CLAIMS

1. A computer implemented system for performing electromotive force analysis of a storage device comprising:

an inductance coil configured to be positioned in proximity to a drive controller of the storage device for capturing data corresponding to electromotive force energy generated by the storage device;

a coprocessor chipset configured to be communicatively coupled to the drive controller, wherein the coprocessor chipset captures from the drive controller, data corresponding to operation of the storage device while capturing the data corresponding to electromotive force energy generated by the storage device from the inductance coil;

at least one signal wire for communicating the data corresponding to electromotive force energy generated by the storage device from the inductance coil to the coprocessor chipset;

wherein the coprocessor chipset performs analysis based on the data corresponding to electromotive force energy generated by the storage device and the data corresponding to operation of the storage device to detect any anomaly in the operation of the storage device.

2. The computer implemented system of claim 1, wherein the coprocessor chipset correlates the data corresponding to electromotive force energy generated by the storage device with the data corresponding to operation of the storage device, and wherein an anomaly in the operation of the storage device is detected if the correlation exceeds a pre-determined threshold.

3. The computer implemented system of claim 2, wherein upon detection of the anomaly, the coprocessor chipset further derives a spectral image based on the data from the

corresponding to electromotive force energy generated by the storage device and the data corresponding to operation of the storage device to identify the anomaly.

4. The computer implemented system of claim 3, wherein the coprocessor chipset identifies the anomaly by comparing the spectral image against a database of spectral image signatures.

5. The computer implemented system of claim 3, wherein the coprocessor chipset is an Artificial Intelligence (AI) coprocessor chipset configured to learn the operation of the storage device, and wherein the AI coprocessor chipset identifies the anomaly by comparing the spectral image against a database of spectral image signatures that is trained by the AI coprocessor chipset.

6. The computer implemented system of any one of the preceding claims, wherein the coprocessor chipset performs analysis in real time to detect any anomaly in the operation of the storage device.

7. The computer implemented system of any one of claims 1 to 6, wherein the coprocessor chipset communicates with the drive controller utilizing NVMe protocol.

8. The computer implemented system of any one of claims 1 to 6, wherein the coprocessor chipset communicates with the drive controller utilizing AHCI protocol.

9. The computer implemented system of any one of the preceding claims, wherein the anomaly is caused by malware.

10. The computer implemented system of any one of the preceding claims, wherein the coprocessor chipset interrupts the operation of the storage device when an anomaly is detected.

11. The computer implemented system of any one of the preceding claims, wherein

the computer implemented system is integrated with the storage device, and wherein the storage device is a solid state drive.

12. The computer implemented system of claim 11, further comprising a power management integrated circuit (PMIC) for powering the coprocessor chipset separately from the drive controller.

13. The computer implemented system of claim 11 or 12, furthering comprising a boundary guard trace, wherein the coprocessor chipset is positioned within the boundary guard trace to protect against unintentional signals, and wherein the inductance coil and the drive controller are positioned outside the boundary guard trace.

14. A computer implemented method for performing electromotive force analysis of a storage device comprising the steps of:

capturing data corresponding to electromotive force energy generated by the storage device by an inductance coil positioned in proximity to a drive controller of the storage device that controls the operation of the storage device;

communicating the data corresponding to electromotive force energy generated by the storage device to a coprocessor chipset,

capturing a data corresponding to operation of the storage device from the drive controller while capturing the data corresponding to electromotive force energy generated by the storage device;

communicating the data corresponding to operation of the storage device to the coprocessor chipset;

analyzing the data corresponding to electromotive force energy generated by the storage device and the data corresponding to operation of the storage device, using the

coprocessor chipset to detect any anomaly in the operation of the storage device.

15. The method of claim 14, further comprising:

correlating the data corresponding to electromotive force energy generated by the storage device with the data corresponding to operation of the storage device to detect an anomaly in the operation of the storage device.

16. The method of claim 15, further comprising:

deriving a spectral image based on the data corresponding to electromotive force energy generated by the storage device and the data corresponding to operation of the storage device, upon detection of the anomaly, and

comparing the spectral image against a database of spectral image signatures to identify the anomaly.

17. The method of claim 16, further comprising learning the operation of the storage device by Artificial Intelligence (AI) to obtain the database of spectral image signatures.

18. The method of any one of claims 14 to 17, wherein the storage device is a solid state drive.

19. The method of any one of claims 14 to 18, further comprising the step of:

interrupting the operation of the storage device when an anomaly is detected by the coprocessor chipset.