

CLAIMS

What is claimed is:

1. An information transmission method, comprising:
 - performing, by a remote unit, carrier sense multiple access/collision avoidance CSMA/CA
 - 5 channel detection during channel contention, to determine a busy or idle state of a channel; a
 - when it is determined that the channel is idle, sending a channel occupancy signal at an end boundary of a last slot in which channel detection is performed;
 - receiving, by the remote unit, a channel contention message from a central unit;
 - sending a channel contention result to the central unit;
 - 10 sending, by the remote unit, an 802.11 frame through a channel occupied by the channel occupancy signal, wherein the 802.11 frame comprises a digital baseband in-phase quadrature IQ signal generated by the central unit;
 - encapsulating, by the remote unit, a signal sent by the remote unit to the central unit;
 - decapsulating, by the remote unit, the signal sent by the central unit to the remote unit; and
 - 15 receiving and decapsulating, by the remote unit, an encapsulated data packet sent by the central unit, and obtaining the digital baseband IQ signal and a control word comprised in the data packet, wherein the control word indicates a sending start point and a sending end point of an 802.11 frame carried in the data packet.
2. The method according to claim 1, wherein the method further comprises:
 - 20 stopping, by the remote unit, sending the channel occupancy signal at the sending start point.
3. The method according to claim 1, wherein the method further comprises:
 - stopping, by the remote unit, sending the 802.11 frame at the sending end point.
4. The method according to any one of claims 1 to 3, wherein the method further comprises:
 - controlling, by the remote unit based on the channel contention result or the control word
 - 25 obtained through decapsulation, whether to send the channel occupancy signal.
5. The method according to any one of claims 1 to 4, wherein a signal transmitted between the remote unit and the central unit is a digital baseband frequency domain IQ signal, and the method further comprises:
 - performing, by the remote unit, fast Fourier transform/inverse fast Fourier transform on the
 - 30 received 802.11 frame, completing transformation of the 802.11 frame from a time domain to a

frequency domain, obtaining, encapsulating, sending content of a long training field LTF field and fields following the LTF field in the transformed 802.11 frame to the central unit, obtaining, demodulating and decoding a signal SIG field in the transformed 802.11 frame, completing format detection of the 802.11 frame, and sending the decoding result to the central unit.

5 6. The method according to any one of claims 1 to 4, wherein a signal transmitted between the remote unit and the central unit is a digital baseband time domain IQ signal, and the method further comprises:

detecting, by the remote unit, validity and a start boundary of the 802.11 frame, and performing frame synchronization and symbol synchronization on the 802.11 frame;

10 receiving an encapsulated decoding result from the central unit, and encapsulating the decoding result, wherein the decoding result is obtained after the central unit performs FFT/IFFT on the 802.11 frame to obtain a SIG field in the 802.11 frame and performs SIG detection;

generating an automatic gain control command based on the decoding result; and

15 performing, based on the automatic gain control command, automatic gain control on signal power of the 802.11 frame, and adjusting power of a signal input into a digital-to-analog/analog-to-digital converter.

7. The method according to claim 6, wherein if the remote unit detects a legacy short training field L-STF field in the 802.11 frame, the remote unit performs first automatic gain control on the signal power of the 802.11 frame;

20 the decoding result is decoding results of a legacy signal field L-SIG field and first three orthogonal frequency division multiplexing OFDM symbols following the L-SIG field of the 802.11 frame that are obtained by the central unit; and

25 when the decoding result satisfies a preset condition, the remote unit runs a local AGC state machine based on the decoding result, to generate a second automatic gain control command or a third automatic gain control command.

8. A remote unit, comprising:

30 a processor, a memory, and a bus, wherein the processor and the memory are connected through the bus, the memory is configured to store a group of program code, and the processor is configured to invoke the program code stored in the memory to perform the method according to any one of claims 1 to 7.

9. A computer-readable storage medium, wherein

the computer-readable storage medium stores instructions, and when the instructions are run on a computer, the method according to any one of claims 1 to 7 is implemented.

10. A computer program product, comprising computer program code, wherein when the computer program code is run on a computer, the computer is enabled to implement the method
5 according to any one of claims 1 to 7.

11. A chip, comprising one or more processing circuits, wherein the one or more processing circuits are configured to implement the method according to any one of claims 1 to 7.

12. An apparatus, configured to perform the method according to any one of claims 1 to 7.