CLAIMS

I claim:

1. A wearable compact wireless twelve lead ECG system, said system comprising a wearable device comprising:

a first patch disposed with a first set of active capacitance sensors ~~disposed within said system~~, wherein said first set of active capacitance sensors is configured to collect six limb leads;

a second patch disposed with a second set of active capacitance sensors ~~disposed within said system~~, wherein said second set of active capacitance sensor is configured to collect six chest leads;

a set of surface noise sensors disposed with said first set or second set of active capacitance sensors, wherein the set of surface noise sensors include a ~~said~~ first set or a second set of surface noise sensors ~~are~~ configured to reduce noise generated while collecting said limb leads and chest leads; ~~and~~

a communication module disposed within said system, wherein said communication module is configured to communicate said collected leads in the form of a twelve lead ECG to multiple devices~~.~~, wherein the first patch is in communication with the second patch.

~~2. The system of claim 1, wherein said wearable device comprises a first patch and a second patch, wherein the first patch is disposed with said first set of active capacitance sensors, and the second patch is disposed with said second set of active capacitance sensors.~~

~~3. The system of claim 2, wherein said first patch is in communication with said second patch.~~

~~4.~~2. The system of claim 1, wherein said first set of active capacitance sensors comprises at least three capacitance sensors.

~~5.~~3. The system of claim 1, wherein said second set of active capacitance sensors comprises at least six capacitance sensors.

~~6.~~4. The system of claim 3, wherein said communication between said first set of active capacitance sensors and said second set of active capacitance sensors is carried out through wired or wireless communication.

~~7.~~5. The system of claim 1, wherein two sensors of said first set of active capacitance sensors are configured to be placed on a left upper part of a chest when in use, wherein the two sensors are positioned 5 cm apart from each other, and a third sensor is configured to be placed in a posterior auxiliary line when in use at a same horizontal plane as the second set of active capacitance sensors.

~~8.~~6. The system of claim 1, wherein ~~a position of~~ said second set of active capacitance sensors configured to be placed on a chest when in use is based on a difference of the position of each sensor in said second set of sensors from a center of a formed Einthoven triangle, wherein the difference is predefined to meet all conditions in order to collect the twelve lead ECG.

~~9.~~7. The system of claim 1, wherein said first set and second set of active capacitance sensors are enclosed within an electronic layer along with the surface noise sensors.

~~10.~~8. The system of claim 1, wherein said system comprises grounding sensors configured to provide a return path to faulty or abnormal electric conditions.

~~11.~~9. The system of claim 1, wherein said system comprises a battery to power up said system.

~~12.~~10. The system of claim 1, wherein said communication module comprises one or more wireless communication protocols such as BLE, Bluetooth, Wifi, or Zigbee.

~~13.~~11. The system of claim 1, wherein said multiple devices are one or more of a user device, a server, and a cloud storage.

~~14.~~12. The system of claim 1, wherein said multiple devices are further configured to process received data and represent the processed data in a readable manner.