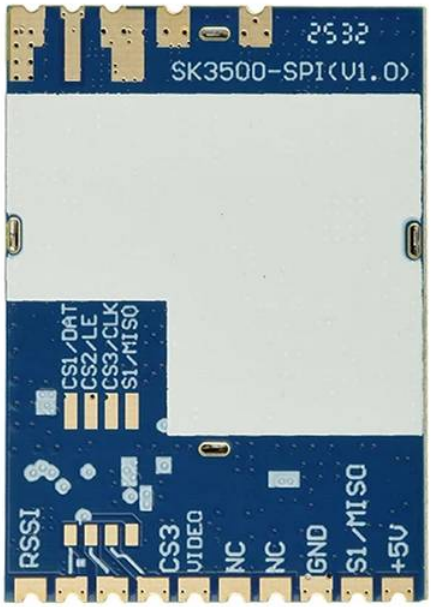
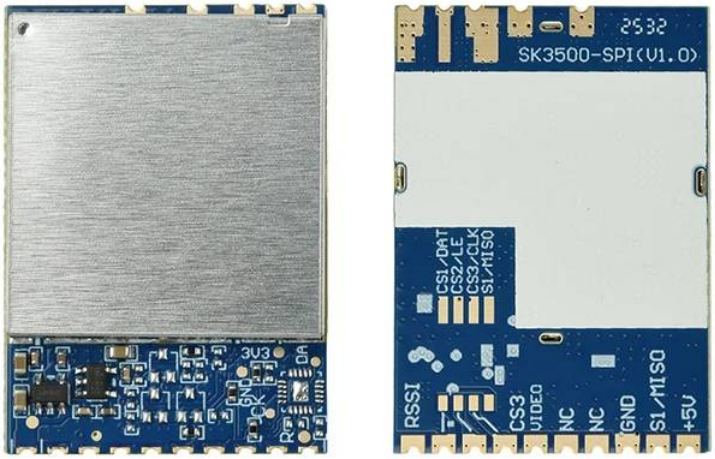
Features: 1. Supports 3.3G frequency band reception, covering a wide frequency range of 3100-3800MHz. 2. Low latency CVBS video output, suitable for real-time image transmission of FPV drones. 3. The receiving sensitivity reaches -95dBm, with strong anti-interference ability and stable signal. 4. The video signal-to-noise ratio is ≥ 38dB, with clear image quality and high transmission fidelity. 5. Small in size, easy to integrate and install. Product Introduction SK3500-SPI is a CVBS signal module that supports output, with features such as low latency and strong anti-interference ability. It is widely used in FPV drone flight, outdoor entertainment, racing competitions, and professional aerial photography, allowing developers to expand and customize functions based on the existing SPI protocol. General specifications: DC characteristics Supply voltage: DC 5.0V Current consumption: 420mA ± 30mA @ 5V working environment Working temperature: -10~+65 º C Storage temperature: -30~+85 º C Working humidity: 85% RH Radio Frequency (RF) Receiving frequency range: 3100~3800 MHz Demodulation method: FM/PLL Intermediate frequency IF: 480MHz Antenna port impedance: 50 Ω, Typ Stability of local oscillator frequency: ± 200kHz Local oscillator frequency accuracy: ± 200kHz Local oscillator control: PLL Input local oscillator leakage: -65dBm Receiver sensitivity: -95dBm ± 3dBm Video Characteristics Video output impedance: 75 Ω, Typ Video output level: 1 ± 0.2Vp-p, Typ Video polarity: Negative Video frequency response: ± 5 dB, Max. 50Hz~6MHz Differential gain: ± 5%, Max Differential phase: ± 5 Deg., Max 3dB intermediate frequency bandwidth: 16.5MHz Signal to Noise Ratio (S/N): 38dB, Min RSSI slope: 22mv/dBm Dimensions: 37mm (L) * 26.3mm (W) * 4.5mm (H) Package Include: Module * 1

