## 1 Features

- Resolution: 3840x2160 (4K)
- Frame rate: 60fps
- Optical format: 1/1.2"
- Gain: 0~72dB
- Video interface: Dual coaxial (MMCX)
- Power supply and button interface: A1251WR-S-3P
- Panel button interface: 2Keys
- 2D mode image delay: ≤60ms
- 3D mode image delay: ≤80ms
- Structure: 33.5mm x 21mm x 6.5mm

## 2 Overview

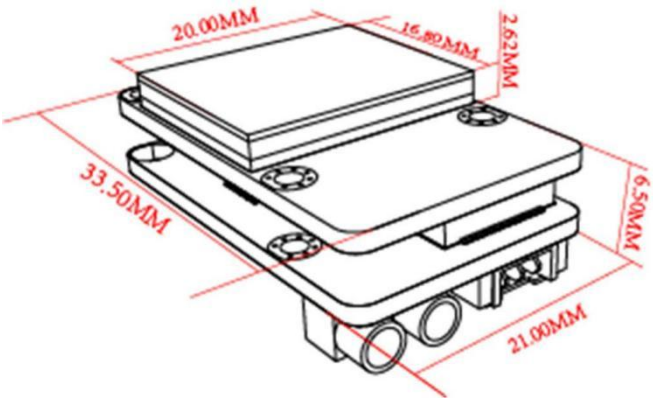
The QS81T is a compact ultra-HD camera module with a 21mm-wide dual-layer stacked plate structure. It features SONY's ultra-low-light STARVIS21/1.2" large-area photosensitive sensor, delivering exceptional imaging performance.

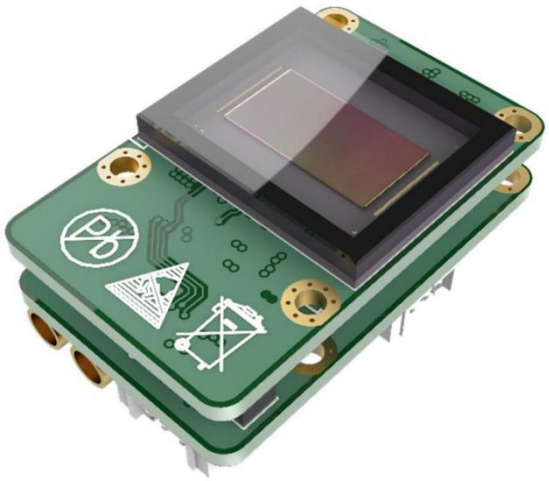
When used side by side, this module fully meets the imaging requirements for 3D microscopy with binocular viewing at approximately 22mm distance, eliminating the need to install two distinct structural modules separately to form a 3D imaging system. This design simplifies and optimizes the 3D binocular structure, while also reducing the complexity of inventory management, storage, and product maintenance.

