detailed description and the appended claims, taken in conjunction with the accompanying drawings and this background of the disclosure.

SUMMARY

[0011] According to the Detailed Description, a method for determining an occurrence of a spike in one of a plurality of neural signals is provided, the spike relating to an action potential in the one of the plurality of neural signals. The method includes sampling the plurality of neural signals at a sampling frequency; extracting frequency features from each of the plurality of neural signals during sampling of the plurality of neural signals; monitoring the extracted frequency features to determine characteristics of the one of the plurality of neural signals indicative of an occurrence of a spike; and sending the one of the plurality of neural signals to an analog-to-digital converter (ADC) when the occurrence of the spike is determined, wherein the monitoring comprises checking a plurality of consecutive signals from the extracted frequency features and determining the occurrence of the spike when an amount of change between two consecutive neural signals of the plurality of consecutive neural signals is greater than a predetermined potential level or when the plurality of consecutive neural signals all have a same direction of signal change.

[0012] In accordance with another aspect, a device for determining an occurrence of a spike in one of a plurality of neural signals is provided, the spike relating to an action

potential in the one of the plurality of neural signals. The device includes a sampling unit, a spike detector and an ADC. The sampling unit is adapted to sample the plurality of neural signals at a sampling frequency. The spike detector is coupleable to the sampling unit and adapted to extract frequency features from each of the plurality of neural signals during sampling of the plurality of neural signals. The spike detector is further adapted to monitor the extracted frequency features to determine characteristics of the one of the plurality of neural signals indicative of an occurrence of a spike. The spike detector is configured to send the one of the plurality of neural signals to the ADC when the occurrence of the spike is determined, wherein during monitoring the spike detector is configured to check a plurality of consecutive signals from the extracted frequency features and determine the occurrence of the spike when an amount of change between two consecutive neural signals of the plurality of consecutive neural signals is greater than a predetermined potential level or the plurality of consecutive neural signals all have a same direction of signal change.