

CLAIMS

What is claimed is

- 5 1. A method of determining as to whether a received signal includes a data signal, the method comprising
determining a first value based on a cyclic auto-correlation of the received signal,
determining a second value based on the cyclic auto-correlation of the
10 received signal, and
determining as to whether a received signal includes a data signal based on a comparison of the first value and the second value.
- 15 2. The method of claim 1,
wherein it is determined that the received signal includes a data signal if the second value is larger than the first value multiplied with a predetermined factor.
- 20 3. The method of claim 2,
wherein it is determined that the received signal does not include a data signal if the second value is smaller than or equal to the first value multiplied with the predetermined factor.
- 25 4. The method of claim 1, further comprising
filtering the received signal.
5. The method of claim 1, further comprising
sampling the received signal.
- 30 6. The method of claim 5, further comprising
filtering the sampled received signal.
7. The method of claim 2,

wherein the predetermined factor is determined based on a predetermined number of samples of the received signal.

8. The method of claim 2,

5 wherein the predetermined factor is determined based on a predetermined probability of false alarm.

9. The method of claim 8,

10 wherein the predetermined factor is determined based on the determination of the probability of the second value being greater than the first value multiplied with the predetermined factor in the case that the received signal does not include a data signal as the probability of false alarm.

10. The method of claim 1,

15 wherein the first value comprises the cyclic auto-correlation value corresponding to the cyclic frequency of zero.

11. The method of claim 10,

20 wherein the first value is the cyclic auto-correlation value corresponding to the cyclic frequency of zero.

12. The method of claim 1,

25 wherein the second value comprises the cyclic auto-correlation values corresponding to a plurality of predetermined cyclic frequencies.

13. The method of claim 12,

30 wherein the second value is given by the sum of the cyclic auto-correlation values corresponding to the cyclic frequencies of the plurality of predetermined cyclic frequencies.

14. The method of claim 1,

wherein the determining of the first value and the second value comprises determining an average value of a cyclic auto-correlation of the received signal.

5 15. The method of claim 1,
 wherein the determining of the first value and the second value
 comprises determining a maximum value of the cyclic auto-correlation of the
 received signal.

10 16. The method of claim 1,
 wherein the determining of the first value and the second value
 comprises determining an average value of a spectral correlation density of
 the received signal.

15 17. The method of claim 1,
 wherein the determining of the first value and the second value
 comprises determining a maximum value of the spectral correlation density of
 the received signal.

20 18. A system for determining as to whether a received signal includes a
 data signal, comprising
 a first determining unit configured to determine a first value based on a
 cyclic auto-correlation of the received signal,
 a second determining unit configured to determine a second value
25 based on the cyclic auto-correlation of the received signal, and
 a third determining unit configured to determine as to whether a
 received signal includes a data signal based on a comparison of the first value
 and the second value.

30 19. The system of claim 18, further comprising
 a filter for filtering the received signal.

20. The system of claim 18, further comprising

a sampling unit for sampling the received signal.

21. The system of claim 20, further comprising
a filter for filtering the sampled received signal.

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22. An electronic device comprising the system of any of the claims 18 to
21.

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23. The electronic device of claim 22,
wherein the electronic device is a sensing wireless device.

24. The electronic device of claim 22,
wherein the electronic device is a sensing wireless microphone.

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25. The electronic device of claim 22,
being configured as a communication device selected from a group of
communication devices consisting of
a communication terminal;
a medium player device configured to play at least one medium.

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26. The electronic device of claim 22, further comprising
a receiver to receive a signal.

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27. A computer program product which, when being executed by a
computer, makes the computer perform a method for determining as to
whether a received signal includes an information signal, comprising
determining a first value based on a cyclic auto-correlation of the
received signal,
determining a second value based on the cyclic auto-correlation of the
received signal, and
determining as to whether a received signal includes a data signal
based on a comparison of the first value and the second value.

