

2.4GHz Wireless Mouse (Pixelart PAN3204 & PAN3204L)

Sonix USB SN8P2271 MCU & AMICCOM A7105 2.4GHz R.F chip & PAN3204 Optical Mouse sensor

Features

- LED-Based Optical Technology, Support PixelArt PAN3204 & PAN3204DB
- Windows® 98SE, Windows 2000 and Windows XP compatibility

RF:

- Operate frequency: 2400 ~ 2483 MHz (ISM band)
- 83 channel hopping (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), Nano dongle, EEPROM Free

Mouse:

- Operating voltage range: 2.2V~3.0V,
- 400/800/1200/1600 CPI option optical sensor, default 800CPI
- In-use Sensitivity Switching to high and low CPI for 4 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 10M.
- Wakeup mouse by "press button" and "move mouse"
- Power consumption:

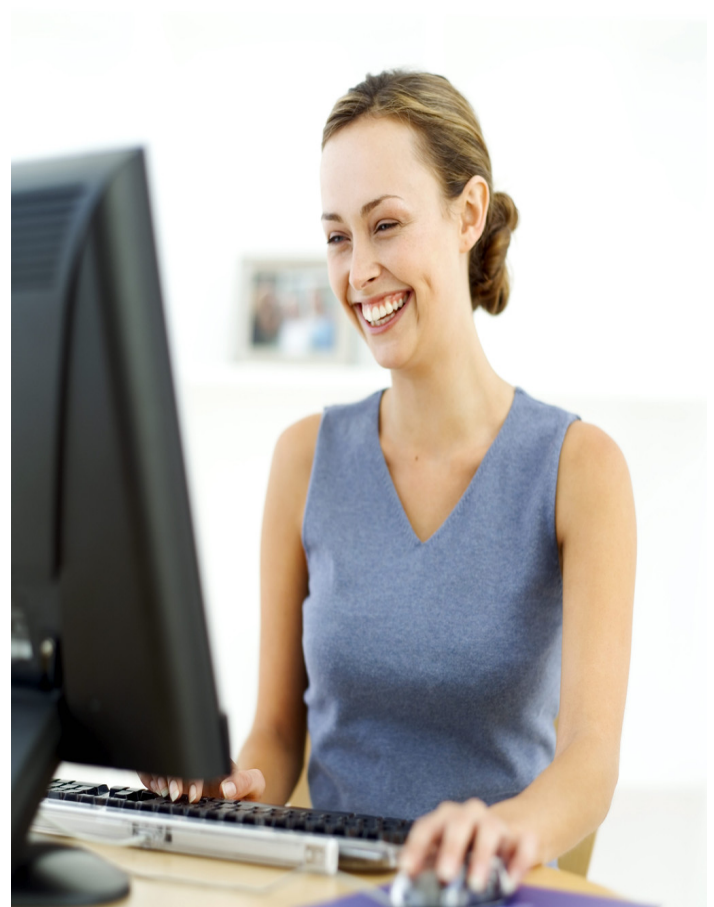
PAN3204

Moving: 10mA , Standby:1.6mA , Sleep:15uA(3V Battery)
Moving: 20mA , Standby:2.9mA , Sleep:15uA(1.5V Battery)