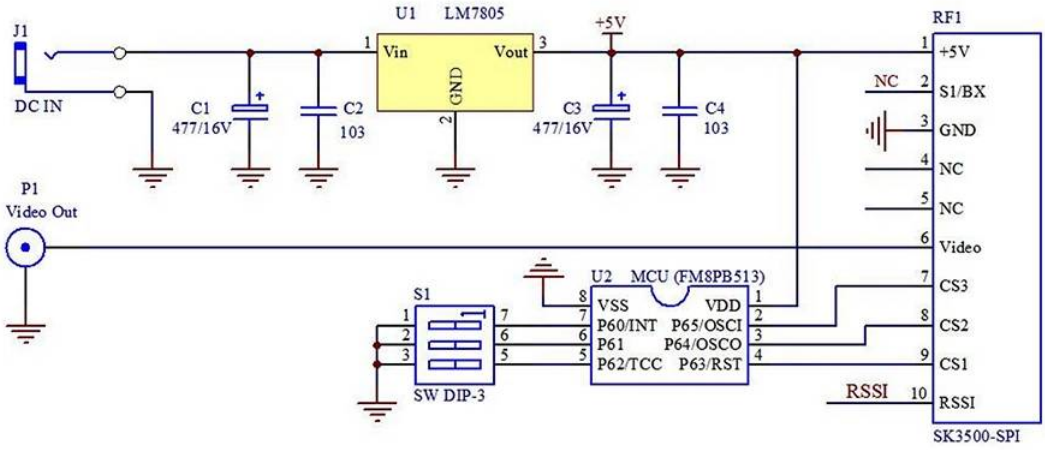
# SK3500-SPI 3.3G

Supports 3.3G band reception, covering a wide frequency range of 3100~3800MHz

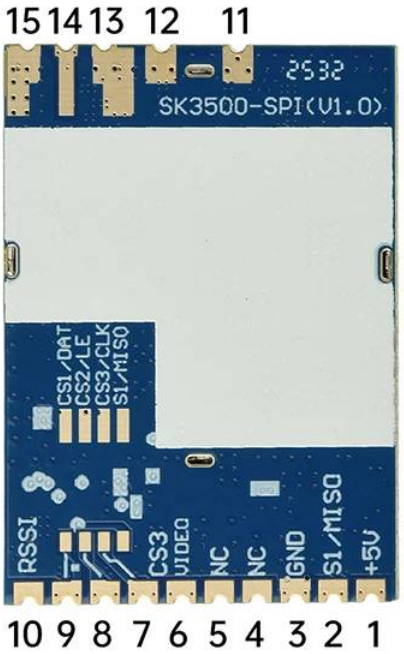


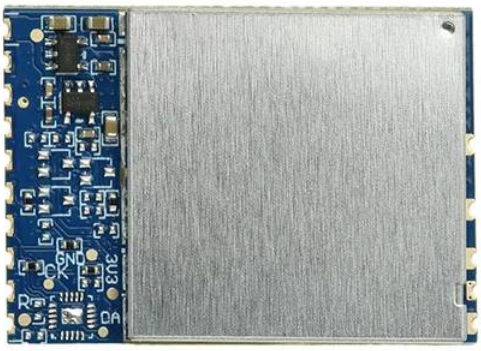

## 3) Application Circuit



## 2) Pin Function

| Pin NO. | （Function Description） |
|---|---|
| 1 | DCIN：+5V |
| 2 | S1: MISO |
| 3 | GND |
| 4 | NC |
| 5 | NC |
| 6 | Video Out |
| 7 | SPI Mode Frequency Control CLK |
| 8 | SPI Mode Frequency Control LE |
| 9 | SPI Mode Frequency Control DATA |
| 10 | RF Signal Strength Indicator (RSSI) |
| 11 | GND |
| 12 | GND |
| 13 | GND |
| 14 | 3.3G antenna input |
| 15 | GND |

