

CLAIMS

1. A transceiver device comprising:
 - 5 | a determination circuit configured to determine an available frequency as a master-remote frequency;
 - a receiver configured to wirelessly receive a signal having the a-master-remote frequency from a communication device;
 - a branch frequency converter configured to convert the master-remote frequency
 - 10 | of the received signal to a remote-terminal frequency; and
 - a transmitter configured to transmit the converted signal having the remote-terminal frequency to a communication terminal.
2. The transceiver device of claim 1, wherein the master-remote frequency is at least
15 | one of an ultra high frequency or a very high frequency.
3. The transceiver device of claim 1 or 2, wherein the master-remote frequency is an available frequency for wirelessly receiving the signal from the communication device.
- 20 | 4. The transceiver device of claim 1, wherein the master-remote frequency is a frequency selected from a range of 50 MHz to 700 MHz.
5. The transceiver device of any one of claims 1 to 4, wherein the remote-terminal frequency is higher than the master-remote frequency.
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6. The transceiver device of any one of claims 1 to 5, wherein the remote-terminal frequency is selected from an unlicensed frequency band.
7. The transceiver device of any one of claims 1 to 6, wherein the remote-terminal
30 | frequency is at least one of 2.4 GHz band or 5.8 GHz band.

8. The transceiver device of any one of claims 1 to 7, wherein the branch frequency converter comprises a voltage controlled oscillator and a frequency mixer configured to frequency mix the received signal with an oscillating source signal from the voltage controlled oscillator.

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9. The transceiver device of any one of claims 1 to 8, further comprising a frequency synchronization control unit configured to associate the receiver with the communication device based on the master-remote frequency.

10 10. The transceiver device of any one of claims 1 to 9, wherein the communication device comprises an access point.

11. The transceiver device of any one of claims 1 to 10, wherein the communication device further comprises an infrastructural frequency converter configured to convert the
15 frequency of the transmitted signal.

12. The transceiver device of claim 11, wherein the infrastructural frequency converter is configured to communicate with the access point.

20 13. The transceiver device of any one of claims 1 to 12, wherein the communication device is configured to operate according to an IEEE 802.11 communication standard.

14. A transceiver device comprising:

25 a receiver configured to receive a signal having a remote-terminal frequency from a communication terminal;

a determination circuit configured to determine an available frequency as a master-remote frequency;

a branch frequency converter configured to convert the remote-terminal frequency of the received signal to the a-master-remote frequency; and

30 a transmitter configured to wirelessly transmit the converted signal having the master-remote frequency to a communication device.

15. The transceiver device of claim 14, wherein the remote-terminal frequency is selected from an unlicensed frequency band.

5 16. The transceiver device of claim 14 or 15 wherein the remote-terminal frequency is at least one of 2.4 GHz band or 5.8 GHz band.

17. The transceiver device of any one of claims 14 to 16, wherein the master-remote frequency is at least one of an ultra high frequency or a very high frequency.

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18. The transceiver device of any one of claims 14 to 17, wherein the branch frequency converter comprises a voltage controlled oscillator and a frequency mixer configured to frequency mix the received signal with an oscillating source signal from the voltage controlled oscillator.

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19. The transceiver device of any one of claims 14 to 18, further comprising a frequency synchronization control unit configured to associate the transmitter with the communication device based on the master-remote frequency.

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20. A method of transmitting a converted signal, the method comprising:

determining an available frequency as a master-remote frequency;
wirelessly receiving a signal having the a-master-remote frequency from a communication device;

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converting the master-remote frequency of the received signal to a remote-terminal frequency; and

transmitting the converted signal having the remote-terminal frequency to a communication terminal.

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21. The method of claim 20, wherein the master-remote frequency is at least one of an ultra high frequency or a very high frequency.

22. The method of claim 20 or 21, wherein the master-remote frequency is a frequency selected from a range of 50 MHz to 700 MHz.

23. The method of any one of claims 20 to 22, wherein the remote-terminal frequency
5 is at least one of 2.4 GHz band or 5.8 GHz band.

24. The method of any one of claims 20 to 23, wherein converting the master-remote frequency of the received signal to a remote-terminal frequency comprises frequency mixing the received signal with an oscillating source signal from a voltage controlled
10 oscillator.

25. The method of any one of claims 20 to 24, further comprising determining an available frequency to be the master-remote frequency for wirelessly receiving the signal from the communication device.

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26. A method of receiving a signal, the method comprising:
receiving a signal having a remote-terminal frequency from a communication terminal;
determining an available frequency as a master-remote frequency;
20 converting the remote-terminal frequency of the received signal to the a-master-remote frequency; and
wirelessly transmitting the converted signal having the master-remote frequency to a communication device.

25 27. The method of claim 26, wherein the remote-terminal frequency is at least one of 2.4 GHz band or 5.8 GHz band.

28. The method of claim 26 or 27, wherein the master-remote frequency is at least one of an ultra high frequency or a very high frequency.