

What is Claimed is: CLAIMS

1. A method for increasing the power transfer efficiency of a wireless induction power and/or data transfer system comprising a magnetic field transmitter which is positioned on a first side of a barrier and a magnetic field receiver which is positioned on a second side of the barrier opposite the first side, the method comprising:

disposing at least one flux flow member in or adjacent the barrier at least partially between the transmitter and the receiver, the flux flow member comprising a magnetic permeability different from a magnetic permeability of the barrier;

wherein the flux flow member increases the amount of magnetic flux generated by the transmitter which is coupled through the barrier and into the receiver.

2. The method of claim 1, wherein the at least one flux flow member comprises a magnetic permeability lower than the magnetic permeability of the barrier, the transmitter comprises two transmitter poles, and the step of disposing at least one flux flow member in or adjacent the barrier comprises:

incorporating the flux flow member into the barrier such that at least a portion of the flux flow member is positioned between the transmitter poles;

wherein the flux flow member inhibits the magnetic flux generated by the transmitter from shorting through the barrier between the transmitter poles.

3. The method of claim 2, wherein the flux flow member comprises a thickness which is approximately the same as a thickness of the barrier at an interface between the barrier and the flux flow member.

4. The method of claim 2, wherein the flux flow member comprises an elongated member which is positioned between the transmitter poles.

5. The method of claim 4, wherein the flux flow member extends through the barrier generally perpendicular to the transmitter poles.

6. The method of claim 5, wherein the flux flow member comprises a length which is sufficient to prevent the magnetic flux generated by the transmitter from shorting through the barrier around the ends of the flux flow member.

7. The method of claim 5, wherein the flux flow member conforms to the shape of the barrier.

receiver poles which are generally aligned with the transmitter poles, and the step of disposing at least one flux flow member in or adjacent the barrier comprises:

incorporating the flux flow member into the barrier between a first transmitter pole and a first receiver pole and between a second transmitter pole and a second receiver pole;

wherein the flux flow member facilitates the flow of magnetic flux between the transmitter poles and the receiver poles.

19. The method of claim 18, wherein the step of incorporating the at least one flux flow member into the barrier comprises incorporating a first flux flow member into the barrier between the first transmitter pole and the first receiver pole and incorporating a second flux flow member into the barrier between the second transmitter pole and the second receiver pole.

20. The method of claim 19, wherein the barrier comprises a first housing in which the transmitter is located and a second housing in which the receiver is located, and the step of incorporating the first and second flux flow members into the barrier comprises attaching the flux flow members to at least one of the housings.

21. A wireless induction power and/or data transfer system which comprises:

a magnetic field transmitter which is positioned on a first side of a barrier;

a magnetic field receiver which is positioned on a second side of the barrier opposite the first side; and

at least one flux flow member which is disposed in or adjacent the barrier at least partially between the transmitter and the receiver, the flux flow member comprising a magnetic permeability different from a magnetic permeability of the barrier;

wherein the flux flow member increases the amount of magnetic flux generated by the transmitter which is coupled through the barrier and into the receiver.

22. The system of claim 21, wherein the at least one flux flow member comprises a magnetic permeability lower than the magnetic permeability of the barrier, the transmitter comprises two transmitter poles, and at least a portion of the flux flow member is positioned between the transmitter poles.