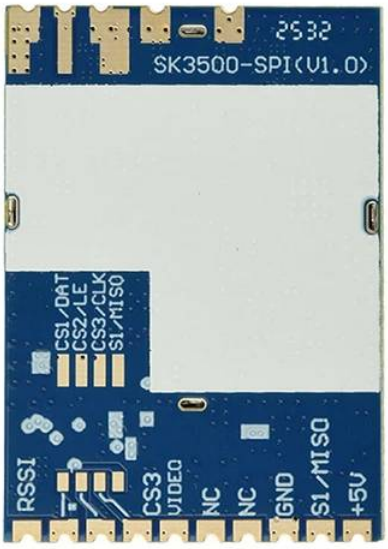





## 4) RSSI Output Voltage Reference Values

Using the E4421B signal generator as the module's signal input source, the RSSI output voltages at the following frequencies are for reference only.

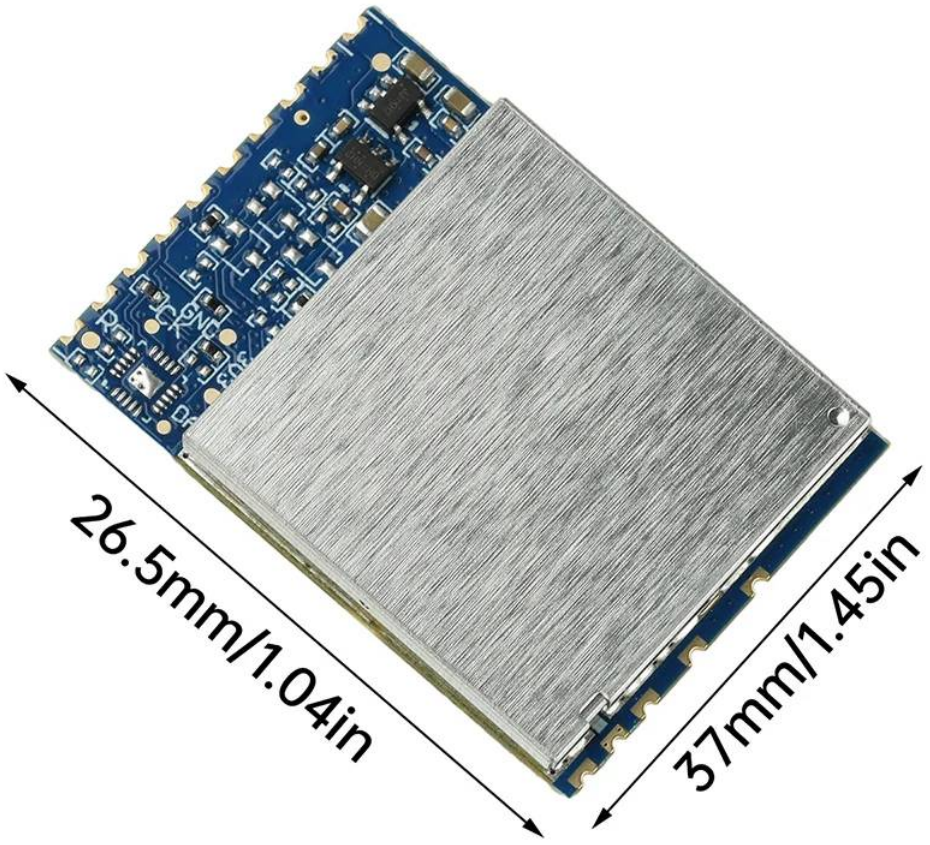
| Frequency | Signal Strength | RSSI Output Voltage | Frequency | Signal Strength | RSSI Output Voltage | Frequency | Signal Strength | RSSI Output Voltage |
|---|---|---|---|---|---|---|---|---|
| 3170 | -136dBm | 0.66V | 3290 | -136dBm | 0.7V | 3470 | -136dBm | 0.87V |
| | -95dBm | 0.81V | | -95dBm | 0.88V | | -95dBm | 1.09V |
| | -90dBm | 1.01V | | -90dBm | 1.09V | | -90dBm | 1.33V |
| | -85dBm | 1.28V | | -85dBm | 1.37V | | -85dBm | 1.62V |
| | -80dBm | 1.56V | | -80dBm | 1.64V | | -80dBm | 1.89V |
| | -75dBm | 1.84V | | -75dBm | 1.92V | | -75dBm | 2.17V |
| | -70dBm | 2.11V | | -70dBm | 2.20V | | -70dBm | 2.45V |
| | -65dBm | 2.40V | | -65dBm | 2.50V | | -65dBm | 2.67V |
| | -60dBm | 2.68V | | -60dBm | 2.66V | | -60dBm | 2.73V |
| | -55dBm | 2.81V | | -55dBm | 2.76V | | -55dBm | 2.78V |
| | -50dBm | 2.81V | | -50dBm | 2.76V | | -50dBm | 2.78V |
| | -45dBm | 2.83V | | -45dBm | 2.78V | | -45dBm | 2.80V |
| | -40dBm | 2.83V | | -40dBm | 2.78V | | -40dBm | 2.80V |

