# ELECTRONIC DEVICE

## TECHNICAL FIELD

[0001]

The present invention relates to an electronic device.

## BACKGROUND ART

[0002]

Conventionally, there has been a technique for suppressing power supply by a constant current, for example, as disclosed in Patent Document 1. For example, according to the technique described in Patent Document 1, an LED lighting apparatus is provided in which a light emitting state is detected by a photodiode, and a constant current circuit is controlled in accordance with a detected value of the photodiode to control the current flowing through the light emitting diode. However, the applicant of the present application has developed an electronic device which performs communication using power line communication and receives power supply, and has filed a patent application as Japanese Patent Application No. 2017-156827.

[0003]

Patent Document 1: Japanese Unexamined Patent Application, Publication No. 2003-163090

## DISCLOSURE

[0004]

Improvement in power supply efficiency has been demanded when using power line communication. However, it is not possible to sufficiently satisfy such a demand simply by applying the conventional technique including the abovementioned Patent Document 1.

[0005]

The present disclosure has been made in view of such a situation, and an object thereof is to improve power supply efficiency when performing power line communication.

[0006]

In order to achieve the above, an electronic device according to an aspect of the present disclosure, which has at least a portion of a constant current circuit network connected to a predetermined load, includes a control unit configured to control an applied voltage to the predetermined load based on a state relating to the predetermined load. In an aspect, there is an electronic device comprising: a constant current circuit network comprising a module comprising a predetermined load and an electronic device; a path in which at least a portion of a voltage to be applied to the predetermined load is generated when a current flows in the constant current circuit network;

a switch unit configured to switch between short-circuit of the path and release of the short-circuit of the path; and

a control unit configured to switch, in a case in which, in the constant current circuit network, information for communication is transmitted as a first pulse which repeats high and low voltages at a first frequency, a state of the switch unit at a second frequency higher than the first frequency, and control an applied voltage to the predetermined load in a form of a second pulse which repeats high and low voltages at the second frequency, in the module, wherein the control unit is configured to switch the state of the switch unit to a state of the short-circuit when a potential of the path is higher than a prescribed voltage, and switch the state of the switch unit to a state of the release of the short-circuit when the potential of the path is lower than a prescribed voltage.

[0007]

According to the present disclosure, it is possible to improve power supply efficiency when performing power line communication.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

FIG. 1 is a block diagram showing a configuration of an

CLAIMS

1. An electronic device comprising:

a constant current circuit network comprising a module comprising a predetermined load and an electronic device;

a path in which at least a portion of a voltage to be applied to the predetermined load is generated when a current flows in the constant current circuit network;

a switch unit configured to switch between short-circuit of the path and release of the short-circuit of the path; and

a control unit configured to switch, in a case in which, in the constant current circuit network, information for communication is transmitted as a first pulse which repeats high and low voltages at a first frequency, a state of the switch unit at a second frequency higher than the first frequency, and control an applied voltage to the predetermined load in a form of a second pulse which repeats high and low voltages at the second frequency, in the module,

wherein the control unit is configured to switch the state of the switch unit to a state of the short-circuit when a potential of the path is higher than a prescribed voltage, and switch the state of the switch unit to a state of the release of the short-circuit when the potential of the path is lower than a prescribed voltage.

2. The electronic device according to claim 1, wherein the control unit executes control for determining a duty ratio at the second pulse based on power required by the predetermined load.

3. An electronic device comprising:

a constant current circuit network comprising a module comprising a predetermined load and an electronic device;

a path in which at least a portion of a voltage to be applied to the predetermined load is generated when a current flows in the constant current circuit network;

a switch unit configured to switch between short-circuit of the path and release of the short-circuit of the path;

a first detecting unit configured to detect a start of transmission of the information in the module, in a case in which information for communication is transmitted in the constant current circuit network, and

a control unit configured to switch, in the module a state of the switch unit to a state of the short-circuit when a potential of the path is higher than a prescribed voltage, and switch the state of the switch unit to a state of the release of the short-circuit after the start of transmission of the information is detected by the first detecting unit when the potential of the path is lower than a prescribed

voltage.

4. The electronic device according to claim 3, wherein the control unit, in the module, switches the state of the switch unit from the state of the release of the short-circuit of the path to the state of the short-circuit of the path when an end of transmission of the information is recognized.

5. The electronic device according to claim 3, further comprising a second detecting unit configured to detect an end of transmission of the information in the module,

wherein the control unit, in the module, switches the state of the switch unit from the state of the release of the short-circuit of the path to the state of the short-circuit of the path when the end of transmission of the information is detected by the second detecting unit.