Avant Com
瑋忠科技企業股份有限公司

2.4GHz Wireless Mouse solution(ADNS5030 & ADNS5090)

Sonix USB SN8F2271 MCU & AMICCOM A7105 2.4GHz R.F chip & ADNS5030, ADNS5090 Optical Mouse sensor

Features

- LED-Based Optical Technology,Support Avago ADNS5030,ADNS5090
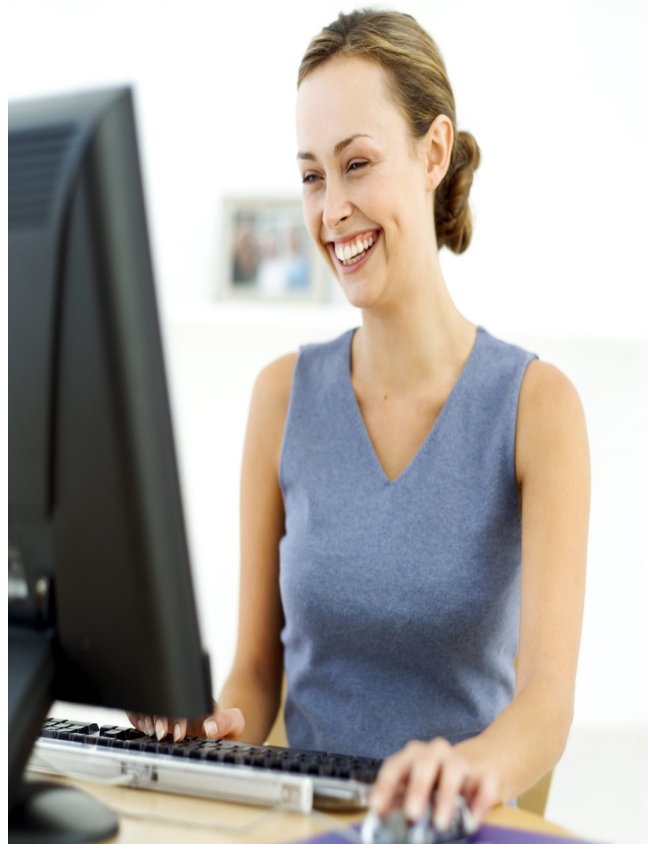- Windows® 98SE, Windows 2000 and Windows XP compatibility

RF:
- Operate frequency: 2400 ~ 2483 MHz (ISM band)
- 83 channel h opping (one of 2405, 2407, … , 2477MHz)
- 32 bits ID number :allows the receiver to identify its mouse
- MAC scheme: ALOHA
- TX power: 0 dBm.
- Error detection: CRC
- Error retransmission
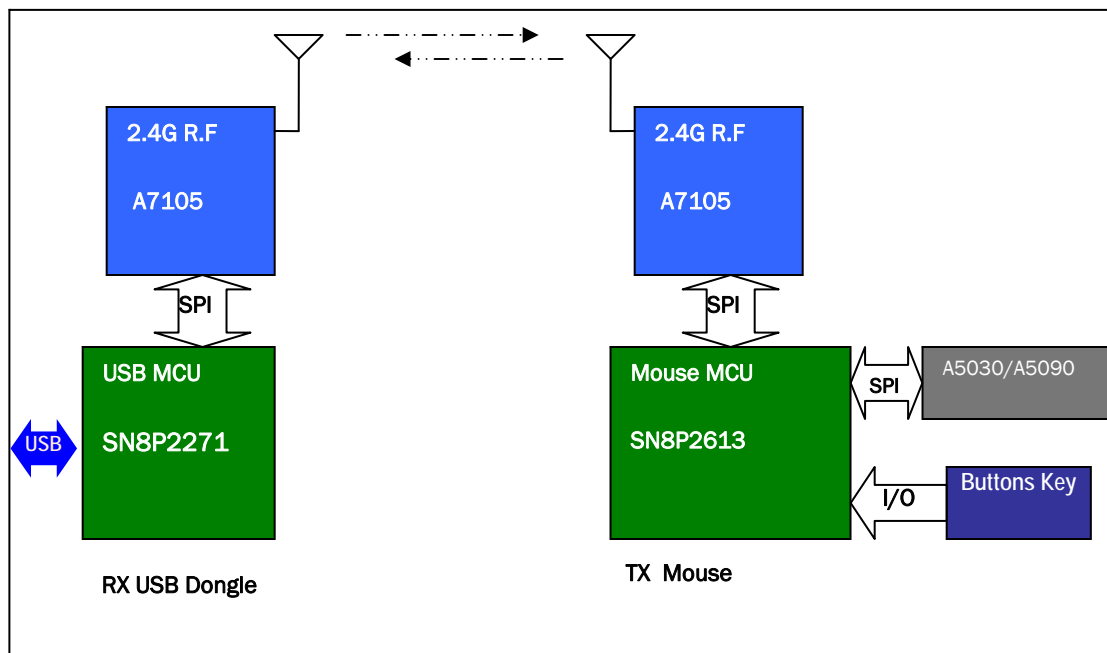- 1 **connect (bind) button** for RF link sync or Auto connect

