CLAIMS

1. A master device configured to establish communication with at least one slave device via a bus, the master device comprising:

an acquisition unit configured to acquire, from the at least one slave device, a max transfer length indicating a maximum transfer length that the at least one slave device is transferable in one data transfer;

a transmission/reception control unit configured to control transmission/reception of data so that data to be transferred in one data transfer has a data length equal to or shorter than the max transfer length in data transfer to/from the at least one slave device;

a transmission unit configured to transmit transfer length information indicating the data length of the data to be transferred, prior to data transfer of the data,

wherein

when read transfer of reading out data from the at least one slave device is performed, the acquisition unit acquires a max read length that is the max transfer length in the read transfer by the at least one slave device, the transmission/reception control unit transfers, in a case where data having a data length equal to or longer than the max read length is requested to be transferred, the data requested to be transferred by dividing the data to have a data length equal to or shorter than the max read length, and transmitting the data through a plurality of transmissions, and

the transmission unit transmits the transfer length information indicating a data length of entire

data requested to be transferred only once.

2. The master device according to claim 1,

wherein the transmission/reception control unit transfers, in a case where data having a data length equal to or longer than the max transfer length is requested to be transferred, the data requested to be transferred by dividing the data to have a data length equal to or shorter than the max transfer length, and

the transmission unit transmits the transfer length information indicating a data length of data obtained through division by the transmission/reception control unit.

3. The master device according to claim 1, wherein

when write transfer of transferring data to be written to the at least one slave device is performed, the acquisition unit acquires a max write length that is the max transfer length in the write transfer by the at least one slave device, the transmission/reception control unit transfers, in a case where data having a data length equal to or longer than the max write length is requested to be transferred, the data requested to be transferred by dividing the data to have a data length equal to or shorter than the max write length, and transmitting the data through a plurality of transmissions, and

the transmission unit transmits the transfer length information indicating a data length of data obtained through division by the transmission/reception control unit, in each transfer of the data.

4. A slave device configured to establish communication with a master device via a bus, the slave device comprising:

an error notification unit configured to notify, in a case where occurrence of an error that prevents transfer length information indicating the data length of the date to be transferred from being normally received is at least detected, a processing unit of the occurrence of the error, the processing unit being configured to perform processing in an upper layer,

a reception unit configured to receive length information indicating a data length of entire data requested to be transferred only once when data is transferred to the master device; and

wherein the upper layer ignores any communication until receiving a combination of a command that is an instruction to restart communication and a command that is an instruction to write the data or until receiving a command that is an instruction to end communication.

5. A communication method for establishing communication with at least one slave device via a bus by a master device, the communication method comprising the steps of:

acquiring, from the at least one slave device, a max transfer length indicating a maximum transfer length that the at least one slave device is transferable in one data transfer;

controlling transmission/reception of data so that data to be transferred in one data transfer has a data length equal to or shorter than the max transfer length in data transfer to/from the at least one slave device; and

transmitting transfer length information indicating the data length of the data to be transferred, prior to data transfer of the data,

wherein

when read transfer of reading out data from the at least one slave device is performed, the master device acquires a max read length that is the max transfer length in the read transfer by the at least one slave device, and the master device transfers, in a case where data having a data length equal to or longer than the max read length is requested to be transferred, the data requested to be transferred by dividing the data to have a data length equal to or shorter than the max read length, and transmitting the data through a plurality of transmissions, and

the master device transmits the transfer length information indicating a data length of entire data requested to be transferred only once.

6. A non-transitory computer readable medium storing program code for transfer control where a master device is configured to establish communication with at least one slave device via a bus, the program code being executable by a processor to perform operations comprising:

acquiring, from the at least one slave device, a max transfer length indicating a maximum transfer length that the at least one slave device is transferable in one data transfer;

controlling transmission/reception of data so that data to be transferred in one data transfer has a data length equal to or shorter than the max transfer length in data transfer to/from the at least one slave

device; and

transmitting transfer length information indicating the data length of the data to be transferred, prior to data transfer of the data,

wherein

when read transfer of reading out data from the at least one slave device is performed, the master device acquires a max read length that is the max transfer length in the read transfer by the at least one slave device, and the master device transfers, in a case where data having a data length equal to or longer than the max read length is requested to be transferred, the data requested to be transferred by dividing the data to have a data length equal to or shorter than the max read length, and transmitting the data through a plurality of transmissions, and

the master device transmits the transfer length information indicating a data length of entire data requested to be transferred only once.

7. A communication system comprising:

a slave device; and

a master device, the master device comprising:

an acquisition unit configured to acquire, from the at least one second communication apparatus, a max transfer length indicating a maximum transfer length that the slave device is transferable in one data transfer;

a transmission/reception control unit configured to control transmission/reception of data so that data to be transferred in one data transfer has a data length equal to or shorter than the max transfer length in data transfer to/from the slave device; and

a transmission unit configured to transmit

transfer length information indicating the data length of the data to be transferred, prior to data transfer of the data,

wherein

when read transfer of reading out data from the slave device is performed, the acquisition unit of the master device acquires a max read length that is the max transfer length in the read transfer by the slave device, and the transmission/reception control unit of the master device transfers, in a case where data having a data length equal to or longer than the max read length is requested to be transferred, the data requested to be transferred by dividing the data to have a data length equal to or shorter than the max read length, and transmitting the data through a plurality of transmissions, and

the transmission unit of the master device transmits the transfer length information indicating a data length of entire data requested to be transferred only once.

8. The master device according to claim 1, where the master device further comprises a mode control unit configured to select a transfer mode in response to a request from an upper layer and to control the transmission/reception control unit to establish communication in the selected transfer mode.