

UNDERSTANDING CRISISALERT:

Safe for Users with Medical Devices

The FCC has designed the 2.4 GHz frequency band for unlicensed use for Industrial, Scientific, and Medical devices. The 2.4 GHz frequency band is used by most Wi-Fi devices, all Bluetooth devices (including medical devices), and all Zigbee devices. The Centegix™ CrisisAlert™ System operates in the 2.4 GHz frequency band using both Bluetooth and Zigbee networking protocols. These protocols are widely used in consumer products, commercial products, and industrial products throughout the world.

Part of the FCC's responsibility is to require all electronic devices on the market remain under certain standards of acceptable RF emissions. Our Bluetooth chip is manufactured by Nordic Semiconductor, one of the top producers of Bluetooth chips and our Zigbee chip is manufactured by Texas Instruments, one of the top producers of Zigbee chips. The chips we use have been installed in hundreds of millions of devices around the world. We believe that these chips are unlikely to cause interference with other devices because they are both low power and are within FCC tolerances and channel guidelines.

Implanted medical devices have to undergo strict testing to ensure that their functionality is not inhibited by other electronic devices, such as cellphones, Wi-Fi or Bluetooth electronic systems that would typically surround them. For this reason, the FDA and the FCC currently work together to give manufacturers standards for developing medical devices to lower the risk of EMI (electromagnetic interference).¹ They also provide extensive tests to make certain medical device manufacturers produce technology that can withstand the acceptable levels of RF.² Even as precautions are taken to ensure that the risk of interference is low, staff and students should still defer to their primary physician for the most pertinent information on any implanted devices they may have. The following details a few common implants and medical concerns along with their relation to Bluetooth and our technology.

Centegix has adopted standard FCC compliant methodology of creating a Bluetooth network that will not impact or block other Bluetooth enabled devices from connecting or syncing. If users of a Bluetooth enabled medical device are experiencing connectivity issues, we encourage them to reach out to the manufacturer to identify any troubleshooting steps they can navigate, or review any of the many forums available online providing tips to utilizing and connecting the device.

Pacemakers and Implanted Cardioverter Defibrillators

According to the American Heart Association³, Bluetooth and other wireless technologies pose little to no risk on the performance of ICDs and Pacemakers. The CrisisAlert™ Badge uses a transmitter comparable in power to a Bluetooth headset or wireless speaker.

Hearing Aids

Hearing aids with Bluetooth may experience interference when they are in contact with other devices that use the 2.4 GHz frequency band – such as cell phones, smart speakers, Wi-Fi networks, televisions, and cordless phones.⁴If this occurs, contact your clinician for assistance.

Seizures Concerns

The CrisisAlert™ strobes do flash as a part of the technology's design to inform students and staff that an incident has occurred and what protocols to follow. These devices follow the guideline of having a flash rate below 2 Hertz (120 flashes/minute) with additional breaks according to recommendations provided by the Epilepsy Foundation. "To reduce the likelihood of the strobe light triggering a seizure, the Epilepsy Foundation's professional advisory board recommends that the flash rate be kept to under 2 Hertz with breaks every so often between flashes."⁵