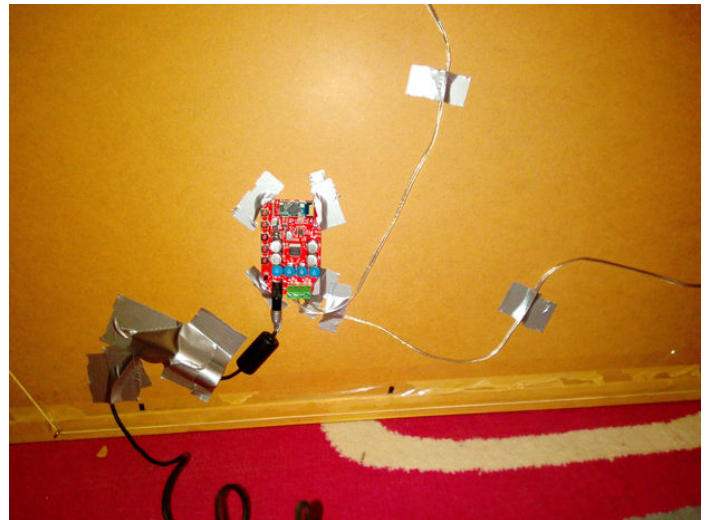
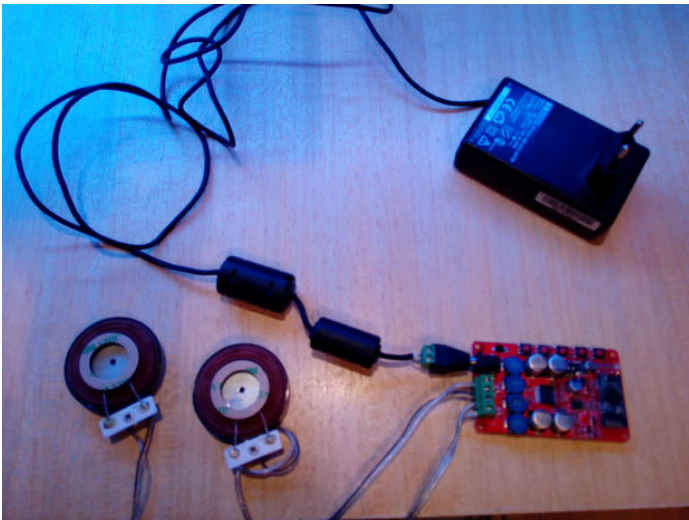
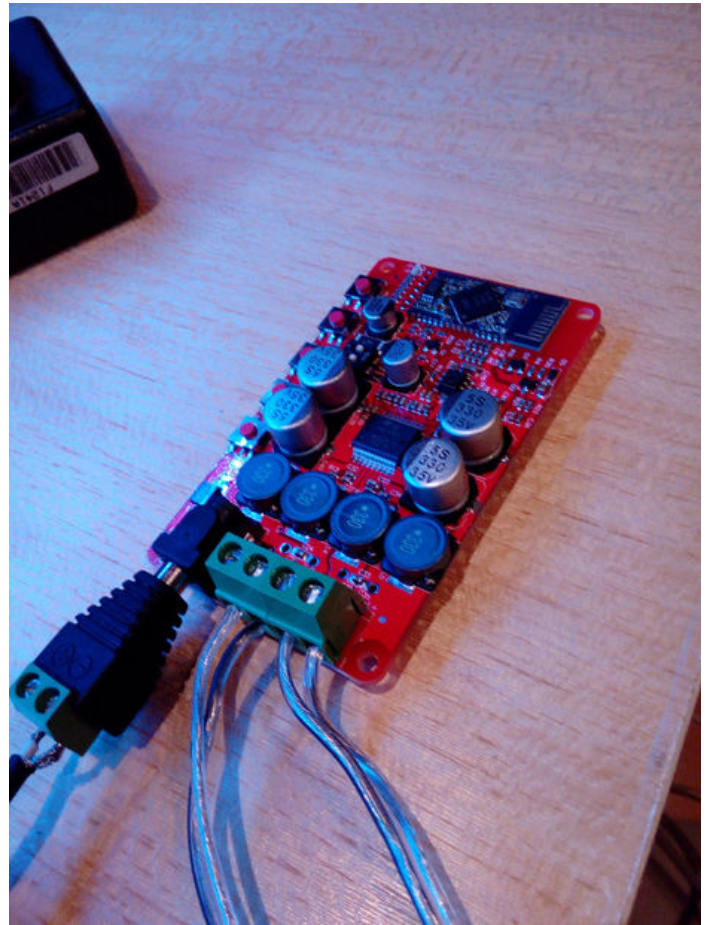
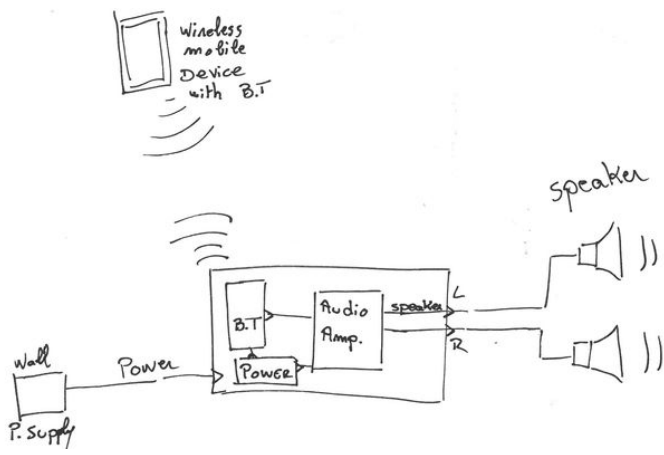