Dongle:
- USB 1.1(HID mode),**Naro dongle**, *EEPROM Free*

Mouse:
- Operating voltage range: 2.2V~3.0V,*EEPROM Free*
- **500/1000 CPI option** optical sensor, default 1000CPI
- In-use Sensitivity Switching to high and low CPI for 2 segment resolution with LED indicator through "**CPI_SW**" button and no software driver required
- Sensor orientation Vertical or Horizontal strap for mouse shape
- **LVD**(Low voltage detect) —-**Battery Low LED**(2.2V or 1.2V)
- Flexible support numbers of buttons:
- **Left**; **Middle**; **Right** button for standard and **side_up**;
- **side_down** for extended button
- **2 tilt buttons (left / right)** decode for horizontal scrolling
- 2 customized buttons for **Page down / Page Up** hot-keys
- High speed mouse report rate up to **125 report/s**
- Distance between dongle and mouse: **more than 15M**.
- Wakeup mouse by "**press button**" and "**move mouse**"
- Power consumption:
  ADNS5030—-Moving: 15mA , Standby:1.8mA, Sleep:15uA
  ADNS5090—-Moving: 8mA , Standby:1.6mA, Sleep:15uA(3V Battery)
  ADNS5090—-Moving: 18mA , Standby:2.9mA, Sleep:15uA(1.5V Battery)
- Pass 72 type paper surface test
- Power down mode: 3 Minutes (Sleep Mode)

Function Block

Diagram: RX USB Dongle — 2.4G R.F A7105 ↔ (SPI) ↔ USB MCU SN8P2271 ↔ USB.
TX Mouse — 2.4G R.F A7105 ↔ (SPI) ↔ Mouse MCU SN8P2613 ↔ (SPI) A5030/A5090; (I/O) Buttons Key.

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Amiccom A7105

Low power R.F 2.4GHz
Transceiver

Features

- Frequency bands: 2400 – 2483MHz ISM band.
- FSK and GFSK Modulation
- Low current consumption: RX:16 mA
- Low current consumption: TX:19 mA (output power 0dBm)
- Programmable RF output power: up to 0 dBm.
- On chip regulator, supply voltage 1.9 ~ 3.6V.
- On chip low power RC oscillator.
- Low current (< 1uA) in sleep mode and need only one crystal while working together with MCU.
- High sensitivity (-100dBm@250Kbps, -96dBm@500Kbps,)
- Programmable data rate up to 500Kbps
- Support 4- wire(SPI) or 3- wire interface to access FIFO data, command and register setting
- Package handling hardware includes preamble, sync word, FEC, CRC data whitening and Manchester coding.
- Separate 64 – byte RX and TX FIFOs
- Support FIFO extension function and up to 256 bytes.
- Easy to use with an low cost MCU
- Fast settling time synthesizer for frequency hopping system.
- Digital RSSI output for clear channel indication
- Digital temperature output
- Build in 1 channel ADC for detect external analog element.
- Build in WWS(wireless wakeup system) for reduce power consumption of battery.
- Support Frequency compensation scheme to make use the low cost (low accuracy) crystal.