## 3 Main Application Scenarios

Operating microscope

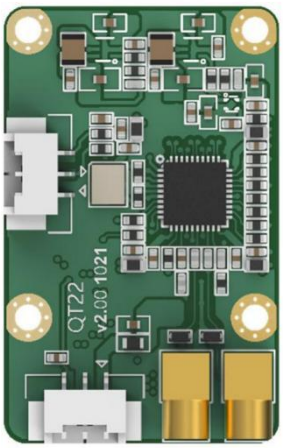
Industrial microscope



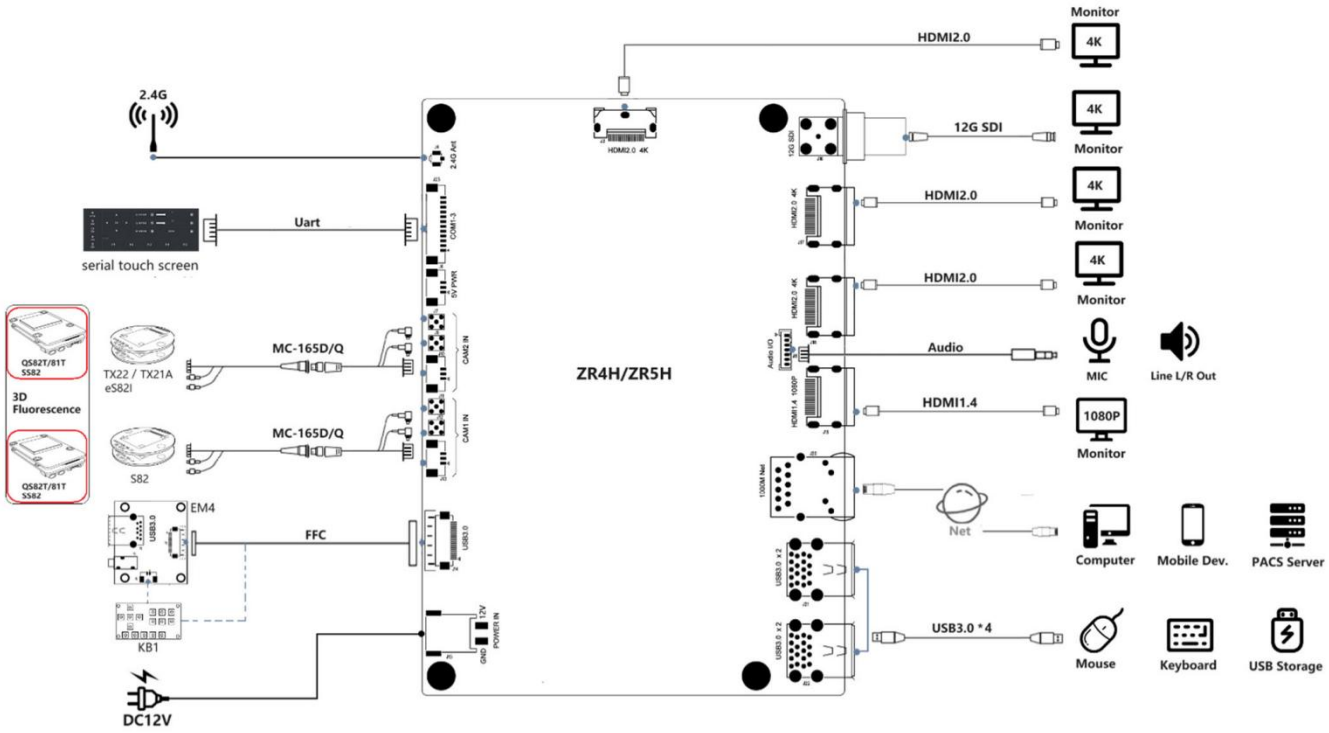
QS81T 透视图

QS81T Top View

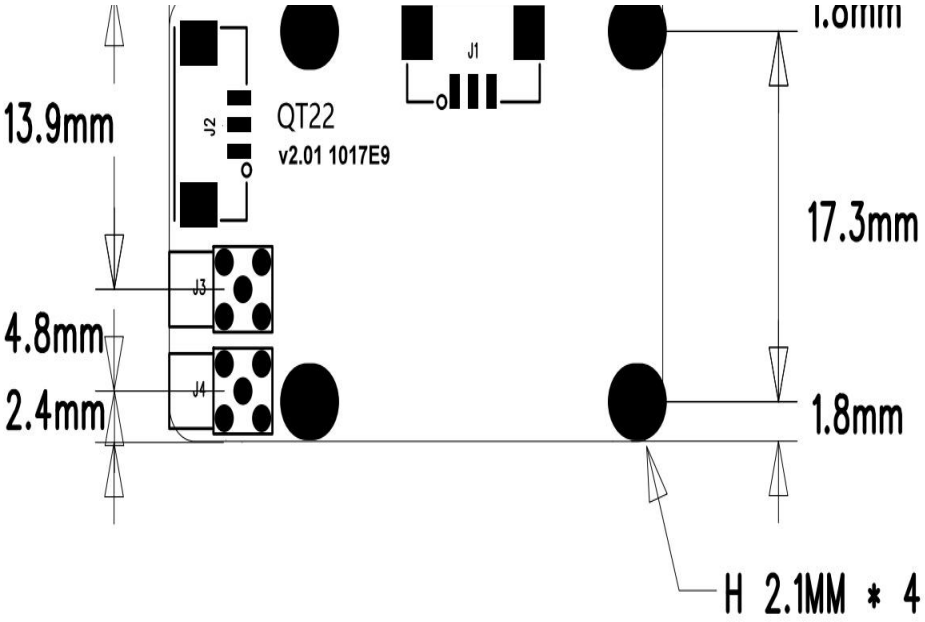



QS81T Bottom View

## 4 Application Block Diagram




## 5 Interface Definition



*Note: The "△" indicates the first pin (Pin1).*

| name | item | Pin definition | direction for use |
|---|---|---|---|
| power input | J2 | 3pin 1.25mm wafer：A1251WR-S-3P<br>Pin1：+5V<br>Pin2：GND<br>Pin3：ADC IN | Connect to the corresponding motherboard interface |
| video monitor 525 vidicon video out | J3<br>J4 | RF Coaxial Connector：MMCX<br>J3：CH1<br>J4：CH0 | Connect to the corresponding video input interface on the motherboard |
| Key Extension | J1 | 3pin 1.25mm wafer：A1251WR-S-3P<br>Pin1：GND<br>Pin2：Key0<br>Pin3：Key1 | |

## 6 Electrical Specifications

### 1) Work environment

| parameter | minimum | typical case | maximum | explain |
|---|---|---|---|---|
| input voltage （V） | **4.75** | **5** | **5.5** | |
| **operating power （W)** | | | 0.9 | |
| ambient temperature （℃） | 5 | 25 | 45 | |
| humidity （%rh） | 5 | 55 | 85 | |
| atmos （kPa） | 50 | 101 | 106 | |

**7 Relevant components: QS82T, QS81_Bx, MLS0xx, ZR5H**