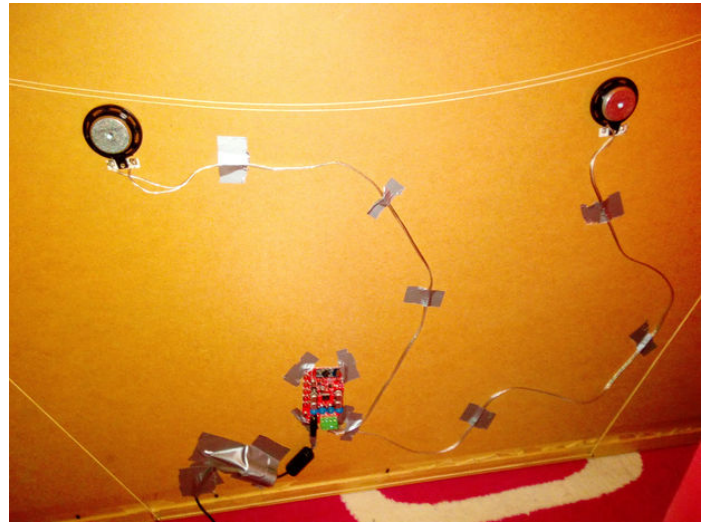
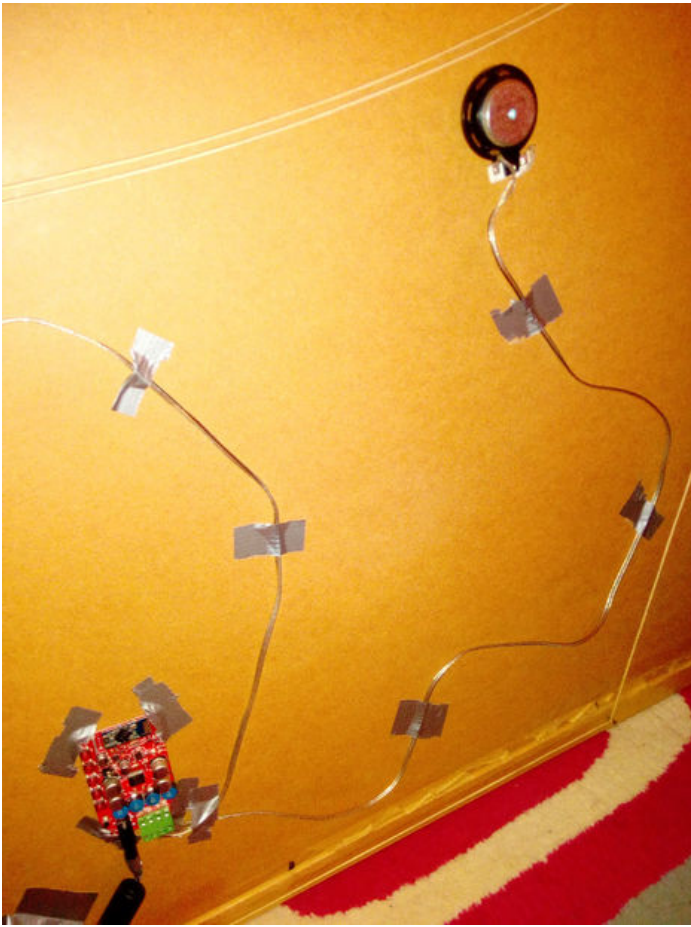
Step 1: Step2: put it all together

assemble all elements:

1. Plug exciters and power supply to the amplifier. Do not use audio wire with too much length as it will bring you some noise. Keep it as short as possible.
2. Mount the exciters on the surface of your choice. In my case, I mount it behind my wall frame to hide all the system (with dirty tape...). The only visible part will be the electric wire of the power supply !





