

How to buy a low-EMF car



What to look for when trying to find a low-radiation vehicle.

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Most people do not seem to be affected by the electromagnetic radiation in cars. Some have minor symptoms, while a few are strongly affected.

The following is a list of features that will help lower the radiation inside a car. You will still need to measure and try the car to know if it will work for you. Sometimes you'll need to do some modifications.

- No smart key
- No electric car
- No hybrid car
- Minimal electronic gadgets
- Older vehicle
- Larger vehicle

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- Basic vehicle (not luxury)
- No tire pressure monitors
- Battery located away from driver (and not in the back)
- Alternator located away from driver
- Fuse box located away from driver
- Ignition coil located away from driver
- No anti-lock brakes
- No transverse mounted engine
- Carburetor or mechanical fuel injectors
- Manual or non-electric automatic transmission
- Diesel engine

Very few vehicles will have all of the listed features and they may not all be needed. The most important features to avoid are probably:

- Smart key / intelligent key
- Electric vehicle
- Hybrid vehicle

To find out if a vehicle has a smart key, it is simple to check if it can be started by pressing a button on the dashboard, without the need to turn any key.

Luxury cars are usually best avoided since they tend to have more electronics in them compared to other brands from the same model year. Some luxury cars also have a backup battery, which is often located in the back and connected to the front with a radiating wire. Designers of luxury cars are not concerned about the radiation level inside (maybe one day!).

Older, larger vehicles are usually better, but not always. The 1987 Buick Century is a big old “boat,” but the driver is exposed to a whopping 120 milligauss — the highest this author has ever measured.

The really old cars have no catalytic converters and thus much worse exhaust. It doesn't seem to make sense to buy anything earlier than about 1980.

Electronics started appearing in cars around 1985 (some brands came later). After around 2005 the electronics have exploded and it will continue to get worse with more and more computerized and wireless gadgets added. A modern car has about a hundred microprocessors scattered around the vehicle.

Pickup trucks are usually better than cars because the electronics and wiring are further from the driver. On some models the wiring harness is located inside the

engine compartment instead of in the dashboard. Even a few extra inches can make a big difference. Some people with EHS have successfully used older trucks from Ford and Dodge.

The radiation level can vary dramatically with the model year, even for trucks. The low-frequency radiation in a 1993 Ford F-150 is much higher than in the 2000 model F-150.



This 2002 Ford F-250 pickup truck with diesel engine is one of the better low-EMF options.

The smart key

The smart key allows a car to be started with a push button instead of turning a key. It can also automatically unlock a car without having to press a button on a fob or turn a key in a door lock.

This minor convenience comes with a hefty dose of radiation, as the car wirelessly “talks” to the smart key continuously while the engine is on. Some smart keys are also powered wirelessly, further increasing the radiation level. This is probably the worst of all the radiant technologies.

The smart key is called “intelligent key” for some car brands. It was introduced in 1998 by Mercedes-Benz and adopted by some luxury car brands in the following

years. By 2015 it was available from most car brands from Japan, Europe and America.

Gas vs. diesel engines

Gasoline engines use spark plugs and ignition systems. These radiate by themselves and they use a lot of electricity, which means radiating wires as well.

Diesel engines have no spark plugs and no ignition system. The fuel is ignited by compression in the cylinders. Before electronic fuel injectors were added to cars during the 1980s, a diesel engine could run completely without electricity.

If the radiation level by the driver needs to be less than a couple milligauss, then a diesel engine is probably the only option.

The diesel exhaust is an issue. In normal driving it is not a problem, but when stopping at a traffic light wind coming from the back can bring fumes forward and through an open window. Some drivers keep a respirator ready for this event. It helps to use biodiesel fuel, but it's still not great.

Transverse mounted engines

Engines that are mounted sideways (transverse) are usually a problem. The belts are not in the front, so they can't power the radiator fan. Instead, the fan is run by a DC electrical motor.

Some of these engines also have the alternator mounted up against the firewall and close to the driver, as shown in the picture.



Transverse mounted engine in a 1996 Buick, as seen from the front. The belt is on the side instead of in front. Note the alternator placed up against the firewall. The radiator fan is electric.

Features that are not a problem

Electric windows and seats should not be a problem, since they radiate only briefly when the buttons are pushed.

Electric door locks are fine too, for the same reason. Seat warmers and other gadgets can be left off.

Virtually all cars made from about year 2000 have a wireless RFID key. It has a wireless chip embedded in the plastic handle of the key. It radiates very briefly when the key is turned to start the engine and is otherwise inert. (The smart keys are a different technology that recently replaced the RFID keys, as mentioned earlier.)

