



TP6829 –

2.4G RF Air mouse

Application Note

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discontinue this product without notice.**

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PRODUCT NAME

TP6829

TITLE

2.4G RF Air mouse

APPLICATION NOTE**Introduction**

The TP6829 wireless Air mouse is an Air rechargeable Mouse with USB recharger inside. It uses tenx motion sensing technology and can control the windows cursor in the air to free you from desk.

Applications

1. Mice
2. Remote Controls
3. Virtual Reality

Features

1. TP6829 USB Full Speed motion sensing Controller.
2. Desk-off Mice
3. 2.4G Wireless transceiver.
4. tenx Motion sensor technology.
5. USB Battery Charger.
6. LED Indicators.
7. Support "Motion IDLE" mode to save power
8. Joystick to support control mouse cursor move slowly.

Circuit design

TP6829 wireless Air mouse offers high performance and accurate sensor circuit.

1. Function Key Circuit

The TP6829 supports 12 function keys and Joystick(cross button). All function keys are connected to the MCU GPIO. The firmware will poll GPIO to get the key status.

2. PWM Output for LED Circuit

The LED indicators display the connection status. For example: frequency scanning, connection strength, link quality and low battery. The MCU controls LED to light or on/off through the PWM Duty cycle.

3. OSC Circuit

The Pin FX1/FX2 is connected to a 24 MHz crystal. In Fast mode, the circuit provides CPU clock and USB clock when TP6829 is plugged into a USB port. In Slow mode, the external RC, connected to the RCOSC pin, provides clock to the MCU. In addition, The TP6829 incorporates the wake up timer to trigger WUPINT per 0.5s. The wake up timer clock source comes from the 32.768 KHz crystal, which is connected to LX1 and LX2 pin.

4. Accelerometer Circuit (optional)

The three-axis accelerometer sensor is used to sense the momentum of hand motion so that the MCU can transform the momentum data through SPI bus from the accelerometer sensor. In addition, the decoupling capacitors (0.1uF and 10uF capacitors) in circuit can adequately decouple the accelerometer from the power supply noise.

5. RF module

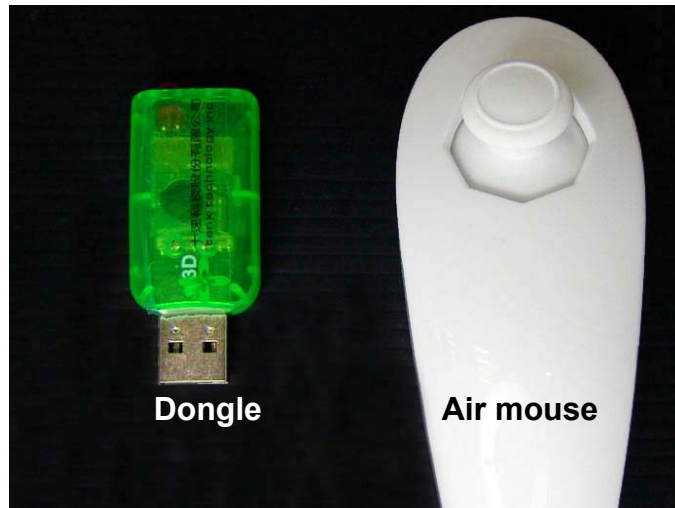
The RF module is a 2.4GHz RF transceiver. The TP6829 firmware can control the RF module to avoid other noise baseband. Two TP6829 Air mouse can be connected to one dongle at the same time, too.

6. Gyroscope Circuit

Power supply decoupling capacitors (100 nF and 10 μ F ceramic) should be placed as near as possible to the device (common design practice). The Gyroscope VDDA(pin 16) and VDDD(pin 15) lines should be kept separated to avoid switching noise coupling on the analog side.

