There is a need to be able to update/change firmware data on an optical transceiver in a simple and controllable way.

Summary

The invention is defined in the independent claims. Further embodiments of the invention are defined in the dependent claims.

In a first aspect there is provided a method for programming a transceiver device by downloading firmware data from a remote provider onto a computing device local to the transceiver and electronically writing data derived from the downloaded firmware data onto the transceiver using a hardware device into which the transceiver is plugged.

The method may comprise communicating with the remote provider by providing credentials to software running on the computing device, the credentials including data indicative of the optical transceiver concerned, whereby the remote provider makes the firmware available for download by the computing device.

The communicating step may comprise contacting a web presence of the remote provider over the Internet.

The web presence may comprise a cloud server.

In a second aspect there is provided an electrical device adapted to interface between a computer and an optical transceiver, the optical transceiver having a memory storing firmware data, the electrical device being adapted to access the memory and to write firmware data to the memory from the computer.

The electrical device may be operable to write new firmware data to the memory.

In a third aspect there is provided a method of operating an optical transceiver having a memory storing firmware data, the method comprising providing a computer and an electrical device for interface between the optical transceiver

Claims

1. A method for programming an optical transceiver by downloading firmware data from a remote provider onto a computer local to the optical transceiver and electronically writing data derived from the downloaded firmware data onto the optical transceiver using a hardware device connected electrically to the computer, the optical transceiver being electrically connected to the hardware device, wherein the hardware device has a memory storing an identity of the hardware device, wherein the optical transceiver has on-board memory storing firmware data, the method comprising:-

reading the identity of the hardware device from its memory;

supplying that identity to the remote provider over the Internet;

in response to confirmation at the remote provider of the validity of the identity of the hardware device, downloading new firmware data from the remote provider into storage of the computer;

outputting the new firmware data from the storage to the hardware device; and

writing the data from the hardware device to the memory of the optical transceiver.

2. The method of claim 1 wherein the step of outputting the new firmware data comprises outputting the data using a first protocol, and further comprising a step of converting the new firmware data to a second protocol by the hardware device, wherein the writing step comprises writing the second protocol data to the optical transceiver.

3. The method of claim 2, wherein the first protocol is USB and the second protocol is I2C.

4. The method of claim 1, 2 or 3, wherein before the step of outputting the new firmware data, the computer reads the existing firmware of the optical transceiver and a board ID into memory of the computer via the hardware device.

5. The method of any of claims 1-4, wherein after the step of outputting the new firmware data, the computer reads back the data stored in the memory of the optical transceiver and checks to see whether the write attempt was successful by comparing with the stored new firmware data.

6. An electrical device adapted to interface between a computer and an optical transceiver, the optical transceiver having a memory storing firmware data, the electrical device being adapted to access the memory and to write firmware data to the memory from the computer and having:-

a store adapted to store the identity of the electrical device;

a first port for connection to the computer; and

a second port for connection to the optical transceiver;

wherein the identity of the electrical device is accessible at the first port for selecting the correct firmware.

7. The device of claim 6, wherein the electrical device is configured to convert between a first protocol at the first port and a second protocol at the second port for updating the firmware data.

8. A method of operating an optical transceiver having a memory storing firmware data, the method comprising providing a computer and an electrical interface device connected between the optical transceiver and the computer, the computer being programmed to carry out the steps of :-

accessing the memory of the optical transceiver via the electrical interface device to read the firmware data of the memory;

storing a copy of the firmware data;

accessing new firmware data; and

carrying out a writing step to write the new firmware data to the memory;

wherein the step of accessing new firmware data comprises

reading identification data stored in the electrical interface device; and

using that identification data to select the correct firmware based in part upon that identity.

9. The method of claim 8, wherein the computer communicates with the electrical interface device using a first protocol, and the electrical interface device communicates with the optical transceiver using a second different protocol, the electrical interface device converting between the first and second protocols.

10. The method of claim 8 or 9, wherein the step of accessing new firmware data further comprises

providing said identification data to software running on the computer, the software thereby contacting a cloud server of a remote provider to retrieve the desired new firmware data; and

downloading the new firmware data to the computer.

11. The method of claim 8, further comprising after carrying out the writing step, re-reading stored data from the memory and re-writing the stored copy of firmware data in event of an error.

12. The method of claim 8, further comprising, after carrying out the writing step,

detecting an error,

performing the writing step again for a set number of times; and

then if an error is detected re-writing the stored copy of firmware data.

13. The method of claim 8, further comprising downloading a DLL to the computer.

14. The method of claim 13, wherein the DLL permits control of the electrical interface device.

15. The method of claim 8, further comprising downloading a GUI and using the GUI in effecting the steps of the method.