

CLAIMS

1. A protective sleeve (1) of an electronic device (3) for use in a banking industry comprising:
 - 5 a body (2) having a recess for accommodating the electronic device (3);
 - a circuit board (8) embedded in the body (2), having one or more input and/or output ports;
 - a connector tab extended to the recess for contacting with a socket connector of the electronic device (3);
 - 10 means (4) for retrieving biometric information of a person;
 - a card reader is embedded in the body for contactlessly retrieving information from a RFID card; and
 - at least one external connector (6) for connecting one or more external electronic devices (13);
 - 15 wherein the biometric information retrieval means (4), the card reader, the external connector (6) and the connector tab are connected to the input and/or output ports of the circuit board (8) for establishing a communication link between the biometric information retrieval means (4), the card reader, the external connector (6) and the electronic device (3) when the electronic device (3) is attached to the connector tab
 - 20 and seated in the recess;
 - characterized in that the circuit board (8) includes a microcontroller having four UARTs, the first three UARTs are directly linked to a UART communication layer (11) and the fourth UART is linked to additional four UARTs via a multiplexer..
- 25 2. A protective sleeve (1) according to claim 1, further comprising a socket (5) for receiving a card, the socket (5) is coupled with the card reader to retrieve information stored in the card.
3. A protective sleeve (1) according to claim 1 or claim 2, wherein the first three

UARTs are configured to perform the function of transmit data, receive data, clear to send, and request to send, whereas the additional four UARTs are only configured to perform the function of transmit data and receive data.

- 5 4. A protective sleeve (1) according to any one of claims 1 to 3, wherein the biometric information retrieval means (4) is a fingerprint device, a iris device, a voice recognition device, a face recognition devices, a hand geometric reader, finger vein reader, hand palm reader, or in any combination thereof.
- 10 5. A protective sleeve (1) according to any one of claims 1 to 4, wherein the external electronic device (13) is a SIM card reader, a passport reader, a printer, a scanner, a cash or card collecting machine, a cash or card dispensing machine, a card embosser machine, a pin encryption device, a kiosk terminal, a cheque collector, a cheque scanner, a cheque printer, or in any combination thereof.
- 15 6. A protective sleeve (1) according to any one of claims 1 to 5, wherein the microcontroller (9) incorporates with:
an electronic device communication module (14) for establishing signal transmission between the electronic device (3) and the circuit board (8),
20 a biometric reading module (15) for establishing signal transmission between the biometric information retrieval means (4) and the circuit board (8),
a card reading module (16) for establishing signal transmission between the card reader and the circuit board (8), and
an external reading module (19) for establishing signal transmission between the
25 external electronic device (13) and the circuit board (8).
7. A protective sleeve (1) according to claim 6, wherein the circuit board (8) is powered by an external power source through an external power source connector (7).

8. A protective sleeve (1) according to claim 6, wherein the circuit board (8) is powered by an internal power source rechargeable through the external power source connector (7).

5 9. A protective sleeve (1) according to any one of claims 1 to 8, wherein the electronic device (3) is a personal digital assistants (PDA), smart phones, tablets, laptops, netbooks, phablets, phoblets, iPad, or any suitable means which capable of processing data and performing data transmission.

10 10. An electronic (1) according to any one of claims 1 to 9, wherein the electronic device (3) is in communication with a server via a communication network, configured to obtain biometric information of a person from the electronic device (3), to authenticate the person via the obtained biometric information, and to send a feedback signal to the electronic device (3).

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11. A protective sleeve (1) according to any one of claims 1 to 10, wherein the electronic device (3) is in communication with a server via a communication network, configured to transmit relevant biometric information of a person to the electronic device (3) for authentication and verification.

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