WHAT IS CLAIMED IS:

1. An audio signal adapter device, comprising an input interface and an output interface, wherein the audio signal adapter device further comprises a boosting unit, a rectifying unit and a filtering unit;

the input interface comprises at least one audio pin configured to receive an audio signal output from an audio signal sending device, and the at least one audio pin of the input interface outputs the audio signal to an input end of the boosting unit;

the boosting unit is configured to boost a voltage of the audio signal, and to output a boosted audio signal to an input end of the rectifying unit via an output end thereof;

the rectifying unit is configured to rectify the boosted audio signal to obtain a rectified level, and to output the rectified level to an input end of the filtering unit via an output end thereof;

the filtering unit is configured to filter the rectified level to obtain a direct current level, and to output the direct current level to a power pin of the output interface via output end thereof;

the output interface further comprises an audio signal pin, the audio signal pin is connected with the at least one audio pin of the input interface or the output end of the boosting unit;

the output interface further comprises a reference signal pin, the input interface further comprises a ground pin, and the reference signal pin is connected with the ground pin.

2. The audio signal adapter device according to claim 1, wherein

the boosting unit is a boosting transformer, and the boosting transformer comprises a primary coil and a secondary coil;

a first pin of the primary coil is used as the input end of the boosting unit to be connected with the at least one audio pin, and a second pin of the primary coil is grounded;

at least one output pin of the secondary coil is used as the output end of the boosting unit to be connected with the input end of the rectifying unit, and a tap of the secondary coil is grounded.

3. The audio signal adapter device according to claim 2, wherein

the rectifying unit comprises at least one diode, an anode of the at least one diode is connected with the input end of the rectifying unit, and a cathode of the at least one diode is connected with the output end of the rectifying unit.

4. The audio signal adapter device according to claim 3, wherein

the secondary coil of the boosting transformer comprises two output pins; and

the input end of the rectifying unit comprises two input pins;

the two output pins of the secondary coil are connected with the two input pins of the rectifying unit respectively;

the rectifying unit comprises two diodes, and anodes of the two diodes are connected with the two input pins of the rectifying unit respectively.

5. The audio signal adapter device according to claim 1, wherein

the filtering unit comprises a capacitor;

a first end of the capacitor is connected with the input end or the output end of the rectifying unit;

the input end of the rectifying unit is connected with the output end of the rectifying unit.

6. The audio signal adapter device according to claim 1, wherein

the boosting unit is a boosting transformer, and the boosting transformer comprises a primary coil and a secondary coil;

a first pin of the primary coil is used as the input end of the boosting unit to connected with the at least one audio pin, and a second pin of the primary coil is grounded;

a first output pin of the secondary coil is used as the output end of the boosting unit to be connected with the input end of the rectifying unit, and a second output pin of the secondary coil is grounded.

7. The audio signal adapter device according to claim 6, wherein

the rectifying unit comprises one diode, an anode of the diode is connected with the input end of the rectifying unit, and a cathode of the diode is connected with the output end of the rectifying unit.

8. The audio signal adapter device according to claim 2, wherein

the second pin of the primary coil is connected with the ground pin of the input interface.

9. The audio signal adapter device according to claim 1, wherein

the output interface is a USB output interface;

the power pin is a VBUS pin of the USB output interface;

the audio signal pin is one of a D+ pin and a D- pin of the USB output interface, and the

reference signal pin is the other one of the D+ pin and the D- pin of the USB output interface.

10. The audio signal adapter device according to claim 2, wherein

the first pin of the primary coil is connected with the at least one audio pin via a resistor.

11. The audio signal adapter device according to claim 1, wherein

the input interface comprises two audio pins: a left-channel pin and a right-channel pin.

12. The audio signal adapter device according to claim 11, wherein

one of the left-channel pin and the right-channel pin is configured to output the audio signal to the input end of the boosting unit, and the other one of the left-channel pin and the right-channel pin is configured to be connected with the audio signal pin of the output interface.

13. The audio signal adapter device according to claim 6, wherein

the input interface comprises two audio pins: a left-channel pin and a right-channel pin.

