CLAIMS

1. An optical/electrical module, comprising:

an analog equalizer and an optical/electrical converter, wherein the analog equalizer is connected to the optical/electrical converter;

wherein the analog equalizer is configured to:

perform first analog signal equalization processing on a first electrical signal to obtain a second electrical signal, and send the second electrical signal to the optical/electrical converter, or

receive a third electrical signal from the optical/electrical converter, and perform second analog signal equalization processing on the third electrical signal to obtain a fourth electrical signal;

wherein the analog equalizer comprises a continuous time linear equalizer (CTLE), a low frequency equalizer (LFEQ), and a level mismatch compensation circuit connected between the optical/electrical converter and one of an input end or an output end of the analog equalizer; and

wherein the optical/electrical converter is configured to:

receive the second electrical signal from the analog equalizer and convert the second electrical signal into a first optical signal, or

convert a second optical signal into the third electrical signal and send the third electrical signal to the analog equalizer.

2. The optical/electrical module according to claim 1, wherein the optical/electrical converter comprises a first optical/electrical converter, configured to: receive the second electrical signal from the analog equalizer and convert the second electrical signal into the first optical signal; and

wherein the analog equalizer comprises a transmit equalizer, configured to: perform the first analog signal equalization processing on the first electrical signal to obtain the second electrical signal, and send the second electrical signal to the first optical/electrical converter.

3. The optical/electrical module according to claim 2, wherein the transmit equalizer comprises a first CTLE, a first LFEQ, and a first level mismatch compensation circuit.

4. The optical/electrical module according to claim 3, wherein the transmit equalizer comprises the first CTLE, the first LFEQ, and the first level mismatch compensation circuit that are connected in series.

5. The optical/electrical module according to any one of claims 1 to 4, wherein the optical/electrical converter comprises a second optical/electrical converter, configured to: convert the second optical signal into the third electrical signal and send the third electrical signal to the analog equalizer; and

wherein the analog equalizer comprises a receive equalizer, configured to: receive the third electrical signal from the second optical/electrical converter, and perform the second analog signal equalization processing on the third electrical signal to obtain the fourth electrical signal.

6. The optical/electrical module according to claim 5, wherein the receive equalizer comprises a second CTLE, a second LFEQ, and a second level mismatch compensation circuit.

7. The optical/electrical module according to claim 6, wherein the receive equalizer comprises the second CTLE, the second LFEQ, and the second level mismatch compensation circuit that are connected in series.

8. A device, comprising:

a digital signal interface; and

the optical/electrical module according to any one of claims 1 to 7,

wherein the digital signal interface is configured to:

receive a first digital electrical signal from a processing device, convert the first digital electrical signal into the first electrical signal, and send the first electrical signal to the analog equalizer, or is configured to: receive the fourth electrical signal from the analog equalizer, convert the fourth electrical signal into a second digital electrical signal, and send the second digital electrical signal to the processing device.

9. The device according to claim 8, wherein the device further comprises a high-speed passive component, configured to connect the digital signal interface to the analog equalizer.

10. The device according to claim 9, wherein the high-speed passive component comprises a first high-speed connector, a second high-speed connector, and a high-speed cable, the first high-speed connector and the second high-speed connector are connected through the high-speed cable, the first high-speed connector is connected to the digital signal interface, and the second high-speed connector is connected to the analog equalizer.

11. The device according to claim 9, wherein the high-speed passive component comprises a first high-speed connector, and wherein the first high-speed connector is connected between the digital signal interface and the analog equalizer; and

wherein the high-speed cable comprises a first hollow-core optical fiber and wherein the device further comprises a hollow-core optical fiber connector, wherein

the first hollow-core optical fiber is connected to the optical/electrical converter, and is configured to: send the first optical signal or receive the second optical signal; and

the hollow-core optical fiber connector is configured to: send the first optical signal to a second hollow-core optical fiber or receive the second optical signal from the second hollow-core optical fiber.

12. An active optical cable, comprising at least two optical/electrical modules according to any one of claims 1 to 7 and a hollow-core optical fiber, wherein the at least two optical/electrical modules are connected through the hollow-core optical fiber.

13. A communication system, comprising a plurality of communication devices, wherein the plurality of communication devices are connected through the active optical cable according to claim 12.

14. The communication system according to claim 13, wherein the plurality of communication devices comprise at least one device according to any one of claims 8 to 11.

15. A method in which an optical/electrical module is used, comprising:

performing first analog signal equalization processing on a first electrical signal by using an analog equalizer in the optical/electrical module to obtain a second electrical signal, wherein the analog equalizer comprises a continuous time linear equalizer (CTLE), a low frequency equalizer (LFEQ), and a level mismatch compensation circuit connected between an optical/electrical converter and one of an input end or an output end of the analog equalizer;

performing:

sending the second electrical signal to the optical/electrical converter, or

receiving a third electrical signal from the optical/electrical converter by using the analog equalizer, and performing second analog signal equalization processing on the third electrical signal to obtain a fourth electrical signal; and

receiving the second electrical signal from the analog equalizer by using the optical/electrical converter in the optical/electrical module, and

performing:

converting the second electrical signal into a first optical signal, or

converting a second optical signal into the third electrical signal by using the optical/electrical converter, and sending the third electrical signal to the analog equalizer.