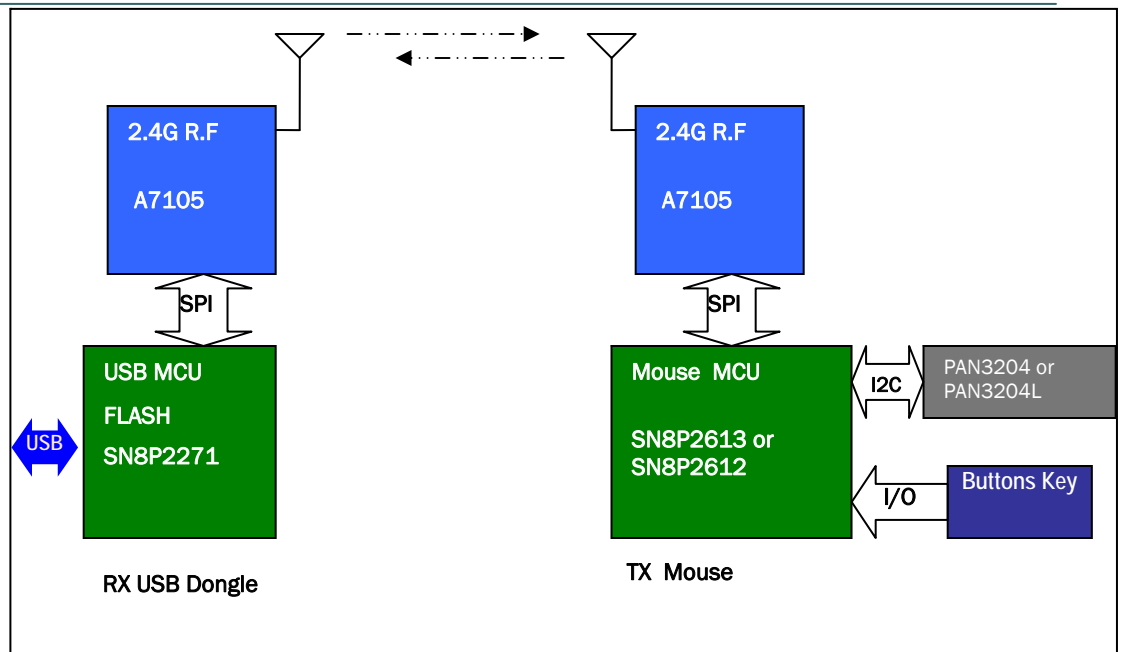
PAN3204L

Moving: 8mA , Standby:1.6mA , Sleep:15uA(3V Battery)
Moving: 15mA , Standby:2.9mA , Sleep:15uA(1.5V Battery)

- Pass 72 type paper surface test
- Power down mode: 3 Minutes (Sleep Mode)



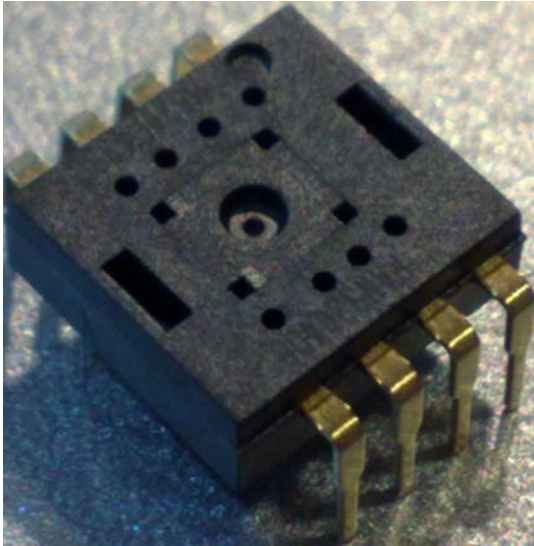
Function Block



2.4GHz Wireless Mouse solution (Pixelart PAW3204)

PixArt PAN3204

Optical Mouse sensor



The PAN3204DB is a high performance, low power and low cost CMOS process optical mouse sensor with DSP integration chip that serves as a non-mechanical motion estimation engine for implementing a computer wireless mouse.

Features

- Single power supply
- Precise optical motion estimation technology
- Complete 2-D motion sensor
- Accurate motion estimation over a wide range of surfaces
- High speed motion detection up to 28 inches/sec
- High resolution up to 1600 CPI
- Power saving mode during times of no movement
- Serial interface for programming and data transfer
- Built-in Low Power Timer (LPT) for sleep1/sleep2 mode
- MOTSWK pin to wake up mouse controller when sensor wakes up from sleep mode

2.4GHz Wireless Mouse solution (Pixelart PAW3204)

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

2.4GHz Wireless Mouse solution (Pixelart PAW3204)

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.