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What is claimed is

1. A method of determining as to whether a received signal includes a data signal, the method comprising
determining a first value based on a cyclic auto-correlation of the received signal,
determining a second value based on the cyclic auto-correlation of the received signal, and
determining as to whether a received signal includes a data signal based on a comparison of the first value and the second value,
wherein it is determined that the received signal includes a data signal if the second value is larger than the first value multiplied with a predetermined factor.
2. The method of claim 1,
wherein it is determined that the received signal does not include a data signal if the second value is smaller than or equal to the first value multiplied with the predetermined factor.
3. The method of claim 1, further comprising
filtering the received signal.
4. The method of claim 1, further comprising
sampling the received signal.
5. The method of claim 4, further comprising
filtering the sampled received signal.
6. The method of claim 1,
wherein the predetermined factor is determined based on a predetermined number of samples of the received signal.

7. The method of claim 1,
wherein the predetermined factor is determined based on a predetermined probability of false alarm.
8. The method of claim 7,
wherein the predetermined factor is determined based on the determination of the probability of the second value being greater than the first value multiplied with the predetermined factor in the case that the received signal does not include a data signal as the probability of false alarm.
9. The method of claim 1,
wherein the first value comprises the cyclic auto-correlation value corresponding to the cyclic frequency of zero.
10. The method of claim 9,
wherein the first value is the cyclic auto-correlation value corresponding to the cyclic frequency of zero.
11. The method of claim 1,
wherein the second value comprises the cyclic auto-correlation values corresponding to a plurality of predetermined cyclic frequencies.
12. The method of claim 11,
wherein the second value is given by the sum of the cyclic autocorrelation values corresponding to the cyclic frequencies of the plurality of predetermined cyclic frequencies.
13. The method of claim 1,
wherein the determining of the first value and the second value comprises determining an average value of a cyclic auto-correlation of the received signal.
14. The method of claim 1,
wherein the determining of the first value and the second value comprises determining a maximum value of the cyclic auto-correlation of the received signal.

15. The method of claim 1,
wherein the determining of the first value and the second value comprises
determining an average value of a spectral correlation density of the received signal.
16. The method of claim 1,
wherein the determining of the first value and the second value comprises
determining a maximum value of the spectral correlation density of the received signal.
17. A system for determining as to whether a received signal includes a data signal,
comprising
a first determining unit configured to determine a first value based on a cyclic
auto-correlation of the received signal,
a second determining unit configured to determine a second value based on the
cyclic auto-correlation of the received signal, and
a third determining unit configured to determine as to whether a received signal
includes a data signal based on a comparison of the first value and the second value,
wherein the third determining unit is configured to determine that the
received signal includes a data signal if the second value is larger than the first value
multiplied with a predetermined factor.
18. The system of claim 17, further comprising
a filter for filtering the received signal.
19. The system of claim 17, further comprising
a sampling unit for sampling the received signal.
20. The system of claim 19, further comprising
a filter for filtering the sampled received signal.
21. An electronic device comprising the system of any of the claims 17 to 20.
22. The electronic device of claim 21,
wherein the electronic device is a sensing wireless device.

23. The electronic device of claim 21,
wherein the electronic device is a sensing wireless microphone.
24. The electronic device of claim 21,
being configured as a communication device selected from a group of
communication devices consisting of
a communication terminal;
a medium player device configured to play at least one medium.
25. The electronic device of claim 21, further comprising
a receiver to receive a signal.
26. A computer program product which, when being executed by a computer, makes
the computer perform a method for determining as to whether a received signal includes
an information signal, comprising
determining a first value based on a cyclic auto-correlation of the received signal,
determining a second value based on the cyclic auto-correlation of the received
signal, and
determining as to whether a received signal includes a data signal based on a
comparison of the first value and the second value,
wherein it is determined that the received signal includes a data signal if
the second value is larger than the first value multiplied with a predetermined factor.