

Intoximeters

World Leader in Breath Alcohol Testing for Over Sixty Years

When Radio Frequency (RF) is detected by the Alco-Sensor® IV, the instrument will automatically void the current test process to prevent any possible interference with the test result.

- In our factory courses, we train the Breath Alcohol Technicians to move away from the source of the RF, or turn off the source and conduct another test.
- It is not necessary to conduct an accuracy check after an RFI (Radio Frequency Interference) VOID.

It is important to understand that when a radio frequency signal is detected by the Alco-Sensor® IV it is likely that the instrument would not have been adversely affected if the test was allowed to proceed. In fact, when the Alco-Sensor® IV was originally put into production in the early 1990's, the design strategy for the instrument to address the RF concerns was to shield the instrument's electronics from RF penetrating the instrument's case (metal fibers are impregnated in the plastic case) and in addition, building a RF detector within the case to identify when RF had in fact penetrated the case. It was not until several years later that the instrument was tested by a physical testing laboratory to see if the unit was susceptible to levels of RF that would likely be encountered in the field. As the physical testing demonstrated, the instrument has proven to be insensitive to commonly encountered RF levels and it can be argued that the RF detector is a vestigial circuit on the instrument.

When the RF sensor that is located on the main circuit board in the Alco-Sensor® IV detects the presence of RF within the Alco-Sensor® IV case, a signal is sent to the instrument's processor which is used to flag the RFI VOID message. The term "RFI VOID" is often misinterpreted as a message that indicates that the instrument has detected a radio frequency signal that would have interfered with the operation of the instrument. Instead, it merely indicates that a RF signal has been detected. While this is a subtle distinction, it is an important distinction as the physical testing has demonstrated that this detector is primarily in place to eliminate the possibility of RF from being present even though it has been shown to have no influence on the instrument's analyses of breath test samples. This strategy is similar to what an airline requests from its passengers during flight. They request passengers to turn off cell phones and other RF producing devices while a plane is in flight so that they do not interfere with the avionic instruments on board. It is not that having your phone on during a flight would affect the ability of the instrumentation used to fly the plane, instead it is a precaution since certain frequencies and field strengths have been shown to affect electronics. Removing the possibility is prudent.

As a result, when you get an RFI VOID message on the Alco-Sensor® IV, we would suggest one of several approaches to complete testing. With analog transmitting devices, do not transmit during the testing process. With digital transmitting devices (Cell phones, GPS devices, TETRA radios) either turn them off during testing or remove them from the testing environment. With Alco-Sensor® IVs that are attached to a computer or a printer by a wire, be sure that the wire is shielded and is properly attached to the printer or computer. Finally, on rare occasions, we are aware that older computer monitors can generate an RFI VOID; however, that event has only been known to occur when the instrument is placed within inches of the display during the test sequence.

I hope this information has been helpful in explaining the RFI message on the Alco-Sensor® IV and provides some insight on how to avoid the message all together.