

CLAIMS

What is claimed is:

1. A data transmission device, comprising a TypeC interface (21), a wireless module (12), a first data transformation chip and a microprocessor (24), wherein the TypeC interface (21) is connected with the first data transformation chip (23), the first data transformation chip (23) is connected with the TypeC interface (21) and the microprocessor (24), and the microprocessor (24) is connected with the wireless module (12);

wherein the TypeC interface (21) is configured to receive media data in DP protocol format, and the media data is media content presented on a terminal device;

wherein the first data transformation chip (23) is configured to receive the media data in DP protocol format transmitted through the TypeC interface (21), and further have the media data encoded into data in a first format;

wherein the microprocessor (24) is configured to receive the data in the first format, further compress and encode the data in the first format into data in a second format; and

wherein the wireless module (12) is configured to transmit the data in the second format to a data receiving device.

2. The data transmission device according to claim 1, further comprising a trigger device configured to receive a first user operation, wherein the first user operation is a screen transmission trigger signal, and

wherein the first user operation is used for triggering the microprocessor (24) to transform the data in the first format into the data in the second format, and trigger the wireless module (12) to transmit the data in the second format.

3. The data transmission device according to claim 2, wherein, the microprocessor (24) is further configured to discard the received data in the first

format prior to receiving the first user operation by the trigger device.

4. The data transmission device according to claim 1, wherein the TypeC interface (21) comprises at least one pair of differential signal transmission pins configured to receive the media data in DP protocol format.

5. The data transmission device according to claim 4, wherein the TypeC interface (21) further comprises, a paring communication pin configured to transmit a first request signal, and the first request signal is used for requesting the terminal device to transmit the media data in DP protocol format to the at least one pair of differential signal transmission pins.

6. The data transmission device according to claim 5, wherein the paring communication pin is further configured to transmit a second request signal, wherein the second request signal is used for requesting the terminal device to supply power according to a power requirement of the data transmission device.

7. The data transmission device according to claim 1, wherein the data in the first format comprises video data in an MIPI format and/or audio data in an I2S format, wherein the data in the second format comprises video data in an H.264/H.265 format and/or audio data in an AAC format.

8. The data transmission device according to claim 1, wherein the TypeC interface (21) further comprises a USB2.0 data transmission pin connected with the microprocessor (24), wherein the wireless module (12) is further configured to receive a touch signal from a communication network, and transmit the touch signal to the terminal device via the USB2.0 data transmission pins.

9. The data transmission device according to claim 8, wherein the

microprocessor (24) is further configured to encapsulate the touch signal received by the wireless module (12) from the communication network, into a signal in an HID format.

10. The data transmission device according to any one of the preceding claims, further comprising a memory (25) connected with the microprocessor (24),

wherein the memory (25) stores an executable program, the executable program is configured to run after being downloaded to the terminal device, and the executable program is further configured to trigger, when the terminal device is running, the terminal device to obtain the media content, and trigger the terminal device to compress and encode the obtained media content into a USB2.0 data, and

wherein the microprocessor (24) is configured to obtain the executable program from the memory (25) when being triggered, and transmit the executable program to the terminal device; the microprocessor (24) is further configured to transmit the received USB2.0 data through the wireless module (12).

11. The data transmission device according to any one of the preceding claims, further comprising a second data transformation chip (28) through which the first data transformation chip (23) is connected to the microprocessor (24).

12. A data transmission method, comprising:

receiving, via a power pin of a TypeC interface (21), a base working power, the base working power provides a power for functioning;

receiving an inquiry data packet transmitted by a terminal device via the TypeC interface (21) thereof;

transmitting a response to the terminal device via the TypeC interface (21), wherein the response carries information indicating capability of supporting for DP mode; receiving, via differential signal transmission pins, media data in DP protocol format sent from the terminal device, wherein the media data comprises at least one of

video data or audio data presented on the terminal device;

compressing the media data according to a preset encoding scheme; and

transmitting the compressed media data via a wireless network to a data receiving device.

