

WHAT IS CLAIMED IS:

1. A method for receiving a packet from sources using different packet transmission protocols, comprising:

receiving packets until a packet having a known preamble is received, wherein the receiving comprises parallel processing that concurrently seeks to detect each of a plurality of different preambles associated with a plurality of known modulation techniques, respectively, within each of the received packets;

identifying a modulation technique from among the plurality of known modulation techniques, wherein the identifying is based at least in part on the known preamble of the received packet; and

demodulating the received packet based on the identified modulation technique, wherein the demodulating is performed within a state selected from among a plurality of states, each of the plurality of states associated with a respective modulation technique;

wherein each of the plurality of known modulation techniques utilizes a same frequency hopping pattern.

2. The method as in claim 1, wherein the known preamble is part of a synchronization header of the received packet.

3. The method as in claim 1, wherein the packets received are received within an inhomogeneous network, and wherein within the inhomogeneous network at least some of the plurality of different preambles are sent by nodes associated with metrology devices in a smart electrical grid and at least some of the plurality of different preambles are sent by nodes not associated with metrology devices.

4. The method as in claim 1, wherein:

the identifying comprises recognizing a transmission protocol; and

the demodulating uses the recognized transmission protocol.

5. The method as in claim 1, wherein:

the received packets are received on a single radio frequency used by all devices on a network.

6. The method as in claim 1, wherein:

the received plurality of packets are received on a plurality of frequencies according to a single frequency hopping technique used by all devices on a network.

7. A method for receiving information, comprising:

receiving a plurality of packets from a plurality of different nodes operating within an inhomogeneous network, the plurality of received packets each having one of a plurality of different preambles indicating a plurality of different modulation techniques, wherein the receiving comprises parallel processing that concurrently seeks to detect each of the plurality of different preambles according to each of the plurality of different modulation techniques, respectively, and wherein a same frequency hopping pattern is used with each of the plurality of different modulation techniques;

identifying a modulation technique of a received preamble of a received packet from among the plurality of received packets according to operation of a first state of a state machine operated on a node, wherein the identified modulation technique is from among the plurality of different modulation techniques; and

demodulating, in a second state of the state machine, the received packet based on the identified modulation technique.

8. The method as in claim 7, wherein receiving the plurality of packets comprises use of a narrow bandwidth receiver whose bandwidth is based at least in part on bandwidth used by the plurality of different modulation techniques.

9. The method as in claim 7, wherein the received preamble is at least part of a synchronization header of the received packet.

10. The method as in claim 7, wherein the inhomogeneous network comprises a mesh network of nodes associated with metrology devices.

11. A packet receiver, comprising:
a radio frequency front end configured for frequency hopping;
a baseband processor, in communication with the radio frequency front end; and
a synchronization header detector configured to detect a packet having a known preamble, wherein the detecting comprises parallel processing that concurrently seeks to detect each of a plurality of different preambles associated with each of a plurality of different transmission protocols within each of a plurality of received packets, wherein a single frequency hopping pattern is used by the radio frequency front end for each of the plurality of different transmission protocols.

12. The receiver as in claim 11, wherein said baseband processor is configured to process with a modulation technique determined based on packet protocol identification performed by said synchronization header detector.

13. The receiver as in claim 11, wherein said baseband processor and said synchronization header detector comprise software running on a processor.

14. The receiver as in claim 11, wherein said synchronization header detector comprises part of said baseband processor.

15. The receiver as in claim 11, combined with a meshed network for metrology devices.

16. The receiver as in claim 11, wherein the radio frequency front end and the baseband processor comprise a combination of hardware and software.

WHAT IS CLAIMED IS:

1. A method for receiving a packet transmission from sources using different packet transmission protocols, comprising:
listening for a selected portion of multiple types of packet transmissions;
identifying occurrence of a selected portion of one of the multiple types of
5 packet transmissions; and
demodulating the packet transmission based on the identified portion.
2. A method as in claim 1, wherein the selected portion is a synchronization header of a packet.
3. A method as in claim 1, wherein the selected portion is a preamble portion of a synchronization header of a packet.
4. A method as in claim 1, further comprising associating a predetermined modulation technique with the identified selected portion of the packet transmission.
5. A method for exchanging information in a network formed from multiple nodes, comprising:
transmitting a packet from a node using one of multiple packet protocols;
listening for a selected portion of the transmitted packet;
5 identifying occurrence of a selected portion of one of the multiple packet protocols within the transmitted packet; and
demodulating the packet based on the identified portion.
6. A method as in claim 5, wherein transmitting comprises transmitting a packet using a single radio frequency for each of the multiple packet protocols.
7. A method as in claim 6, further comprising listening for the selected portion of the transmitted packet with a narrow bandwidth receiver whose
bandwidth is based on the widest bandwidth used by the multiple packet protocols.

8. A method as in claim 5, wherein transmitting comprises transmitting a packet using a frequency hopping system wherein the same frequency hopping pattern is used for each of the multiple packet protocols.

9. A method as in claim 5, wherein the selected portion is the synchronization header of the transmitted packet.

10. A method as in claim 5, wherein the selected portion is a preamble portion of the synchronization header of the transmitted packet.

11. A method as in claim 5, further comprising associating a predetermined modulation technique with the identified selected portion of the packet transmission.

12. A method as in claim 5, wherein at least some of said nodes are associated with metrology devices, and said network comprises a meshed network of metrology devices.

13. A packet receiver, comprising:
a radio frequency front end;
a baseband processor; and
a synchronization header detector,
5 wherein said synchronization header detector is configured to listen for multiple packet protocols and to identify occurrence of a selected portion of a packet transmitted under one of such multiple packet protocols; and
wherein said baseband processor is configured to process a received packet based on a single modulation technique at a time.

14. A receiver as in claim 13, wherein said radio frequency front end is configured to receive transmissions on a single frequency.

15. A receiver as in claim 13, wherein said radio frequency front end is a frequency hopping receiver.

16. A receiver as in claim 15, wherein said frequency hopping pattern is the same for each of such multiple packet protocols.

17. A receiver as in claim 13, wherein said baseband processor is configured to process with a modulation technique determined based on packet protocol identification performed by said synchronization header detector.

18. A receiver as in claim 13, wherein said baseband processor and said synchronization header detector comprise software running on a processor.

19. A receiver as in claim 13, wherein said synchronization header detector comprises part of said baseband processor.

20. A receiver as in claim 13, combined with a meshed network for metrology devices.