

# What Is OBD-II? How OBD-II work?

Onboard Diagnostics II ([OBD-II](#)) is a standardized system that onboard computers in cars and trucks use for self-diagnostics and reporting. This system grew out of California Air Resources Board (CARB) regulations, and it was implemented with specifications that were developed by the Society of Automotive Engineers (SAE).

Unlike earlier, OEM-specific OBD-I systems, OBD-II systems use the same communication protocols, code designations, and connectors from one manufacturer to another. This allows a single OBD-II scanner to provide access to the data that these systems are capable of providing across all makes and models of vehicles produced since 1996, which was the first model year that OBD-II was required across the board.

## Types of OBD-II Scanners

There are 2 basic classes of OBD-II scanners that you'll stumble upon.

### Code readers

OBD-II code readers are sometimes cheap, essential devices which will scan and clear codes from any vehicle that's equipped with OBD-II. These devices have some inherent limitations therein they sometimes lack any data on manufacturer-specific codes and provide restricted (or no) access to different knowledge.



## Scan Tools

OBD-II scan tools are dearer, and that they offers a range of various options. Scan tools could give a lot of access to or data concerning manufacturer-specific codes, giveintensive, customizable access to measure and recorded knowledge and provide advanced troubleshooting data, which can be seen in the [car stereo](#) screen



### What will an OBD-II Scanner Do?

The practicality of associate degree OBD-II scanner depends on whether or not it's a basic "code reader" or a a lot of advanced "scan tool." Basic code browsers will solely read and clear codes, whereas advanced scan tools may also read live and recorded information, offer in depth information bases, offer access to bi-directional controls and tests, and alternative advanced practicality.



All OBD-II scan tools supply some basic practicality, which incorporates the flexibility to browse and clear codes. These scanners may also supply the flexibility to test unfinished, or soft, codes that haven't activated the check engine light-weight however, and supply access to a wealth of knowledge. information from just about each device that gives associate degree input to the aboard pc is viewed via an [OBD2](#) scanner, and a few scanners may also founded custom lists of parameter IDs (PIDs). Some scanners additionally offer access to readiness monitors

and alternative data..

#### How Do OBD-II Scanners Work?

Since OBD-II systems are standardized, OBD-II scanners are comparatively straightforward to use. all of them use the identical instrumentality, that is outlined by SAE J1962. Basic scan tools operate by merely inserting a universal plug into the OBD-II diagnostic instrumentality in a very vehicle. Some advanced scan tools conjointlyembrace keys or modules that augment the universal instrumentality so as to access or move with OEM-specific info or controls.

Choosing the correct OBD-II Scanner



If you own a automotive that was engineered when 1996 and you are doing any quite work on that, either to save lots of cash or simply as a result of you get pleasure fromobtaining your hands dirty, then associate degree OBD-II scanner may be a valuable addition to your tool case. However, that doesn't mean that each grounds mechanic ought to head out and drop \$20,000 on a high-end scan tool from Snap-on or mack.

Do-it-yourself mechanics have plenty of less costly choices to explore, therefore you'll need to test them out before you create an acquisition. as an example, plenty of components stores can truly check your codes at no cost, and you'll be able to realize plenty of diagnostic info at no cost on the net. in a very heap of cases, which may be all you wish.

If you would like a touch additional flexibility, there are variety of low-cost scan tool choices you'll be able to take a look at. Dedicated code readers that conjointly give access to PIDs are one choice to study, and you'll be able to typically realize a good one for beneath \$100. an alternative choice, notably if you have got a good golem smartphone, is associate degree [ELM 327 Bluetooth scanner](#), that could be a cheaper path to primarily the identical practicality.

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## Ways you can to do when car radio reception is weak

When you expertise annoying signal drops or interference once you're making an attempt to concentrate to your [car radio](#). But what you can to do is nothing.

However, if your reception issues persist, you're most likely managing associate instrumentation malfunction, most of that are simply repaired.



### **Check your antenna mast extended**

There are plenty of how that a manual antenna mast will find yourself pushed in. regardless of the case, if you have got a retractile mast and your reception has been awful recently it's positively value checking this firstly.

Since antennas perform by memorizing radio waves, it solely stands to reason that being shoved down within the automotive would possibly create it troublesome for your antenna to perform properly. actuation it back out, if you discover it shoved in, is also all it takes to immensely improve your reception.

