

## Radio Frequency Interference Leaves Muranos with No-Start Symptoms

Two ladies in like Nissan Muranos were chatting in a shopping center parking lot. After loading their groceries, both encountered a no-start condition. What are the chances of this occurring with two like vehicles parked next to each other? It is all about the strength of the signal and it is not uncommon to encounter this symptom, especially considering today's electronics and communication accessories and devices.

Nothing is more frustrating than depressing the Start/Stop button and getting a No Fob/No Key Detected message, and this is what both ladies encountered. Following several minutes of panic and uncertainty, one of them called a family member who was a technician. He gave them the necessary starting procedure, which involved one foot on the brake, and placing the fob on the Start/Stop button while simultaneously depressing the button. Both vehicles immediately started.

Most vehicles with push button start have an alternate procedure to recognize the signal from the fob. Some have a slot/pocket in the console or glove box in which the fob should be placed, while others such as the Nissan applications mentioned require holding the fob next to the Start/Stop button while depressing it. Make certain your customer is familiar with the alternate starting procedure for their vehicle, as it is only a matter of time until they encounter No Fob/No Key message and a no-start condition.

### SIGNAL STRENGTH

When the previously mentioned symptoms occur, the first consideration is the condition of the battery in the fob. Testers are available to check the signal strength and they are not expensive. The condition of the vehicle battery should also be a consideration. Battery discharge can be an issue with vehicles that are not driven daily/weekly. Never leave the fob in the vehicle or within 25 feet of the vehicle, as the computers will remain awake promoting parasitic current drain, resulting in a discharged battery.

Assuming the battery and system voltage meets specs, electrical interference is usually the next consideration and it can be a challenge to isolate the

cause of the signal interference. Every month we add to our arsenal conditions that can promote Radio Frequency Interference (RFI) disrupting the start switch signal, resulting in the No Fob/No Key message. And that is what the Muranos encountered.

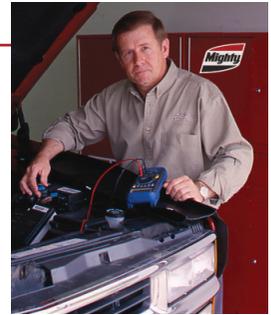
### RADIO FREQUENCY INTERFERENCE

We are surrounded by radio frequencies and fortunately they are out of range of human perception. Radio frequency interference (RFI) occurs when multiple frequencies or signals start conflicting with electrical/electronic devices. And when they do, the result can be some difficult issues to accurately diagnose. While many of the symptoms may result in minor performance issues, some cases may result in life threatening conditions. For example: while cruising at highway speeds in overdrive, the transmission suddenly shifts to first gear. That will certainly test your driving skills and it has happened.

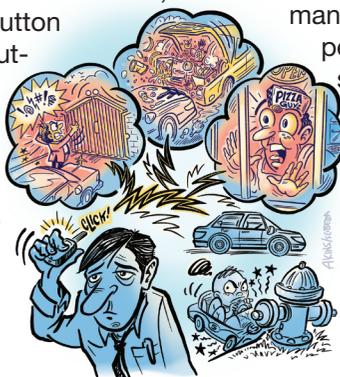
When using a complex radio frequency system, certain limitations and challenges may affect how the system functions, sometimes resulting in a customer locked out of the vehicle or a no-start symptom with a No Fob/No Key Detected message posted. Following are some conditions that may affect the operation of the system:

Radar detectors, communication devices/2-way radios, cell phones, cell phone chargers, laptop computers, electronic accessories/devices, fluorescent lighting, electronic advertising signs, high RFI traffic areas such as pay-at-the-pump gas stations, electronic devices from a nearby vehicle, charging devices, vehicle immobilizer keys from other vehicles, keyless access transmitters from other vehicles, gate door entrance devices, parking access cards attached to key ring, fuel station speed passes attached to key ring, access swipe passes attached to key ring, USB power ports in use and other interference conditions to be determined.

These are the real world conditions that the technician must be prepared to deal with when making a diagnosis.



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Technical Services



With one touch of his FOB, Vince jams the entrance to a gated community... pops a trunk at a busy intersection... and activates a false ad on an electronic highway sign for FREE PIZZA!