

uBoard Operation Description

1. Basic

The ultrasonic of 40KHz and infrared light generated from the pen is transmitted to receiver. The received signal is converted to mouse point by the Argos, MCU.

2. System Operation

uBoard receiver uses the PC power. And Master clock is 4.8MHz x-tal. System Power is converted to 3.3V by the internal LDO. LDO is controlled by Argos.

uBoard PEN uses the battery power(180mAh, Li-polymer). It is working by LC resonance and IR_LED signal. PEN battery is charging uses a PC power supply.

uBoard operating is very simple. You can understand that by lightning. After a few seconds after the lightning hit you can hear the thunder. It is the same principle. The lightning is the IR_LED, the thunder is the ultrasound. The IR_LED signal and ultrasonic signal are generated by pen at the same time. Just the pen is periodically generated the IR_LED signal and ultrasound. In this case, the IR_LED signal and ultrasonic signal does not have no meaning as a wireless signal data. The ultrasonic, will arrive later than the IR_LED at the receiver. Argos is track the position of the pen as the delay time between the two signals.

The received ultrasonic and infrared light from the pen is very low voltage level. So we are amplified Argos's internal OpAmp. And the amplified signal is converted to MOUSE POINT DATA. The changed data is sent to PC. Then, it is operation same to mouse point.