Engine in the back

Some cars have engines in the back, such as the vintage Volkswagen “beetles” from the 1960s and 1970s, and some sports cars.

The sports cars are all so compact that the engine is no further away from the driver.

As for the vintage Volkswagens, they had all the electricity to the ignition system routed through the ignition key, and the battery was under the back seat, so the driver was still exposed to several milligauss (though still less than most cars). It may be possible to modify the electrical system, but we're not aware of anyone who has tried.

The old Volkswagens had a terrible exhaust problem. They were built before the catalytic converter and the "boxer" engine design was so polluting it was abandoned when stricter emissions requirements were enacted later on.

The old Volkswagen vans have the same "hot ignition key" issue as the beetle.

Vans

Vans tend to have their engines very close to the driver, so the front of the vehicle can be flat with no hood (aesthetic reasons?). This tends to create high radiation levels on the front seats.

Motorcycles

Motorcycles are usually worse than cars, because the engine is so close to the driver. Also, there is no metal hood and metal firewall to shield the radio-frequency from the spark plugs.

We are aware of one diesel motorcycle for sale in the United States. It was originally designed for military use. Whether it is possible to remove the magneto/alternator and use a battery instead is an idea that has not yet been tried.

Other vehicles

There are several types of all-terrain vehicles, golf carts and roundabouts available. They all look enticingly simple, but the engine is usually located very close to the driver. Many of them have the engine below the seat.



A roundabout vehicle with the engine located inside the driver' seat.

The lowest-EMF option

The most realistic of the super-low EMF options are the diesel Mercedes cars from the years 1981-1985. The specific models are the 300D, 300SD and 300CD. The 240D can be considered too, though its engine is too small for mountain driving. Avoid the following models: 300SE/300SEL (gasoline engine), 300TD (poorly designed hydraulic suspension).

The 300D/300SD/300CD cars have basically no electronics in them and use engine-driven pumps for the fuel and the fuel injectors. Since they use diesel engines, they have no spark plugs and no ignition system. The transmissions are mechanical. These cars can be further modified to be virtually radiation free. This author knows six people who have done so, and has heard of others. Three of these modified cars are shown in the picture on the first page of this article.

There is further information about these cars in separate articles on this website (see link at the bottom).

There are a few other diesel cars and trucks that could be considered instead of the Mercedes cars, but none are as well-studied as the Mercedes cars.

Most of the diesel cars built in the early 1980s were rushed to market following the oil crisis and had poorly designed engines. Mercedes have produced diesel

cars since 1960 and had time to get them right. Their engines last well past 300,000 miles (500,000 km) and sometimes to 500,000 miles (800,000 km).

The 1980s Volkswagen diesel Rabbit is not usable, as it has a transverse mounted engine that requires a high-EMF electric fan to be on all the time.

Volkswagen produced a diesel version of their Vanagon from 1983. It had the same engine as the Rabbit, but placed in the back. The author has not inspected the Vanagon, but the radiator probably has an electric fan and the battery is said to be placed under the passenger seat. Some rerouting of wires may be needed.

French automaker Peugeot apparently produced many successful diesel cars in the 1980s that may be worth a look. They were not sold in North America.

Isuzu and Dodge made some diesel pickup trucks that appear worth considering.

Some diesel RVs/caravans were produced in the 1980s, though this author has not inspected any of them. Volkswagen had a diesel camper version of their Vanagon. Winnebago made diesel versions of their LeSharo, Centauri and Phasar models from 1983 to 1986.

Buying older vehicles

In some climates it is difficult to find vehicles much older than a dozen years, because they rust away. In dry climates, such as the American Southwest, rust is not a problem and cars that are twenty or thirty years old are a daily sight.

Do keep in mind that older vehicles that are for sale usually have various problems. It may just be that a window doesn't work, but there can be more serious problems such as a faltering engine or transmission.

Don't expect to find a flawless vehicle for sale; there will be something in need of repair. And every year there may be something new to fix. That is the nature of old cars.

The upside is that older vehicles are simpler to maintain. You can use a backyard mechanic instead of the costlier city shops.

Get a mechanic to check whichever car you are considering. Just make an appointment with a mechanic for the same time you intend to go test drive the car, then drive it to the mechanic. You don't need to tell the seller you are doing this.

If you have the money, consider buying a collector's car. These should be in mint condition, but with a high price tag. The benefit is that it should require fewer repairs.

More information

There are several additional articles explaining the EMF issues in cars and how to mitigate. They are available on www.eiwellspring.org/vehicle.html.

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