13. The data transmission method according to claim 12, wherein the inquiry data packet is a VDM signal; and

wherein the response carries information indicating that a current operation mode is a DP mode.

14. The data transmission method according to claim 12 or 13, wherein the compressing the media data according to a preset encoding scheme further comprises:

converting the media data in the DP protocol format into video data in an MIPI format and/or audio data in an I2S format, and compressing the video data in the MIPI format and/or the audio data in the I2S format into data in the H.264/H.265 format and/or data in the AAC format.

15. The data transmission method according to claim 14, prior to the compressing the video data in the MIPI format and/or the audio data in the I2S format into the data in the H.264/H.265 format and/or the data in the AAC format, further comprising:

receiving a screen sharing instruction.

16. The data transmission method according to any one of the preceding claims, further comprising:

receiving a touch signal from the data receiving device, and transmitting the touch signal to the terminal device, so that the terminal device performs a corresponding operation according to the touch signal.

17. A method of transmitting data of a data transmission device wherein the data transmission device comprises a TypeC interface (21), a wireless module (12), a data transformation chip (23) and a microprocessor (24), the TypeC interface (21) is connected with the data transformation chip (23), the data transformation chip (23) is connected with the TypeC interface (21) and the microprocessor (24), and the microprocessor (24) is connected with the wireless module (12), the TypeC interface (21) comprises at least one pair of differential signal transmission pins, the method comprising:

receiving, via a power pin of the TypeC interface (21), a base working power;

receiving, by the data transmission chip (23), an inquiry data packet transmitted by the terminal device via the TypeC interface (21) thereof;

transmitting, by the data transmission chip (23), a response to the terminal device via the TypeC interface (21), wherein the response carries information indicating capability of supporting for DP mode;

receiving, by the data transformation chip (23), the media data in a DP protocol format via the at least one pair of differential signal transmission pins, wherein the media data comprises at least one of video data or audio data presented on the terminal device;

converting, by the data transformation chip (23), the media data in the DP protocol format into video data in an MIPI format and/or audio data in an I2S format;

transmitting, by the data transformation chip (23), the video data in MIPI format and/or the audio data in I2S format to the microprocessor (24);

compressing, by the microprocessor (24), the video data in the MIPI format and/or the audio data in the I2S format into video data in an H.264/H.265 format and/or audio data in an AAC format; and

transmitting, by the microprocessor (24), the video data in the H.264/H.265 format and/or the audio data in the AAC format to a data receiving device.

18. A data transmission device, comprising a TypeC interface (21), a wireless

module (12), a data transformation chip (23) and a microprocessor (24), wherein the TypeC interface (21) is connected with the data transformation chip (23), the data transformation chip (23) is connected with the TypeC interface (21) and the microprocessor (24), and the microprocessor (24) is connected with the wireless module (12), the TypeC interface (21) comprises at least one pair of differential signal transmission pins,

wherein the TypeC interface (21) comprises a power pin for receiving a base working power,

wherein the data transmission chip (23) is configured to receive an inquiry data packet transmitted by a terminal device via the TypeC interface (21) thereof,

wherein the data transmission chip (23) is configured to transmit a response to the terminal device via the TypeC interface (21), wherein the response carries information indicating capability of supporting for DP mode,

wherein the data transmission chip (23) is configured to receive the media data in a DP protocol format via the differential signal transmission pins, wherein the media data comprise at least one of video data or audio data presented on the terminal device,

wherein the data transmission chip (23) is configured to convert the media data in the DP protocol format into video data in an MIPI format and/or audio data in an I2S format,

wherein the data transmission chip (23) is configured to transmit the video data in MIPI format and/or the audio data in I2S format to the microprocessor (24),

wherein the microprocessor (24) is configured to compress the video data in the MIPI format and/or the audio data in the I2S format into video data in an H.264/H.265 format and/or audio data in an AAC format, and

wherein the microprocessor (24) is configured to transmit the video data in the H.264/H.265 format and/or the audio data in the AAC format to a data receiving device.