

Operational Description

In the figure 1 is our wireless Puck (Mouse) circuit, the L1 is a component for oscillate. Its function is like a location oscillator in normal radio receiver or horizontal oscillator in television receiver. But only different is working frequency. The L1 is composed of a Ferrite rod (core) and a ledge of coil and a coil see figure 2. The ferrite rod (core) in our circuit are used for two main functions:

1. Tuning: moving the ferrite rod adjusts the coil to required inductance value (L).
When inductance value (L) is change we get different frequency to decide the value of pressure.
2. EMI suppression: the ferrite rod (core) could suppression EMI conduct.

In the figure 3 is the working methodology of our wireless, when the Puck (Mouse) working there is a magnetic occur as a magnet, the line of magnetic force are form north pole to south pole, as the rule of magnetic it must be a close loop for the line of magnetic force.

If not it loses on its power. (Your can explain it as the transformer when the transformer between first side and second side have a long distance the second side will conduct from first side.)

When wireless Puck (Mouse) working the line of magnetic force will force on the grid of tablet and tablet use the current stem from magnetic force to decide the position of Puck (Mouse).

If we don't care the effect of ferrite rod (It will reduce EMI), we can calculate the maximal magnetic field intensity H of wireless Puck (Mouse) .

$$H=(NI)/L=96 \times 120 \mu\text{A}/6\text{mm}=1.92 \mu\text{A}/\text{M}=0.00000192 \text{A}/\text{M} \quad (\text{MKSA})$$

N=number of coil turn

I=current on coil

L=length of coil turn

We can get a result the magnetic field intensity will less 0.00000192A/M, and it like a static magnetic fields not a Time-varying fields (radio electromagnetic fields).

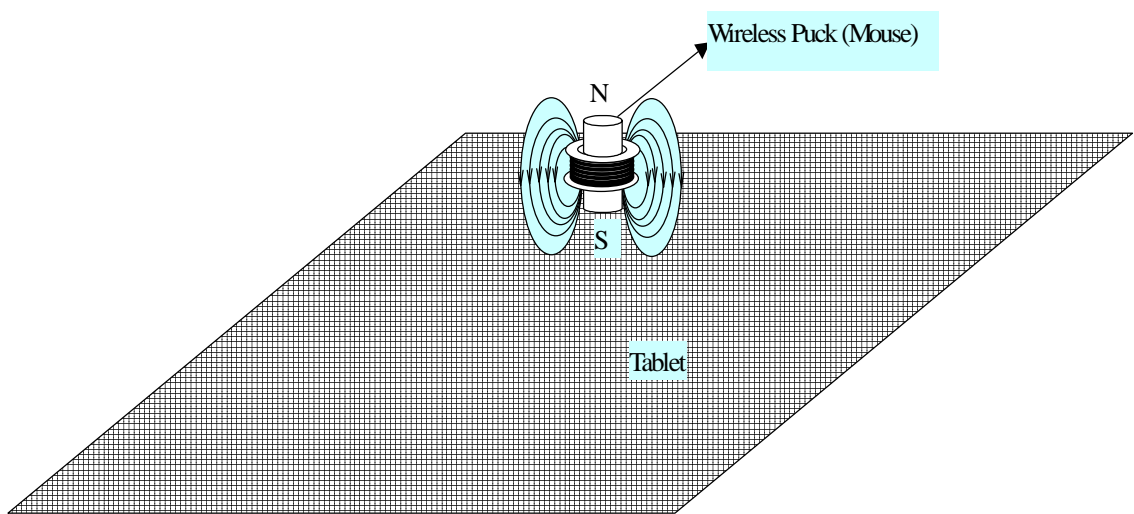
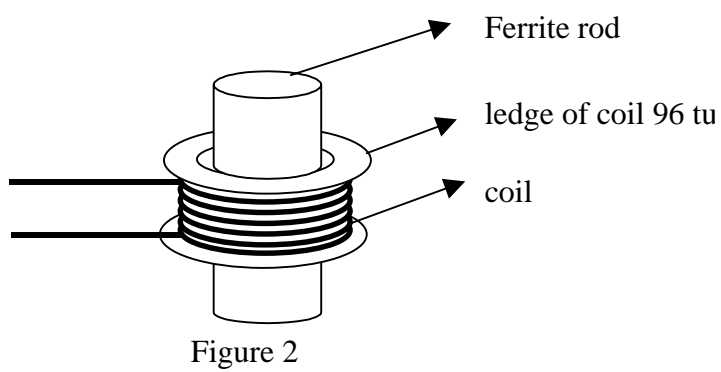
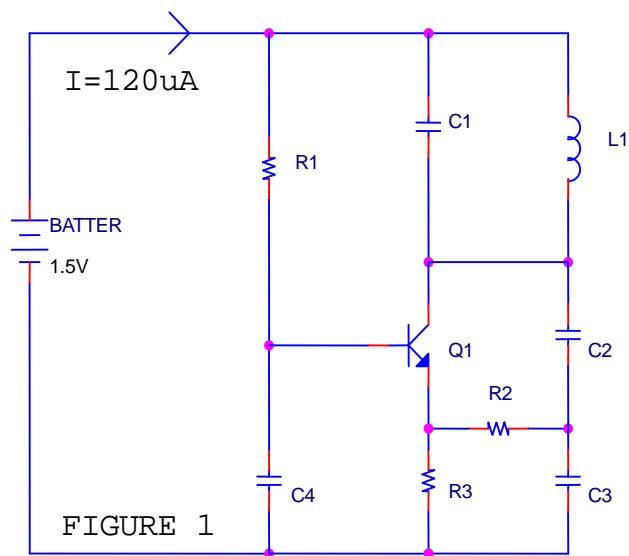


Figure 3