Channel	Frequency	Unit
0	2418	
1	2421	
2	2424	
3	2427	
4	2430	
5	2433	
6	2436	
7	2439	
8	2442	Mhz
9	2445	
10	2448	
11	2451	
12	2454	
13	2457	
14	2460	
15	2463	

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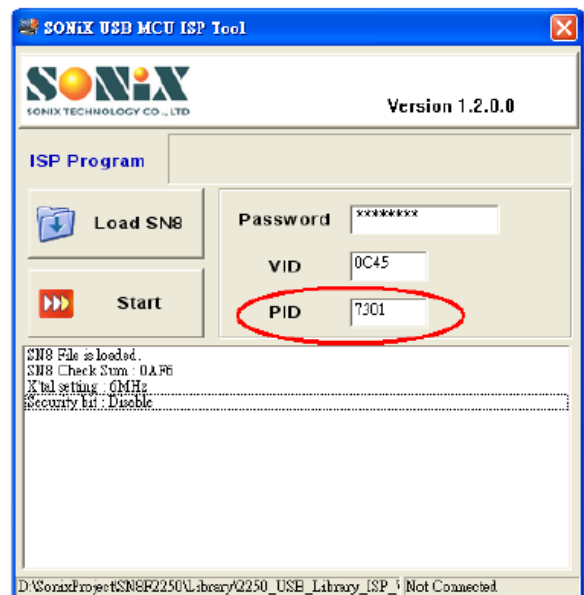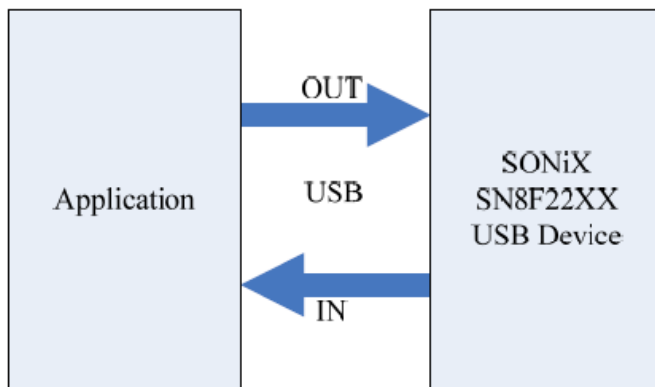
SONIX SN8F2271

