

## Start/Stop Technology

### What is start/stop technology?

“Start/stop technology” was invented in the mid-1970s by Toyota as a response to the ongoing oil price crisis. It was intended to reduce overall fuel consumption by limiting the amount of time vehicles spend at idle. When the vehicle comes to a stop, the engine stops running and therefore is no longer consuming fuel while the electrical system of the vehicle still operates as normal using battery power. When the brake pedal is lifted, the engine will start and the vehicle can begin moving. There are some variations of this system in modern vehicles (like hybrid systems) where the vehicle can start moving using electric motors without the combustion engine running at all.

### How does it affect car audio installation?

We can experience issues with low voltage when installing amplifiers that are not “start/stop compatible.” When the starter turns over, it puts a load on the battery and can cause the system voltage to drop significantly. Amplifiers equipped with low-voltage protection circuitry that has a relatively high trigger voltage (such as 11v or 10.5v) could go into protection mode momentarily and interrupt the driver’s listening experience for several seconds. This can get irritating in stop-and-go traffic or driving through a town with many stop lights.

### What is the solution?

KICKER’s engineers have devised some clever ways of dealing with the momentary dips in supply voltage to help make sure the end user has a listening experience without interruptions. We have two tiers of start/stop technology that our amplifiers utilize; fully start/stop compliant and start/stop compatible.

- Fully Start/Stop compliant amplifiers have powerful microcontrollers and clever software to safely operate all the way down to 6.5V for the ultimate user experience.

- Start/stop compatible amplifiers are more economical and do not have microcontrollers inside to control the power supply sections of the amplifier. These can safely operate down to 8V.

If you are unsure whether your amplifier is start/stop compatible or fully start/stop compliant, contact our tech support team at 405-533-6007.