Demo Board

USB Dongle and Wireless Air mouse

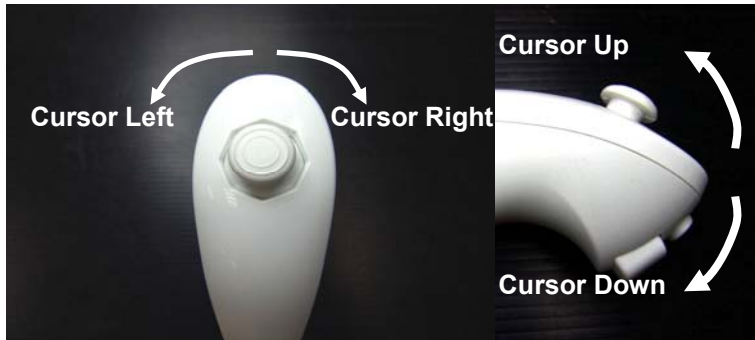


Air mouse and Dongle



USB and LED window

Air mouse



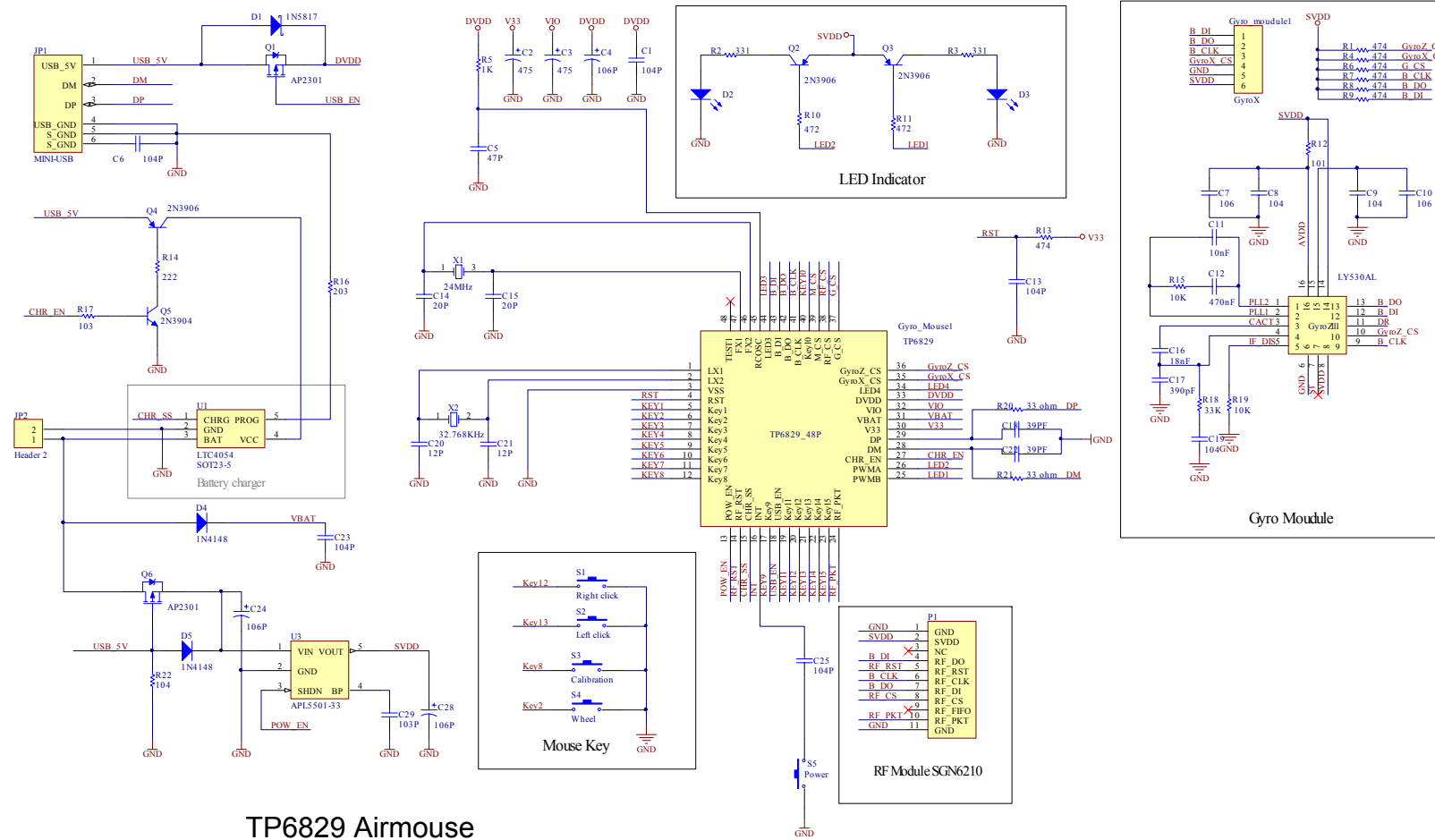
Motion control Mouse



Joystick



Application Circuit



TP6829 Airmouse