

Cyber Scroll Tablet working theory :

Fig 4 is a function block diagram of Cyber Scroll Tablet.

Function Block description :

1. The micro-controller (72) generates control signal to each portion . For example, It enables the X-Y-axis scanning circuit (30), control the drive signal on/off, and read button status from push Button demodulator (71), then send coordinate position to PC via PSII interface.
2. Clock generator (74) generates system clock to micro-controller (72) , and provides Clock to counting output circuit(76) to generates a sinusoidal signal of 345.6KHz , the Counting output circuit drives the coil (20) to generates magnetic flux for PEN (200) (or mouse PUCK) device energy.
3. The PEN (and mouse PUCK) device(200) didn't have power inside , it will induce the power from Cyber Scroll tablet while application.
4. X-Y axis signal-scanning circuit (30) bypass the PEN (or mouse PUCK) feedback signal .

But how did they work together ?

Normally the micro-controller(72) enable the counting output circuit(76) to drive the coil(20) to generate magnetic flux and control the X-Y axis signal scanning circuit (30) to scan antenna area . It will get the energy by magnetic flux and feedback to antenna area (10). when PEN(or mouse PUCK(200)) is applied on the tablet surface ,

The X-Y axis signal scanning circuit(30) which is composed of analog mutiplxer And it is connect to amplifier circuit (40) , the scanning circuit bypass the magnetic flux signal feedback from PEN(or mouse PUCK) to amplifier circuit(40).

The amplifier circuit (40) will send out the magnetic flux signal by two ways, One is a limiting circuit (50), the other one is synchronic determination circuit (60).

The limiting circuit (50) restricts the signal amplitude and provides the limited signal to push-button demodulator (71) to detect which button is pressed on PEN(or mouse PUCK).

The magnetic flux signal and noise signal is mixed together . Synchronous determination circuit (60) is extracted the magnetic flux signal and send it to coordinate detection circuit (62).

Micro-controller (72) will detect the coordinate and button status from coordinate Detection circuit (62) output signal and push-button demodulator circuit (71) output signal.

Then micro-controller (72) process these signal (coordinate signal and button Status signal) and send to PC via PSII interface .

End of these states micro-controller (72) will rescan the X-Y axis antenna Area and wait the PEN (or mouse PUCK) feedback signal for next cycle .

