

CLAIMS

1. A receiver device comprising:
 - a receiver circuit configured to receive a data packet according to a data format on a pre-determined radio frequency, wherein the data format comprises a parameter indicating a number of retries of transmission of the data packet;
 - a determination circuit configured to determine whether the parameter is higher than a pre-determined threshold; and
 - a frequency changer circuit configured to change a frequency on which the receiver receives data based on the determination.
2. The receiver device of claim 1,
 - wherein the parameter is included in a head field of the data packet.
3. The receiver device of claim 1,
 - wherein the frequency changer circuit is configured to change the frequency if it is determined that the parameter is higher than the pre-determined threshold.
4. The receiver device of claim 1, further comprising:
 - a time determination circuit configured to determine a time since a data packet last was received from a transmitter.
5. The receiver device of claim 4,
 - wherein the frequency changer circuit is configured to change the frequency if the determined time is higher than a pre-determined timeout time.
6. The receiver device of claim 5,
 - wherein the pre-determined timeout time is aligned with the pre-determined threshold.

7. A transmitter device comprising:
 - a transmitter circuit configured to transmit a data packet according to a data format on a pre-determined radio frequency, wherein the data format comprises a parameter indicating a number of retries of transmission of the data packet;
 - an acknowledgement determination circuit configured to determine whether an acknowledgement for reception of the data pack is received in the transmitter device, wherein the transmitter circuit is configured to increase the parameter and re-transmit the data packet with the increased parameter if the acknowledgement determination circuit determines that an acknowledgement for reception of the data pack is not received in the transmitter device;
 - a determination circuit configured to determine whether the value of the parameter is higher than a pre-determined threshold; and
 - a frequency changer circuit configured to change a frequency on which the transmitter transmits data based on the determination.
8. The transmitter device of claim 7,
 - wherein the parameter is included in a head field of the data packet.
9. The transmitter device of claim 7,
 - wherein the frequency changer circuit is configured to change the frequency if it is determined that the parameter is higher than the pre-determined threshold.
10. The transmitter device of claim 7,
 - wherein the pre-determined threshold is aligned with a pre-determined timeout time in a receiver.
11. A method for controlling a receiver device, the method comprising:

receiving a data packet according to a data format on a pre-determined radio frequency, wherein the data format comprises a parameter indicating a number of retries of transmission of the data packet;

determining whether the parameter is higher than a pre-determined threshold; and

changing a frequency on which the receiver receives data based on the determining.

12. The method of claim 11,
wherein the parameter is included in a head field of the data packet.
13. The method of claim 11,
wherein the frequency is changed if it is determined that the parameter is higher than the pre-determined threshold.
14. The method of claim 11, further comprising:
determining a time since a data packet last was received from a transmitter.
15. The method of claim 14,
wherein the frequency is changed if the determined time is higher than a pre-determined timeout time.
16. The method of claim 15,
wherein the pre-determined timeout time is aligned with the pre-determined threshold.
17. A method for controlling a transmitter device, the method comprising:
transmitting a data packet according to a data format on a pre-determined radio frequency, wherein the data format comprises a parameter indicating a number of retries of transmission of the data packet;

determining whether an acknowledgement for reception of the data pack is received in the transmitter device, wherein the parameter is increased and the data packet is re-transmitted with the increased parameter if it is determined that an acknowledgement for reception of the data pack is not received in the transmitter device;

determining whether the value of the parameter is higher than a pre-determined threshold; and

changing a frequency on which the transmitter transmits data based on the determining.

18. The method of claim 17,
wherein the parameter is included in a head field of the data packet.

19. The method of claim 17,
wherein the frequency is changed if it is determined that the parameter is higher than the pre-determined threshold.

20. The method of claim 17,
wherein the pre-determined threshold is aligned with a pre-determined timeout time in a receiver.

21. A computer-readable medium comprising instructions which, when executed by a computer, make the computer perform a method for controlling a receiver device, the method comprising:

receiving a data packet according to a data format on a pre-determined radio frequency, wherein the data format comprises a parameter indicating a number of retries of transmission of the data packet;

determining whether the parameter is higher than a pre-determined threshold; and

changing a frequency on which the receiver receives data based on the determining.

22. The computer-readable medium of claim 21,
wherein the parameter is included in a head field of the data packet.
23. The computer-readable medium of claim 21,
wherein the frequency is changed if it is determined that the parameter is higher than the pre-determined threshold.
24. The computer-readable medium of claim 21, further comprising instructions which, when executed by a computer, make the computer perform:
determining a time since a data packet last was received from a transmitter.
25. The computer-readable medium of claim 24,
wherein the frequency is changed if the determined time is higher than a pre-determined timeout time.
26. The computer-readable medium of claim 25,
wherein the pre-determined timeout time is aligned with the pre-determined threshold.
27. A computer-readable medium comprising instructions which, when executed by a computer, make the computer perform a method for controlling a transmitter device, the method comprising:
transmitting a data packet according to a data format on a pre-determined radio frequency, wherein the data format comprises a parameter indicating a number of retries of transmission of the data packet;
determining whether an acknowledgement for reception of the data pack is received in the transmitter device, wherein the parameter is increased and the data packet is re-transmitted with the increased parameter if it is determined that an acknowledgement for reception of the data pack is not received in the transmitter device;

determining whether the value of the parameter is higher than a pre-determined threshold; and

changing a frequency on which the transmitter transmits data based on the determining.

28. The computer-readable medium of claim 27,
wherein the parameter is included in a head field of the data packet.
29. The computer-readable medium of claim 27,
wherein the frequency is changed if it is determined that the parameter is higher than the pre-determined threshold.
30. The computer-readable medium of claim 27,
wherein the pre-determined threshold is aligned with a pre-determined timeout time in a receiver.