WHAT IS CLAIMED IS:

1. An audio signal adapter device, comprising an input interface and an output interface, wherein the audio signal adapter device further comprises a boosting unit, a rectifying unit and a filtering unit;

the input interface comprises at least one audio pin configured to receive an audio signal output from an audio signal sending device, and the at least one audio pin of the input interface outputs the audio signal to an input end of the boosting unit;

the boosting unit is configured to boost a voltage of the audio signal, and to output a boosted audio signal to an input end of the rectifying unit via an output end thereof;

the rectifying unit is configured to rectify the boosted audio signal to obtain a rectified level, and to output the rectified level to an input end of the filtering unit via an output end thereof;

the filtering unit is configured to filter the rectified level to obtain a direct current level, and to output the direct current level to a power pin of the output interface via output end thereof;

the output interface further comprises an audio signal pin, the audio signal pin is connected with the at least one audio pin of the input interface or the output end of the boosting unit;

the output interface further comprises a reference signal pin, the input interface further comprises a ground pin, and the reference signal pin is connected with the ground pin.

2. The audio signal adapter device according to claim 1, wherein

the boosting unit is a boosting transformer, and the boosting transformer comprises a primary coil and a secondary coil;

a first pin of the primary coil is used as the input end of the boosting unit to be connected with the at least one audio pin, and a second pin of the primary coil is grounded;

at least one output pin of the secondary coil is used as the output end of the boosting unit to be connected with the input end of the rectifying unit, and a tap of the secondary coil is grounded.

3. The audio signal adapter device according to claim 2, wherein

the rectifying unit comprises at least one diode, an anode of the at least one diode is connected with the input end of the rectifying unit, and a cathode of the at least one diode is connected with the output end of the rectifying unit.

4. The audio signal adapter device according to claim 3, wherein

the secondary coil of the boosting transformer comprises two output pins; and

the input end of the rectifying unit comprises two input pins;

the two output pins of the secondary coil are connected with the two input pins of the rectifying unit respectively;

the rectifying unit comprises two diodes, and anodes of the two diodes are connected with the two input pins of the rectifying unit respectively.

5. The audio signal adapter device according to claim 1, wherein

the filtering unit comprises a capacitor;

a first end of the capacitor is connected with the input end or the output end of the rectifying unit;

the input end of the rectifying unit is connected with the output end of the rectifying unit.

6. The audio signal adapter device according to claim 1, wherein

the boosting unit is a boosting transformer, and the boosting transformer comprises a primary coil and a secondary coil;

a first pin of the primary coil is used as the input end of the boosting unit to connected with the at least one audio pin, and a second pin of the primary coil is grounded;

a first output pin of the secondary coil is used as the output end of the boosting unit to be connected with the input end of the rectifying unit, and a second output pin of the secondary coil is grounded.

7. The audio signal adapter device according to claim 6, wherein

the rectifying unit comprises one diode, an anode of the diode is connected with the input end of the rectifying unit, and a cathode of the diode is connected with the output end of the rectifying unit.

8. The audio signal adapter device according to claim 2, wherein

the second pin of the primary coil is connected with the ground pin of the input interface.

9. The audio signal adapter device according to claim 1, wherein

the output interface is a USB output interface;

the power pin is a VBUS pin of the USB output interface;

the audio signal pin is one of a D+ pin and a D- pin of the USB output interface, and the

reference signal pin is the other one of the D+ pin and the D- pin of the USB output interface.

10. The audio signal adapter device according to claim 2 or 6, wherein

the first pin of the primary coil is connected with the at least one audio pin via a resistor.

11. The audio signal adapter device according to claim 1, wherein

the input interface comprises two audio pins: a left-channel pin and a right-channel pin.

12. The audio signal adapter device according to claim 11, wherein

one of the left-channel pin and the right-channel pin is configured to output the audio signal to the input end of the boosting unit, and the other one of the left-channel pin and the right-channel pin is configured to be connected with the audio signal pin of the output interface.