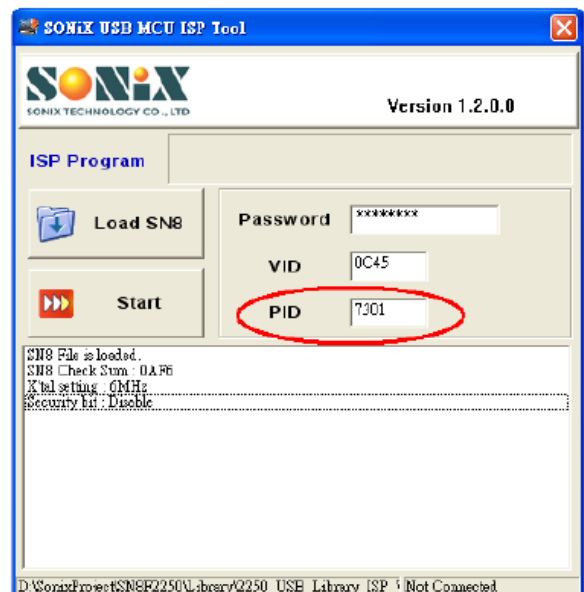
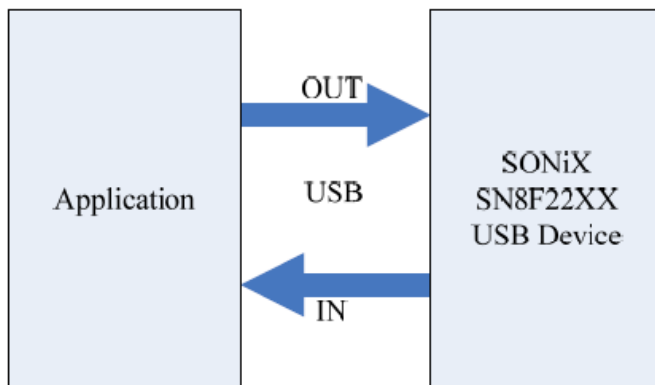
Integrated USB transceiver, Supports 1 low speed USB device address

1 control endpoint 2 interrupt IN/OUT endpoints, each has 8 bytes FIFO

- Two system clocks.

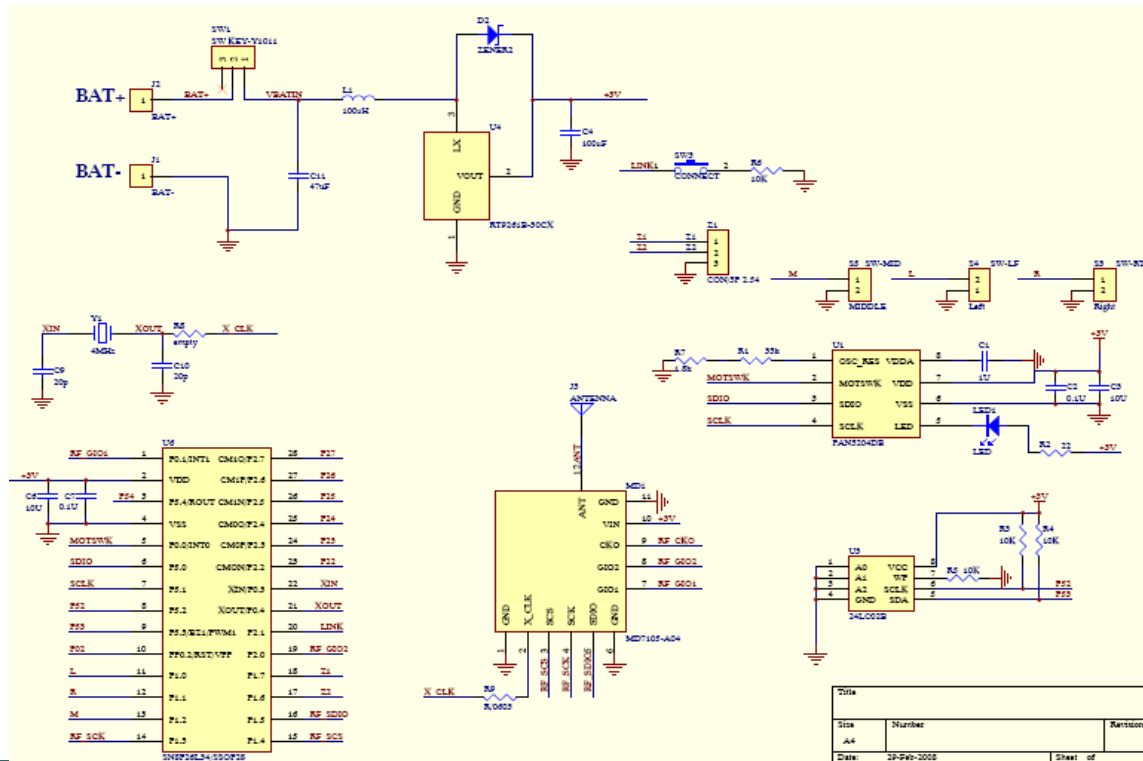
Internal low clock: RC type 12KHz which Fosc = 12KHz