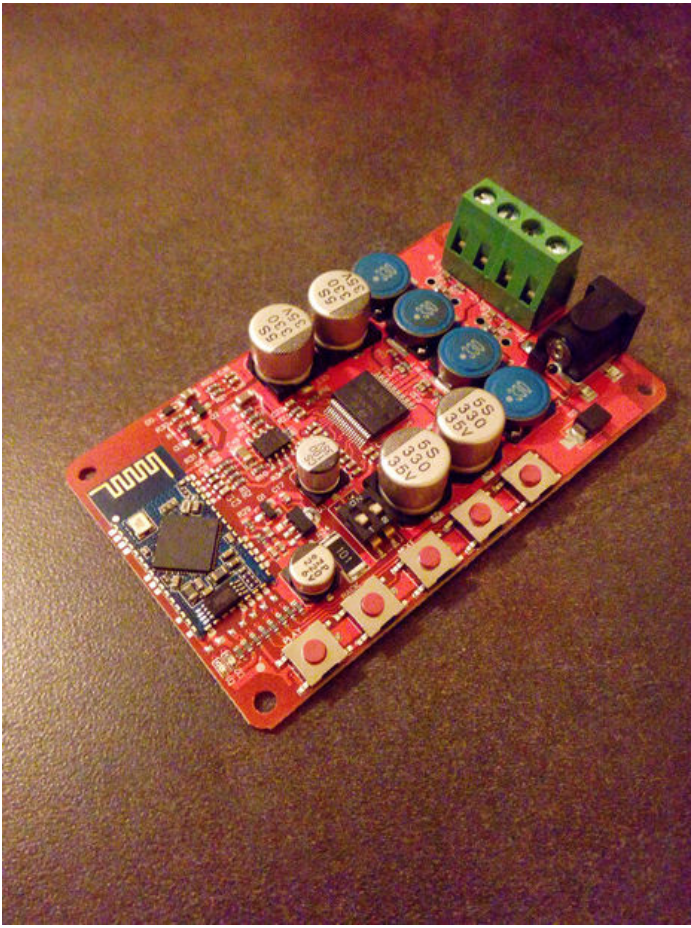


Step 2: Prepare all material

Here is the material we need:

- a surface of your choice where you will be able to hide your system. In my case, I choose a wall frame (3D map of Mont-Blanc mountains, where I live !)
- 1 (mono) or 2 (stereo) exciter(s). I used 2x 10W 8ohms. Price ~30\$/unit. Have a look on Visation products and Dayton products
- some audio cable (for better quality keep length as short as possible)
- 1 all-in-one audio amplifier + audio bluetooth module. You can find it on Banggood. This cheap PCB include a BT module with a 2x25W amplifier ST TDA9274P (datasheet). Price ~13\$
- A power supply. Choice a good quality one because the audio quality is very dependent on your power supply quality. I get mine from the bin for free. It was the power supply of a laptop. 40W is not required because you will never use the amp at its maximum volume (except if you like dirty sound...). From my experience with this amp, I would say that 20W is the minimum.





Step 3: Enjoy your music

1. Plug your power supply
2. Connect to the Bluetooth module with your device: smartphone, tablet, computer etc ...
3. Play your favorite sound / movie
4. Enjoy !

About the quality, do not expect a perfect sound quality, but the result is very interesting. The sound level is surprising (in the good way) and the quality is not bad (very dependent on the surface you used). From my experience, I would say that this system is not very good for the low frequency (medium quality). But once again, it is very dependent on the surface you use. Higher frequencies sound very nice and powerful. This system is very good to listen to human voices, classic, jazz music and other songs with not too much bass. For music with loud bass, I use the audio equalizer to reduce the bass sound level.

Have a look at the demo video to get an idea of the result (even if the quality of the recording is not very good).

Do not forget to vote for my project if you like it !



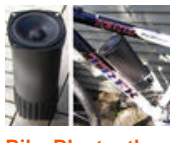
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Universal Bluetooth by The Oakland Toy Lab



Bike Bluetooth Speaker by jrwilliams



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