

CLAIMS

What is claimed is:

1. An embedded operating system for achieving Bluetooth slave device function, wherein comprising:

a mobile terminal, provided with an embedded intelligent operating system, wherein the embedded intelligent operating system is Android or Linux, and wherein the mobile terminal is an intelligent robot;

a Bluetooth module, configured to at least work in a Bluetooth slave device mode;

an interface module, connecting the Bluetooth module and the mobile terminal;

Wherein, the mobile terminal drives the Bluetooth module to operate through the interface module;

wherein the Bluetooth module comprises:

a control unit;

a Bluetooth receiving and transmitting unit, connected to the control unit;

an external interface unit, respectively connected to the control unit and the interface module;

a Bluetooth antenna, connected to the Bluetooth receiving and transmitting unit;

wherein, the control unit is connected to the mobile

terminal through the external interface unit, and is configured, according to the instructions from the mobile terminal, to control the Bluetooth receiving and transmitting unit to communicate with the mobile terminal through the external interface unit;

wherein at the same time, under control of the control unit, the Bluetooth receiving and transmitting unit communicates with an external Bluetooth master device in the form of a Bluetooth slave device, and the Bluetooth antenna is used to transmit and receive radio signals;

wherein the control unit comprises:

a first storage unit, configured to store a complete protocol stack of the Bluetooth slave device function, said complete protocol stack of the Bluetooth slave device function being configured to control the operation of the Bluetooth receiving and transmitting unit;

a second storage unit, configured to store an interface protocol stack, said interface protocol stack being configured for communication between the Bluetooth module and the mobile terminal;

wherein the control unit is formed by a single chip microcontroller with low power consumption, the protocol stack of the Bluetooth slave device function being developed in the single chip

micoyo, written in C language, which would form the first storage unit with the single chip micoyo's storage space, and the second storage unit being formed in the single chip micoyo's storage space, which can store drivers and the interface protocol stack of the external interface unit;

and wherein through the Bluetooth receiving and transmitting unit, the Bluetooth module receives Bluetooth data packets from the Bluetooth antenna, and after treatment of protocol stack in the control unit, transmits the data to the mobile terminal, or receives data from the mobile terminal then encapsulating as Bluetooth data packets, transmitting to the Bluetooth receiving and transmitting unit through the Bluetooth antenna.

2. The system as claimed in Claim 1, wherein the external interface unit and the interface module are serial interfaces.
3. The system as claimed in Claim 2, wherein the serial interfaces could be serial asynchronous interfaces, serial peripheral interfaces, internal integration bus or the serial fast input and output interface.
4. A method for using an embedded operating system to achieve Bluetooth slave device function, comprising:

Step 1: providing a Bluetooth module, the Bluetooth module, at

minimum, being configured to work in a Bluetooth slave device mode and to have complete protocol stack of the Bluetooth slave device function;

Step 2: connecting the Bluetooth module to a mobile terminal through an interface module;

Step 3: the mobile terminal drives the Bluetooth module to operate its own the protocol stack of the Bluetooth slave device function;

Step 4: the Bluetooth module conducts data communication with the mobile terminal through the interface module;

wherein the interface module is a serial interface;

wherein the mobile terminal is an intelligent robot and employs an operating system which is Android or Linux;

wherein at the same time, under control of a control unit, a Bluetooth receiving and transmitting unit communicates with an external Bluetooth master device in the form of a Bluetooth slave device, and a Bluetooth antenna is used to transmit and receive radio signals;

wherein the control unit is formed by a single chip micropy with low power consumption, a protocol stack of the Bluetooth slave device function being developed in the single chip micropy, written in C language, which would form a first storage unit with the single chip micropy's storage space, and a second storage unit being formed in the single chip micropy's storage space, which can store drivers and interface protocol stack of an external interface unit;

and wherein through the Bluetooth receiving and transmitting unit, the Bluetooth module receives Bluetooth data packets from the Bluetooth antenna, and after treatment of protocol stack in the control unit, transmits the data to the mobile terminal, or receives data from the mobile terminal then encapsulating as Bluetooth data packets, transmitting to the Bluetooth receiving and transmitting unit through the Bluetooth antenna.