A7105 Naro dongle

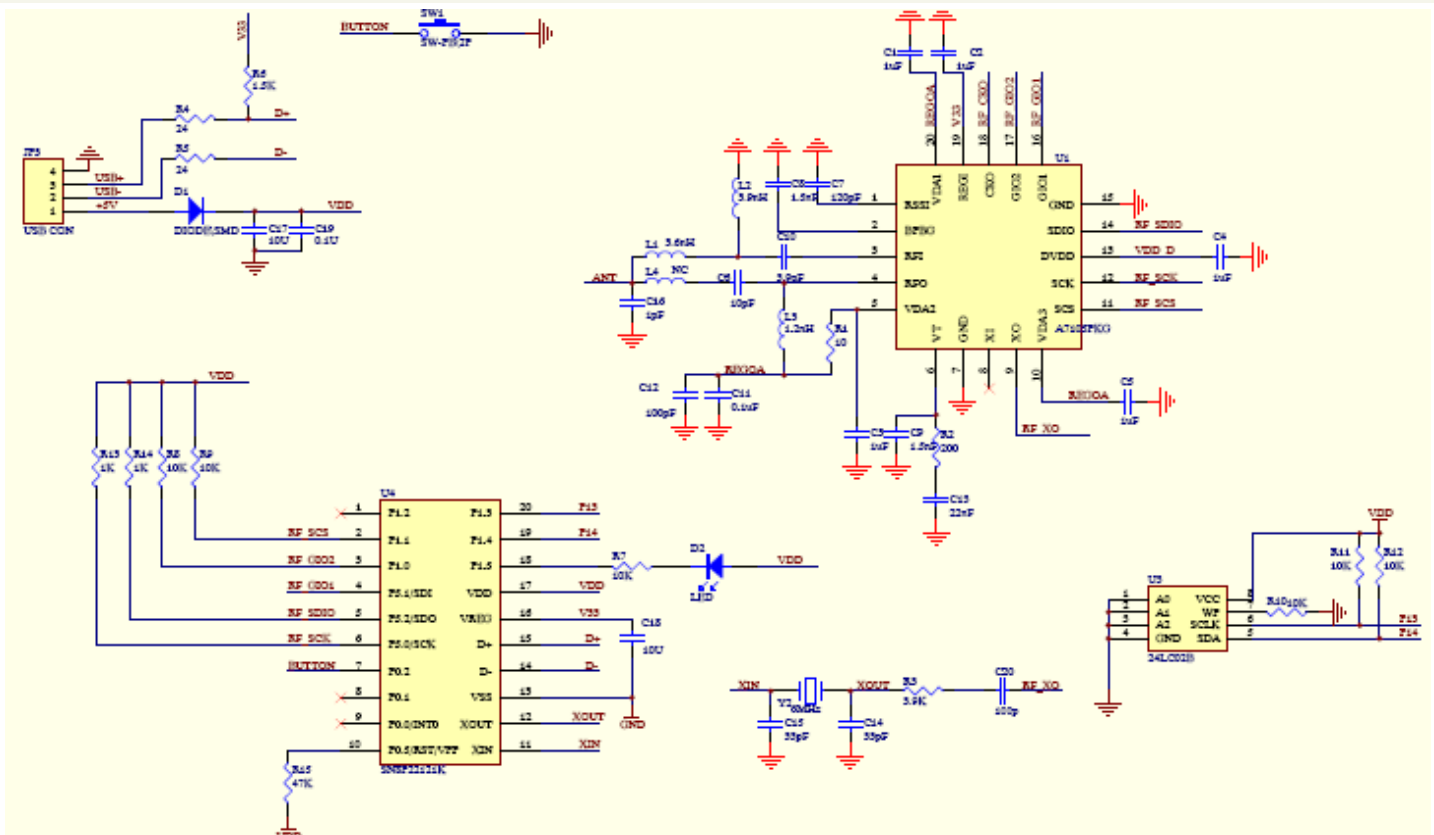


2.4GHz Wireless Mouse solution

TX Mouse schematic



RX USB Dongle schematic



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