# *The MotionMonitor xGen Hardware Guide: Configuring Xsens with Delsys Trigno*

Q: How does the wireless communication of Delsys Trigno interfere with the wireless communication of Xsens?

Both systems use wireless configurations for sensors to communicate with their respective base stations. Typically, a WiFi analyzer is useful in choosing a radio frequency channel over which an Xsens system will communicate. The diagram below provides an overview of the 2.4GHz channel spectrum that Xsens Awinda station is based on (bottom row), and how WiFi channels use this spectrum (top row).
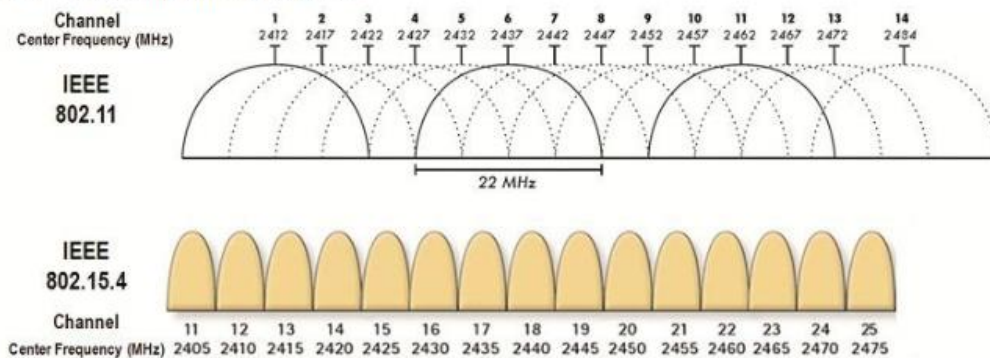

It is best to choose a channel (from 11 to 25) for Xsens communication that is not covered by WiFi use. For example, if a WiFi analyzer indicated that 50% of Channel 1 is already in use, IEEE 802.15.14 channels 11, 12, 13, or 14 would not be good to choose for Xsens communication. Typically, channels 11, 15, 20, and 25 are not used by WiFi.

Delsys Trigno also uses this spectrum, but it will not be apparent on a WiFi analyzer. Trigno systems have preset frequency settings of "A", "B", "C", or "D" that use the 2.4GHz spectrum. These can be accessed in the Settings Tab of Configure in the Trigno Control Utility.
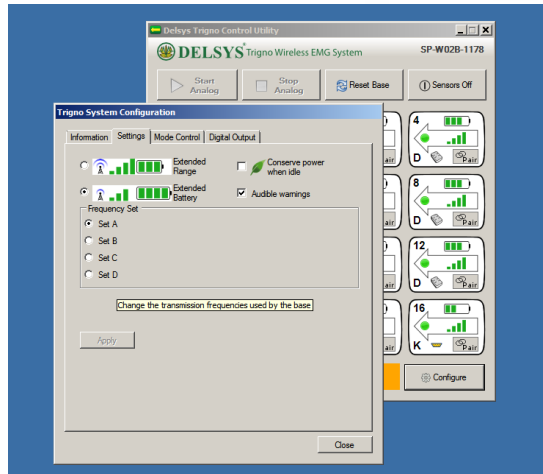
When collecting EMG data with Xsens data, the Trigno system (in any frequency setting) will affect communication over radio frequency channels 13, 20, and 25. If Xsens is using one of these three channels, there may be issues with hardware activation due to inability of all sensors to wirelessly connect to the base station. If activation is successful, dropouts in data may occur. An example of this dropout is seen below for Xsens sensors 1, 2, and 5.
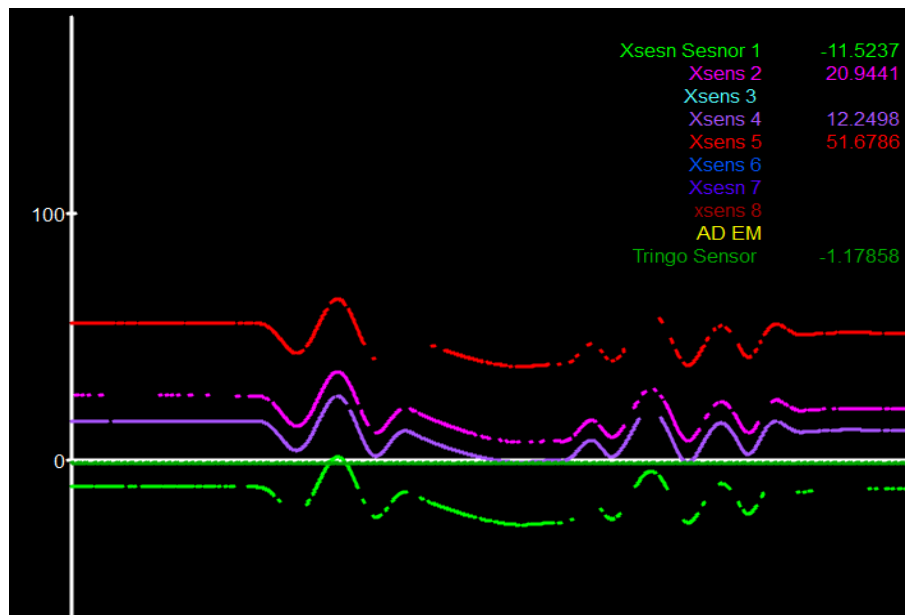
Wireless communication is subject to change in different environments. Radio channel selections may have to be changed if a system is used portably and data is collected in different spaces. It is recommended that channels are tested for each environment to determine which allow for the least amount of drop outs.