device control and signal processing, the number of communication paths required on each CPU board assembly is two, and mounting more than three systems leads to an increase in size and cost of the device.

[0006] For this reason, desirably the number of these components is two. In this case, the connection between the MAC of the CPU board and the PHY of the carrier board is different between the device control and the signal processing, so that one of the following two is required.

(a) Switch the connection between the MAC and the PHY according to purpose, and

(b) Prepare two types of carrier boards having different connections between the MAC and the PHY according to the purpose. In contrast with (b), (a) is economical because only one type of carrier board is required. PTL 1 discloses a technique related to the switching between the CPU and the communication path.

CITATION LIST

PATENT LITERATURE

[0007] PTL 1: Japanese Patent Laying-Open No. 2012-14380

SUMMARY OF INVENTION

TECHNICAL PROBLEMS

[0008] The conventional technique described in PTL 1 provides a mechanism that switches connections between two CPUs and external communication paths, but has a problem in that a mechanism that switches the connections of the following three buses is not mentioned. That is, the connection between the MAC and the PHY requires three types of buses of a data bus through which the communication data is transmitted and received, a control bus through which the MAC controls the PHY, and an interrupt bus through which the CPU is notified interrupt from the PHY, and the change of the connection is required to switch these buses at the same time.

[0009] Embodiments of the present disclosure seek to provide an information processing device and a communication switching method for easily performing switching of data bus

connection, control bus connection, and interrupt bus connection at the same timing.

SOLUTION TO PROBLEM

[0010] An information processing device and a communication switching method according to aspects of the present disclosure is featured by: switching a connection destination of a second physical layer device through a data bus (second data bus) to either a second LAN controller or a third LAN controller; switching a connection of a control bus such that either a first LAN controller or the third LAN controller accesses the second physical layer device according to the connection destination of the second physical layer device through the data bus (second data bus); and switching a connection of an interrupt bus according to the connection destination of the second physical layer device through the data bus (second data bus) to notify the first CPU that interrupt processing for the first CPU is transmitted from both the first physical layer device and the second physical layer device or only from the first physical layer device.

[0010a] An aspect of the present disclosure provides an information processing device comprising a first CPU board including a first CPU, a first LAN controller, and a second LAN controller; a second CPU board including a second CPU and a third LAN controller; a carrier board including a first physical layer device that communicates with an outside and a second physical layer device that communicates with the outside; and a switching unit to switch connection between: the first CPU board and the second CPU board; and the first physical layer device and the second physical layer device, wherein the first physical layer device is connected to the first LAN controller through a first data bus, the switching unit includes: a data bus switching unit that switches a connection destination of the second physical layer device through the second data bus to either the second LAN controller or the third LAN controller; a control bus switching unit that switches a connection of a control bus such that either the first LAN controller or the third LAN controller accesses the second physical layer device through the control bus according to the connection destination of the second physical layer device through the second data bus; and an interrupt bus switching unit that switches a connection of an interrupt bus such that according to the connection destination of the second physical layer device through the second data bus to notify the first CPU that interrupt processing for the first CPU is transmitted from both the first physical layer device and the second physical layer device or only from the first physical layer device, and the switching unit controls switching connections of the second data bus, the control bus, and the interrupt bus with reception of a selection signal as a trigger, the selection signal being identical.

[0010b] Another aspect of the present disclosure provides an information processing device comprising a first CPU board including a first CPU, a first LAN controller, and a second LAN controller; a carrier board including a first physical layer device that communicates with an outside and a second physical layer device that communicates with the outside; and a switching unit to switch connection between: the first CPU board and an external board; and the first physical layer device and the second physical layer device, wherein the first physical layer device is connected to the first LAN controller through a first data bus, the switching unit includes a data bus switching unit, a control bus switching unit, and an interrupt bus switching unit, when a second CPU board including a second CPU and a third LAN controller is installed as the external board, the data bus switching unit switches a connection destination of the second physical layer device through the second data bus to either the second LAN controller or the third LAN controller, the control bus switching unit switches a connection of a control bus such that either one of the first LAN controller or the third LAN controller accesses the second physical layer device according to the connection destination of the second physical layer device through the second data bus, the interrupt bus switching unit switches a connection of an interrupt bus according to the connection destination of the second physical layer device through the second data bus to notify the first CPU that interrupt processing for the first CPU is transmitted from both the first physical layer device and the second physical layer device or only from the first physical layer device, and the switching unit controls switching connections of the second data bus, the control bus, and the interrupt bus with reception of a selection signal as a trigger, the selection signal being identical.

[0010c] Another aspect of the present disclosure provides a communication switching method for switching connection between: a first CPU board including a first CPU, a first LAN controller, and a second LAN controller and a second CPU board including a second CPU and a third LAN controller; and a first physical layer device that communicate with an outside and a second physical layer device that communicates with the outside, the communication switching method comprising: switching a connection destination of the second physical layer device through the second data bus to either the second LAN controller or the third LAN controller; switching a connection of a control bus such that either the first LAN controller or the third LAN controller accesses the second physical layer device according to the connection destination of the second physical layer device through the second data bus; and switching a connection of an interrupt bus according to the connection destination of the second physical layer device through the second data bus to notify the first

CPU that interrupt signal for the first CPU is transmitted from both the first physical layer device and the second physical layer device or only from the first physical layer device, wherein the switching the connection of the data bus, the switching the connection of the control bus, and the switching the connection of the interruption bus are performed with a trigger, the trigger being identical.

ADVANTAGEOUS EFFECTS OF INVENTION

[0011] As described above, according to the present disclosure, the information processing device and the communication switching method for easily performing the switching of data bus connection, the control bus connection, and the interrupt bus connection at the same timing can be obtained by performing the switching of control bus connection and the interrupt bus connection according to the connection destination of the second physical layer device through the second data bus.

BRIEF DESCRIPTION OF DRAWINGS

[0012] Fig. 1 is a functional block diagram illustrating an information processing device (CPU board assembly portion) according to a first embodiment.

Fig. 2 is a functional block diagram illustrating the information processing device (CPU board assembly portion) of the first embodiment.

Fig. 3 is a connection table of the information processing device (CPU board assembly portion) of the first embodiment.

Fig. 4 is a functional block diagram illustrating a data bus switching unit of the information processing device (CPU board assembly portion) of the first embodiment.