This may sound like extraordinarily basic stuff, however it's truly amazingly common for manual antennas to be backward so left that manner. Since there isn't any mechanism to forestall these masts from being backward, anyone will walk by and shove your antenna down.

### **Check Your Antenna Connections**



One of the foremost common causes of poor car radio reception may be a poor antenna connection. If the antenna cable is poorly seated in your [head unit](#), or any of the connections are loose, worn, or unsound, you'll usually notice it troublesome to tune into your favorite station.

The first issue to test is that the connection between the antenna cable and therefore the back of your head unit. If that's properly seated, then you'll wish to seek out a station you'll be able to tune into then gently wiggle the antenna itself back and forth. If the connection is solid, you shouldn't notice something. If the connection is loose, you'll in all probability notice the tuner drop then reacquire the signal. If that happens, you ought to tighten the antenna and check the grounds.



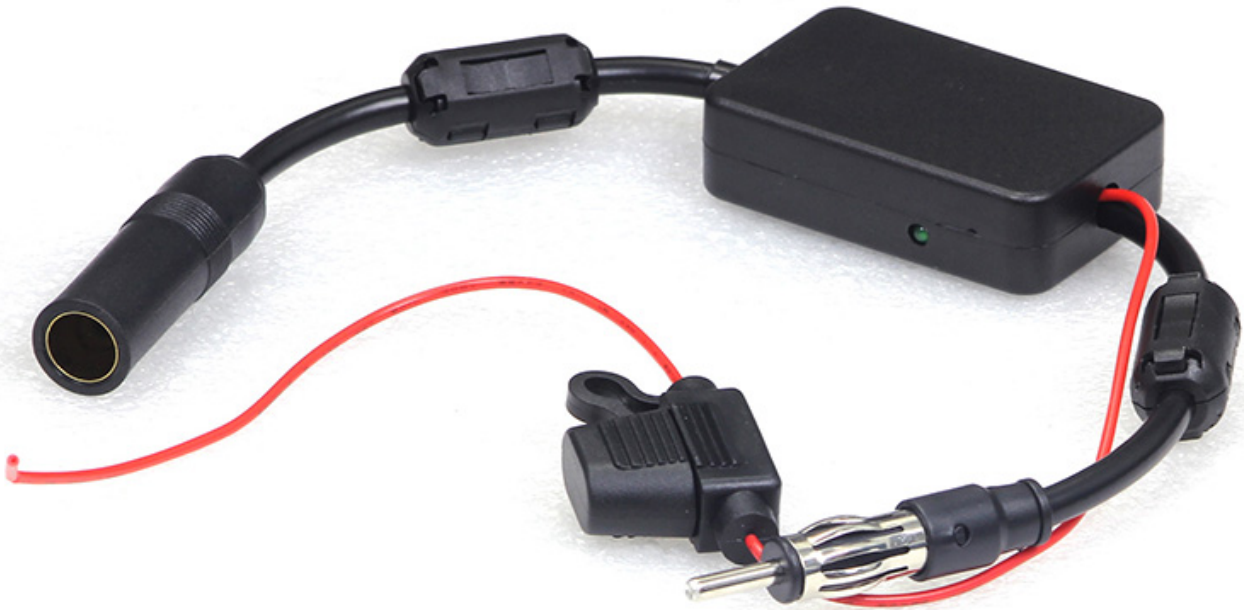
**Get a New Antenna**

When check your antenna connections, you will realize that your antenna mounting hardware or mast is unsound, rusted, or broken another method. therein case, exchange the antenna can sometimes do the trick. Since rust and corrosion will stop the antenna from creating a solid reference to your head unit, merely exchange the unit can typically lead to higher reception.

There also are one or two of different cases that decision for a replacement antenna. for example, some cars include “grid style” antennas mounted on the car window glass rather than typical whip or mast antennas. These flat antennas have some aesthetic advantages, and that they can’t be broken off by a automotive wash or a vandal, however they typically suffer from poor reception in huge cities or unsmooth areas. In some cases, a whip antenna can offer higher reception.

### **Buy a Radio signal boosters**

Radio signal boosters are not suitable for all poor reception, however there are specific circumstances wherever they’re going to cure what ails you. If you’ll receive an indication from a specific station, however it’s particularly weak, then an indication booster would possibly improve your reception. However, boosters won’t do something for you if the signal degradation relates to obstructions like tall buildings and hills.



