TABLE 2

Relationship between baseline bit error rate (BER) and distance

Transmit Power (mA)	Maximum Range (inches)	BER @ 75% of range	BER @ 25% of range
7.5	14	0.0e−0 (10.5 in)	0.0e−0 (3.5 in)
30	26	8.0e−8 (19.5 in)	0.0e−0 (6.5 in)
60	34	8.0e−8 (25.5 in)	0.0e−0 (8.5 in)
110	44	4.2e−1 (33.0 in)	0.0e−0 (11.0 in)

When the transmitter was operated at the maximum power of 110 mA, at seventy-five percent of the full range, a substantial amount of bit errors were noticed. The bit errors were typically sporadic but in large groups.

Two separate tests were performed to test bit error rates when the transmitter and receivers were moving with respect to each other. Both the transmitter and receiver were operating at seventy-five percent of their maximum range. The first test investigated angular changes. When holding one end still and rotating the other end along three axes (yaw, pitch and roll), no significant bit errors occurred as long as rotation was less than +/−45 percent of the perfectly aligned orientation. The second test investigated changes in distance. The test was performed by maintaining the angular orientation fixed as the units were moved closer and farther apart at various rates. If the distance moved exceeded twenty percent of the maximum range, bit error were produced.

When at maximum power and distance (that is, 110 mA and 44 inches, respectively), standing between the units had no impact on the range (no bit errors were introduced). The signal was essentially going through or around an adult male chest. When at 7.5 mA and a distance of eighteen inches, that maximum distance for that power, pressing the transmit and receive units against an adult male chest and waist had no impact on the range, i.e. no bit errors were introduced.

The transmitter and receiver were also attached to different human bodies about eighteen inches apart and pressed against a large metal object such as a trash dumpster. No bit errors were introduced.

A measurement of current draw was also performed at the various transmit power levels. The results of the measurements are shown in Table 3. It should be noted that power draw was 200 uA in the receive mode.

TABLE 3

Relationship between board supply current and Transmit Power

Transmit Power (mA)	Board Supply Current (mA)
7.5	6.6
60	35
110	70
<standby>	2 uA

Those skilled in the art will appreciate that various adaptations and modifications of the above-described embodiments of the present invention can be configured without departing from the scope and spirit of the present invention. For example, magnetic induction coils of the present invention need not be located around an individual's waist. For example, in at least one embodiment of the invention, the magnetic induction coils **515** and **615** are preferably armbands, leg bands, shoulder bands, or neckbands. In addition, magnetic induction coils **515**, **615** may be separate accessories or may be attached to or integrated with a garment.

In view of the foregoing, it is to be understood that, within the scope of the appended claims, the invention may be practiced and constructed other than as specifically described herein.

We claim:

1. A personal area network for transmitting and receiving data via magnetic induction, comprising:
- a magnetic induction antenna belt;
- a primary transceiver for inclusion in a belt buckle attached to said belt;
- an adapter for inclusion in said belt buckle, said adapter for electronically coupling said primary transceiver to said magnetic induction antenna belt and
- a plurality of secondary transceivers in communication with said primary transceiver to allow said primary transceiver to communicate with said plurality of secondary transceivers via said antenna belt, said plurality of secondary transceivers being located in proximity to said primary transceiver, and at least one of said secondary transceivers being coupled to a physiological sensor attached to a body part.

2. The personal area network of claim **1**, wherein said magnetic induction antenna belt has a magnetic induction coil that conducts a current in the milliampere range.

3. The personal area network of claim **1**, wherein data transmission and reception between said primary and secondary transceivers occurs over a maximum distance range of two to three meters.

4. The personal area network of claim **1**, wherein said primary transceiver is the master hub and includes a magnetic induction transceiver.

5. The personal area network of claim **1**, wherein said primary transceiver is magnetically coupled to at least one sensor node.

6. The personal area network of claim **1**, wherein said at least one sensor node and said magnetic induction coil are misaligned by an angle of plus or minus forty-five degrees.

7. The personal area network of claim **1**, wherein said coilbelt includes at least one wire forming at least one revolution around an individual's waist.

8. The personal area network of claim **7**, wherein said at least one wire is manufactured of ribbon cable.

9. The personal area network of claim **7**, wherein said at least one wire is manufactured of Mylar cable.

10. The personal area network of claim **1** wherein said at least one sensor node includes a physiological sensor.

11. The personal area network of claim **1**, wherein at least one secondary transceiver is coupled to a sensor node.

12. The personal area network of claim **11**, further comprising a connector residing at a transaction point of said magnetic induction coil, said connector serving as an intermediary between said coil and said hub.

13. The personal area network of claim **12**, wherein said connector includes
- a plug terminal including a set of plug pins; and
- a receptacle terminal including a set of receptacle pins;
- wherein each of said plug pins corresponds to a receptacle pin.

14. The personal area network of claim **13**, wherein at least one wire is connected to one of said plug pins and said master hub and at least one wire is connected to one of said receptacle pins and said master hub.

15. The personal area network of claim **14**, wherein at least one wire is connected to one of said receptacle pins and one of said plug pins.

16. The personal area network of claim **14**, wherein at least one wire is connected to one of said receptacle pins and one of