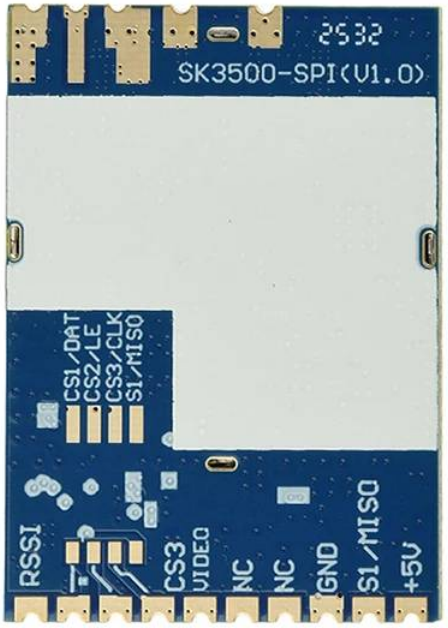

| | |
|---|---|
| （Video Polarity） | （Negative） |
| （Video Frequency Response） | ±5 dB, Max. 50Hz ~ 6MHz |
| （Differential Gain） | ±5 %, Max |
| （Differential Phase） | ±5 Deg., Max |
| （3dB IF WIDEBAND） | 16.5MHz |
| S/N | 38dB, Min |
| RSSI slope | 22mv/dBm |
| (Dimension ) | 37mm(L)*26.3mm(W)*4.5mm(H) |

**1)、（General Specifications）**

| | |
|---|---|
| （DC Characteristics） | |
| (POWER SUPPLY) | DC 5.0V |
| (Current Consumption) | 420mA ±30mA @5V |
| （Environmental Specification） | |
| （Operating Temperature） | -10~+65 ºC |
| （Storing Temperature） | -30~+85 ºC |
| （Operating humidity） | 85%RH |
| **( RF )** | |
| （Receiving frequency range） | 3100~3800MHz |
| （Demodulation system） | FM/PLL |
| IF | 480MHz |
| （ANT. input impedance） | 50Ω, Typ. |
| (LO Frequency stabilization) | ±200kHz |
| (LO Frequency Precision) | ±200kHz |
| （LO Control） | PLL |
| (Input LO Leak) | -65dBm |
| （Receiving Sensitivity） | -95dBm±3dBm |
| (Video Characteristics) | |
| （Video Output impedance） | 75Ω, Typ. |
| （Video Output Level） | 1±0.2Vp-p, Typ. |


26.5mm/1.04in
37mm/1.45in


3V3
GND
CLK
DA


2532
SK3500-SPI(V1.0)
CS1/DAT
CS2/LE
CS3/CLK
S1/MISO
RSSI
CS3
VIDEO
NC
NC
GND
S1/MISO
+5V