## Buy a new car radio

On the entire, the radio tuners in [car radios](#) are much more advanced than home radios. however even an inexpensive [digital car radio](#) encompasses a sight a lot of happening beneath the hood.

That being aforementioned, not all head unit radio tuners are created equal. therefore if you've checked everything else, and you can't blame your reception issues on the rain (or the tall buildings, or the close hills), then it would be time to interchange your [head unit](#).

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# [How to Install a Car Stereo](#)

# With No Wiring Harness

When you buy a [car stereo](#) with no wiring harness or the harness not fit your car, it would be crazy. There are a pair of various ways that to figure the matter. If you have got the plant harness, however not the harness that came along with your head unit once it had been new, then you'll be able to either get an adapter – if one is on the market – or fabricate one yourself.

If you have got everything that came with the pinnacle unit, however somebody, at some purpose, cut the plant harness out of the automobile, then all you have got to try to to is determine the wires and solder in your [head unit](#).

On the opposite hand, if your head unit has no harness, and you're addressing clean wires in your automobile, that's additionally one thing we are able to accommodate. It won't be as straightforward as you may like, however it's still among the realm of chance.

Let's begin with the simplest scenario, and physical exercise from there. be happy to skip ahead to whichever answer really applies to your scenario.



### **Wiring a Car Stereo With No industrial Harness**

This is really a reasonably common state of affairs. While head unit harness adapters exist that allow plug-and-play head unit installation, it's comparatively common for installers to easily cut out the industrial plant harness and solder within the head unit harness throughout install. If that head unit is removed at a later date, you're left with blank wires. Or if you only need to upgrade to a brand new [aftermarket head unit](#), you're forced to chop the aftermarket harness out and begin from scratch.

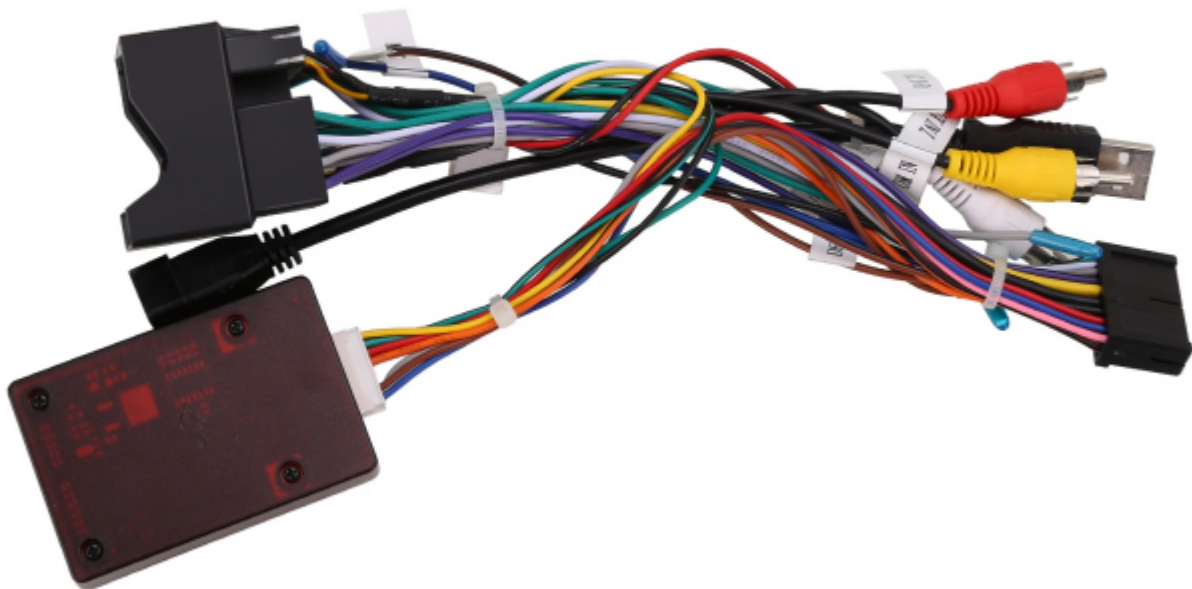
While it should appear frightening check out your dash and see a wild tangle of wires, this can be a reasonably simple downside to cater to. The simplest answer is to get a schematic for your specific create and model of automotive, or go browsing and seek for a diagram or table that shows that

wires do what.

