



### **What is ANC or automatic noise cancelling?**

Automatic noise canceling (ANC) is a circuit that is designed to make the cabin noise in the vehicle quieter. It does this by using one or more microphones inside the vehicle placed near the passengers to monitor the sound the occupant hears. It will then process the road and exhaust noise it hears and send an out of phase signal to the audio systems to help cancel out road and exhaust noise for the cabin occupants. This is a more cost effective way to make for the OEMS to make the interior cabin of a vehicle quieter without adding a lot of weight.

### **How does this affect aftermarket car audio?**

If you are planning on changing or adding any component in your OEM audio system, you will need to know if it has ANC and how to disable it. If you do not disable the system after doing any audio modifications, it will unbalance the ANC system and will cause it to make unacceptable low frequency noises that will severely degrade the audio experience. The OEM system listens for specific frequencies caused by road noise or the vehicle's exhaust via microphones in the cabin then sends signal through the OEM system to counteract these external noises. The problem with adding high power aftermarket subwoofers and amplifiers is that the ANC system was designed to be in a closed loop system and does not have a way to adjust the cancelation level to match the higher output of these aftermarket audio systems. So it sends the same low frequency cancelation signal that was designed for the factory system that had a low powered amplifier and small subwoofer to the new aftermarket equipment . With the higher power and output capabilities this causes the cancelation signal to be amplified to the point where it is now audible and you will hear a pulsing or thumping out of the system.

There are a few different ways to disable the ANC system.

1. You may be able to take the car to your local dealership and have them disable it with their diagnostic computer. There may be a charge for this process or they may not be willing to do this. This will depend on your individual dealership.
2. You can locate the ANC microphones and unplug them. You may have to search the internet to find the locations of each of the microphones and how to disable them. In some vehicles, the hands free microphones used for Bluetooth phone calls are also used for noise cancellation. After unplugging the suspected microphones, you should make a test call to verify the necessary microphones for the hands free functions are still operating properly.
3. You can locate and cut the ANC wires that feed signal to the OEM audio system. You may need to contact your local dealership or search the internet to find the location of where the signal is injected into the system and the specific wires you will need to disable. Always verify they are the correct wire(s) with a multimeter before you cut them. It should be stated that this may void portions of your vehicle's warranty since you are disrupting a factory installed electrical component.
4. You may be able to find the ANC component and unplug it from the audio system. In some vehicles, there is simply an external module that you can unplug to disable the system.
5. Some companies offer bypass modules in cases where you cannot disconnect the microphones and the audio signal must pass through the ANC circuit before it goes to the audio system.

Once the ANC circuit is disabled, you will be able to install any aftermarket audio system and enjoy the music. Be sure to read our article on "Active Noise Enhancement". This is another very important OEM DSP function that you may also have to contend with.