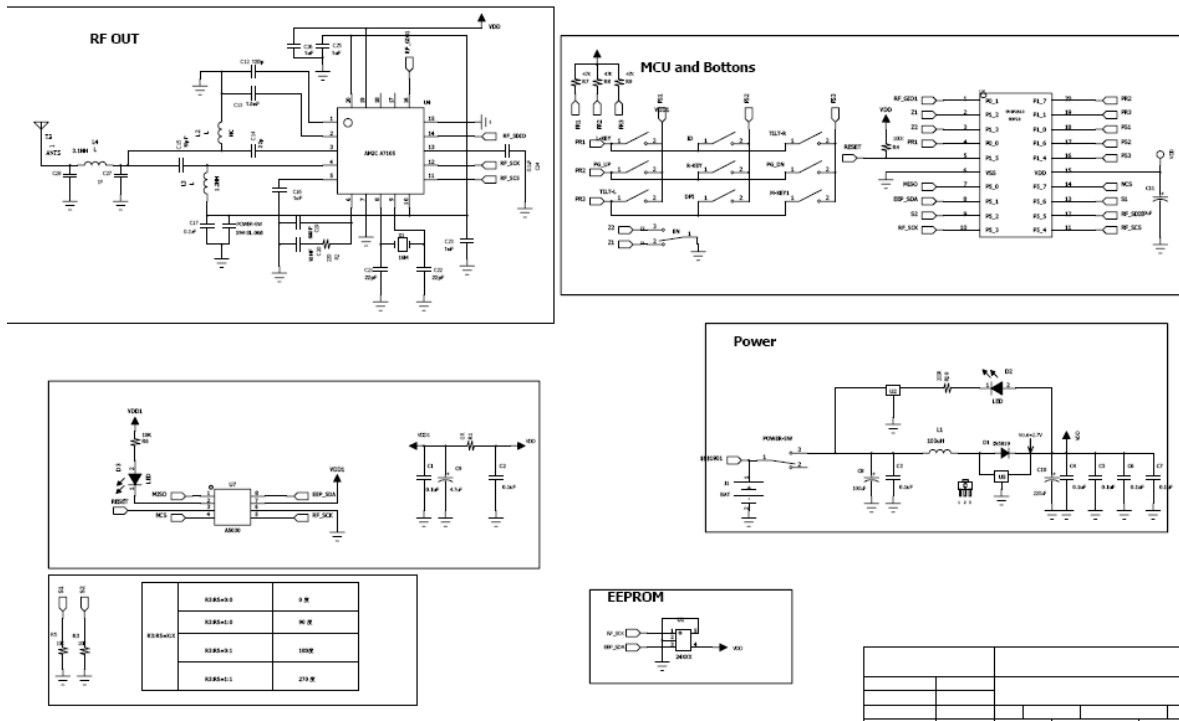L/S USB FLASH Micro-controller

Features

- Flash ROM size: 5K x 16 bits, including in system programming function and EEPROM enumeration. 20000 erase/write cycles
- RAM size: 192 x 8 bits
- Low Speed USB 2.0 ,
  Conforms to USB specification, Version 2.0. 3.3V regulator output for USB D- pin internal ,1.5k ohm pull-up resistor.
  Integrated USB transceiver,Supports 1 low speed USB device address
  1 control endpoint 2 interrupt IN/OUT endpoints, each has 8 bytes FIFO
- Two system clocks.
  Internal low clock: RC type 12KHz which Fosc = 12KHz
  Internal High clock: Fosc = 6MHz
- USB In-system re-programmability
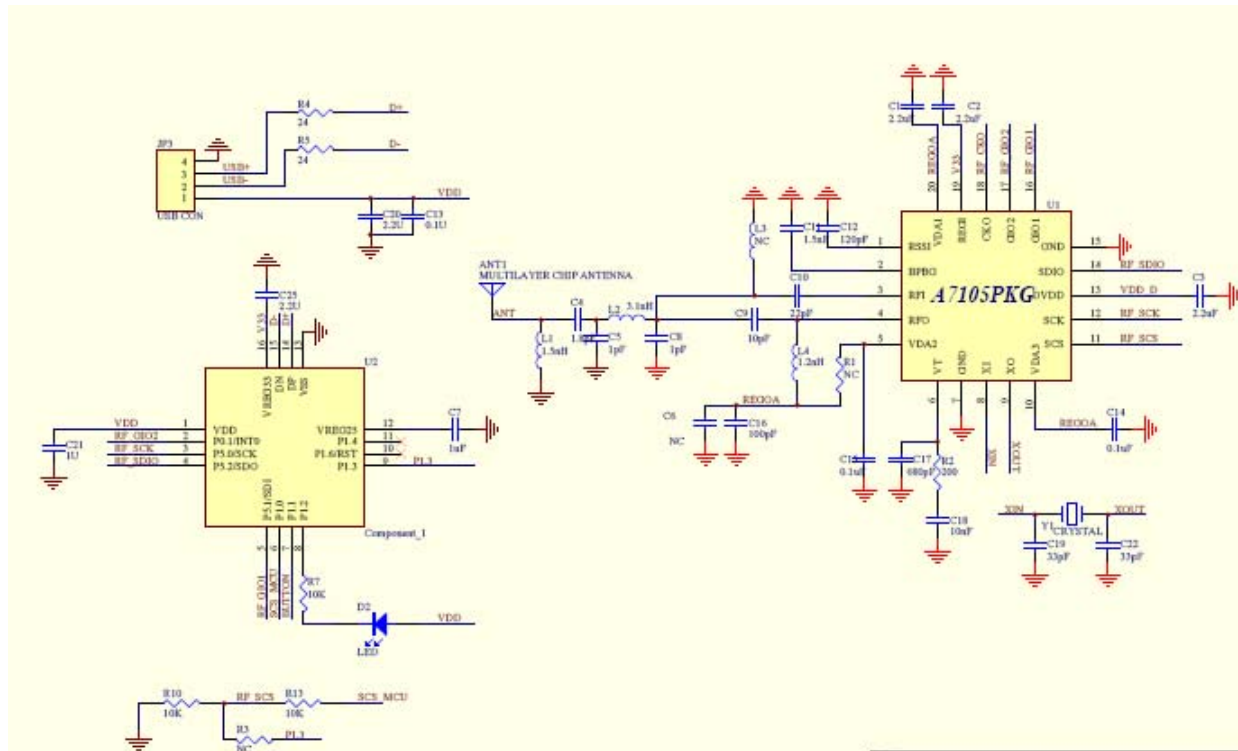
A7105 Naro dongle

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TX Mouse schermatic

RX USB Dongle schermatic

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