If you'll be able to determine the colours of the speaker, power, ground, memory keep alive, and the other wires, then all you have got to try to do is find them within the dash and connect them to the corresponding wires on your head unit.

If you can't realize that info on-line, otherwise you would rather simply do things the quaint manner, determining that wires do what's a really easy method. With some basic tools sort of a check lightweight, multimeter, and perhaps a one.5V battery, you'll be able to get everything sorted move into simply some minutes.

For additional info on the way to properly determine the mess of [automotive stereo](#) wires in your dash, take a look at our basic automotive stereo wiring primer.



### **Wiring a automobile Stereo With No Harnesses at all**

If your head unit doesn't have a harness, and somebody cut the

harness out of your automobile yet, then you'll must do a mixture of the higher than strategies.

The first step continues to be to get a pinout for your head unit and fabricate a brand new harness for it. After that, you'll must determine all of the wires within the dash to work out which of them are for the speakers, power, ground, and so on.

Since there's no works harness within the image, you've got to choices to think about. you'll either fashion a brand new harness for the works wires which will plug into your head unit harness, or solder your head unit harness on to the works wires.

### **Fabricating a brand new Car Stereo Wiring Harness**

If you'll notice the pinout knowledge, then you'll must use it to fabricate a brand new harness. the simplest thanks to do that is to get one thing known as a "rectangular connector" sized to suit your head unit.

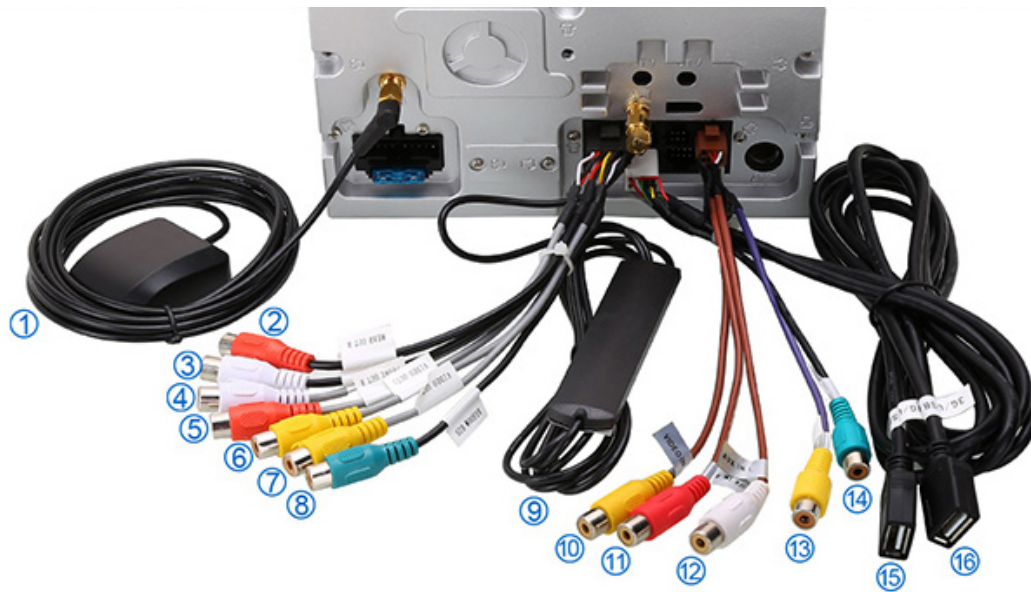
In most cases, what you'll want may be a two-row rectangular header connective with a feminine socket that's a "through hole" mount kind. this sort of connective is intended to be put in on a card, however it'll additionally add a pinch because the foundation of a replacement automotive stereo harness.

You may be unable to search out a connective with the proper pin spacing and also the correct range of pins. whereas the pin spacing is very important, the quantity of pins isn't. you'll either use multiple smaller connectors or hamper an outsized one to suit, whichever works best.

Once you have got found a pinout diagram and obtained an oblong connective, all you have got to try to to is solder

wires to every of the pins on the connective then place heat shrink on each wire to stop shorts.

If your automotive still has its works harness, then there are 2 ways that you'll complete the installation. Either acquire associate degree adapter that's designed to plug into the harness – or fabricate one the identical manner you probably did with the one for your head unit.



You can additionally simply cut the wires and connect them on to your new harness, though which will simply shift new issues onto the following one who tries to upgrade the stereo.

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