CLAIMS

1. A detection system of multi-index coagulation items, comprising: a housing, a detection and heating module, a battery module, a touch display screen, and a mainboard, wherein the housing comprises an upper casing and a lower casing, and the housing has an enclosed space by the upper casing abutting the lower casing; the mainboard is disposed between the upper casing and the lower casing and in the enclosed space; the touch display screen is disposed on the upper surface of the upper casing, and is connected to the mainboard; the detection and heating module is disposed in the enclosed space and at the front end of the lower casing, and is connected to the mainboard; the battery module is disposed at the bottom of the tail end of the lower casing, and is connected to the mainboard; and a detection inlet for a test card to be inserted is disposed at the front end of the housing.

2. The detection system of multi-index coagulation items according to claim 1, wherein a scanning module is disposed beside the detection inlet at the front end of the lower casing, and is connected to the mainboard.

3. The detection system of multi-index coagulation items according to claim ~~3~~1, wherein the detection and heating module comprises a retaining groove, a heating plate, a heating plate retaining groove, a first temperature sensor, a PCB board, and a test card connector, wherein the test card connector is disposed on the PCB board, and is connected to the mainboard via a circuit connector; the heating plate is used for heating at a constant temperature and mounted in the heating plate retaining groove, and the heating plate retaining groove is mounted on the PCB board at one side of the test card connector; the first temperature sensor is disposed below the heating plate and in the heating plate retaining groove; and the retaining groove is mounted on the upper surface of the heating plate, and is engaged with the heating plate retaining groove and the PCB board successively.

4. The detection system of multi-index coagulation items according to claim 3, wherein the test card connector is internally provided with a resilient plate, and is pressed against a

conductive electrode of the test card via the resilient plate to establish a conductive connection.

5. The detection system of multi-index coagulation items according to claim 3, wherein an insert groove is disposed on both sides of the heating plate retaining groove, and an insert is disposed on both sides of the retaining groove; a horizontally extending and penetrating heating plate connecting hole is disposed on two sides of the end near the test card connector in the heating plate retaining groove; two connecting joints are provided on one end of the heating plate, and connected to the mainboard respectively through the heating plate connecting holes; a temperature sensor groove is recessed in the middle of one end near the test card connector in the heating plate retaining groove; a square hole running through the thickness of the PCB board is recessed in the position connected to the heating plate retaining groove on the PCB board, and an open square groove outwardly extending is disposed at the front end of both sides of the square hole; two square grooves are recessed in and penetrate through the portion between the square hole and the test card connector on the PCB board; and the heating plate retaining groove and the retaining groove are engaged with the open square grooves and the square grooves by inserting the inserts through the insert grooves respectively.

6. The detection system of multi-index coagulation items according to claim 5, wherein the first temperature sensor is embedded in the temperature sensor groove, and is connected to the mainboard by passing a flexible joint connected to the first temperature sensor through the square hole; the connecting joints are flexible connecting joints, and the flexible connecting joints pass down through the open square grooves respectively via the heating plate connecting holes, and are then connected to the mainboard.

7. The detection system of multi-index coagulation items according to claim 4, wherein the detection inlet is located at one side of the front end of the upper casing, and extends from the upper casing through the mainboard and to the lower casing; the detection inlet is an internally arched detection inlet formed by curving the upper casing inwards with an arc being concave downward, and extending to an arc-shaped detection inlet of the mainboard and the

lower casing successively and then joining to a platform horizontally extending in parallel to the lower casing towards the inside of the lower casing; in this way, the test card is fitted into the detection and heating module, and the sample loading hole is located at the internally arched detection inlet after the connection, the test card is located above the heating plate, and an electrode terminal of the test card is inserted into the test card connector.

8. The detection system of multi-index coagulation items according to claim 3, wherein a CPU, a scanner wire holder, an electrode acquisition and op-amp module, and a display screen wire holder are disposed at the front end of the mainboard; a battery management module and a power interface are disposed on the tail end of the mainboard; a WiFi module, a Bluetooth module, and a second temperature sensor are disposed on the middle part of the mainboard; the scanning module is in bidirectional data connection with the CPU via the scanner wire holder, the test card is in multi-channel bidirectional connection with the CPU via the electrode acquisition and op-amp module, and the touch display screen is in bidirectional connection with the CPU via the display screen wire holder; the battery management module enables charging and discharging control over the battery module via a power interface which is embedded in the bottom of the housing; the battery management module, the WiFi module, and the Bluetooth module are all in bidirectional connection with the CPU; and the detection and heating module and the second temperature sensor are both in unidirectional connection with the CPU.

9. The detection system of multi-index coagulation items according to claim 8, wherein a switch key is disposed on one side of the touch display screen at one end near the detection inlet on the upper casing; the mainboard is further provided with a key board wire holder and a switching circuit; and the switch key is connected to the mainboard via the key board wire holder, and the mainboard controls the switch key via the switching circuit.

10. The detection system of multi-index coagulation items according to claim 9, wherein a status lamp is disposed above one side of the touch display screen in the upper casing, and is connected to the mainboard via a status lamp wire holder; the status lamp is used to observe the status from an aperture provided in a corresponding position on the surface of the upper

casing, and the status light displays the power status and the status of whether the detection result is normal or not through different colors.

11. The detection system of multi-index coagulation items according to claim 7, wherein at least one battery contact is disposed on a position corresponding to the battery module on both sides of the mainboard, and a battery is connected to the mainboard via the battery contacts, so as to supply power to the mainboard.

12. The detection system of multi-index coagulation items according to claim 10, wherein a communication interface is disposed on the tail end of the housing, and the communication interface passes through the housing and is fixed on the mainboard.

13. The detection system of multi-index coagulation items according to claim 7, wherein the resilient plate has a support portion which horizontally extends, and then curves down and inwards to form a pressing portion; the pressing portion extends up and inwards to form a tail end portion of the resilient plate; and the resilient plate is in contact with the conductive electrode of the test card via the pressing portion.

14. The detection system of multi-index coagulation items according to claim 6, wherein an anti-slip strip is disposed on a position corresponding to the detection and heating module on the lower casing; the upper surface of the retaining groove is provided with a plurality of inner groove cells recessed in a thickness direction of the retaining groove; there are four inserts in total on the two sides of the retaining groove, and correspondingly, there are four insert grooves on the two sides of the heating plate retaining groove.

15. The detection system of multi-index coagulation items according to claim 12, wherein the first temperature sensor in the detection and heating module is in unidirectional connection with the CPU.

16. The detection system of multi-index coagulation items according to claim 12, wherein the test card is capable of detecting five blood coagulation indexes, and correspondingly, the test card is in five-channel bidirectional connection with the CPU via the electrode acquisition and op-amp module.

17. The detection system of multi-index coagulation items according to claim 12, wherein the mainboard is further provided with a base connector and a printer module; the base connector is used for connecting to a printer or for charging, and the printer module is in bidirectional connection with the CPU.

18. The detection system of multi-index coagulation items according to any one of claims 1 to 17, wherein the test card is a multi-channel microfluidic detection chip comprising a sample loading hole, a plurality of mutually independent detection chambers, a micro channel, and a conductive electrode; the sample loading hole is in communication with the detection chambers through the micro channel, and the detection chambers are connected to the conductive electrode; the micro channel comprises one main flow channel and a plurality of sub-microfluidic channels; the tail end of the main flow channel is branched into the plurality of sub-microfluidic channels; the plurality of sub-microfluidic channels is in communication with the plurality of mutually independent detection chambers in a one-to-one correspondence, and the front end of the main flow channel is in communication with the sample loading hole.