

1 Features

- Resolution: 3840x2160 (4K)
- Frame rate: 60fps
- Optical format: 1/1.8"
- Gain: 0~72dB
- Video interface: 30-pin FH41-30S FPC connector
- Power and button interface: 30-pin FH41-30S FPC connector
- 2D mode image delay: $\leq 60\text{ms}$
- 3D mode image delay: $\leq 80\text{ms}$
- Structure: 33.5mm x 21mm x 6.5mm

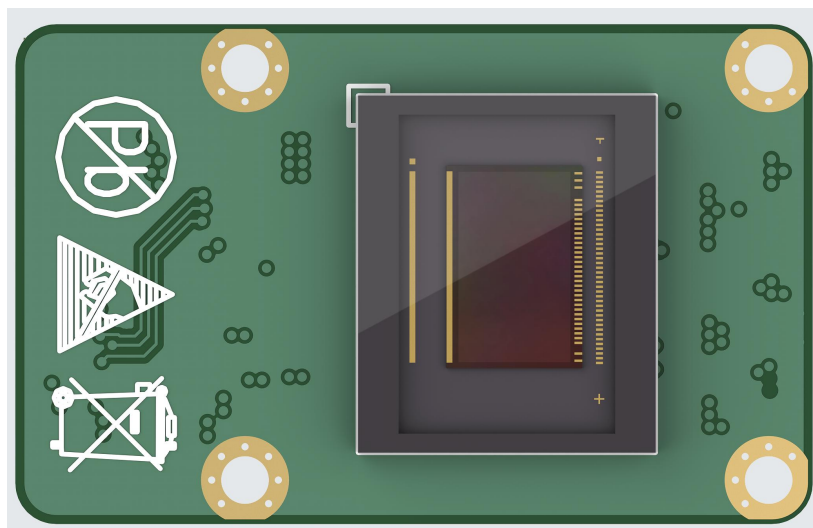
2 Overview

The QS82 is a compact ultra-HD camera module featuring a 21mm-wide single-board design. It incorporates SONY's ultra-low-light STARVIS2 sensor with a 1/1.8" large sensor area, delivering exceptional imaging performance.

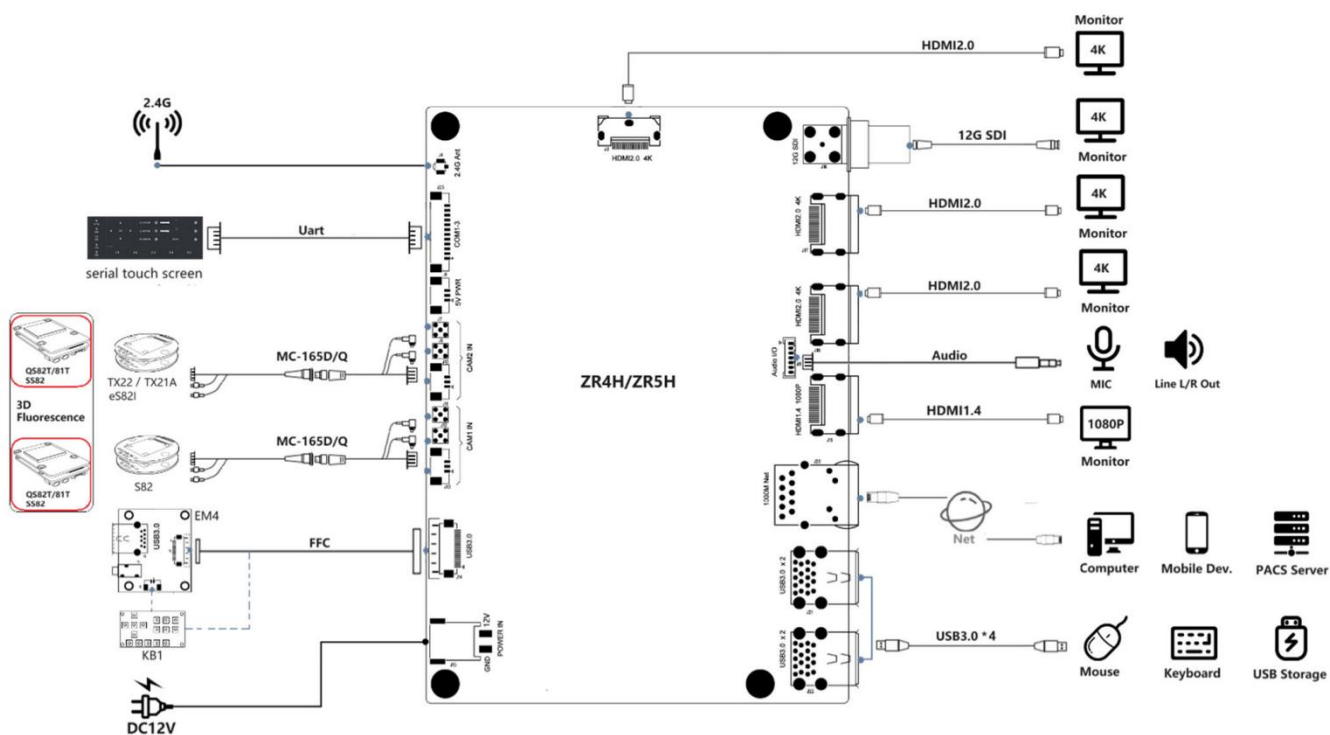
When used in tandem, this module fully satisfies the imaging requirements for 3D microscopy with binocular viewing at approximately 22mm lateral spacing. This eliminates the need for separate installation of two distinct structural modules to form a 3D imaging system, resulting in a more compact and simplified 3D binocular design. Furthermore, it reduces the complexity of inventory management, storage, and product maintenance.

3 Main Application Scenarios

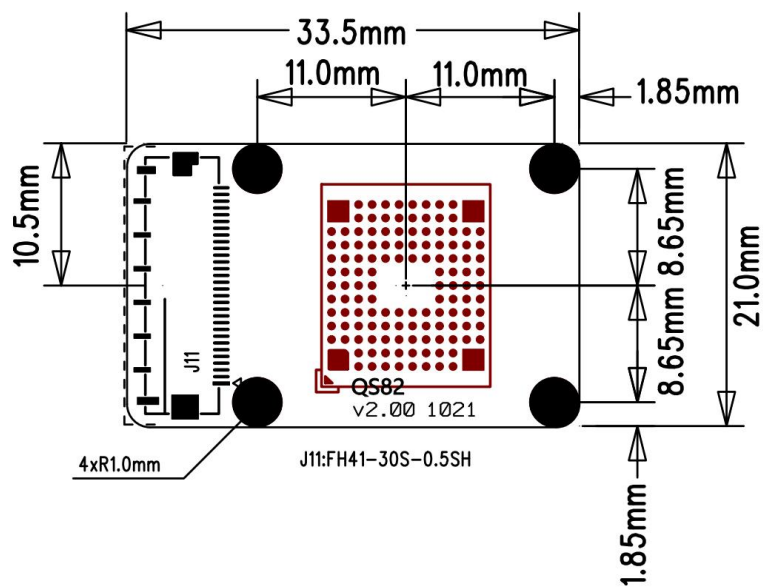
Operating microscope



4 Application Block Diagram



5 Interface Definition



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

Note: The "^Δ" indicates the first pin (Pin1).

name	item	Pin definition	direction for use
Power and video input/output	J11	30pin 0.5mm wafer: FH41-30S Pin1: 3V6 Pin2: 3V6 Pin3: GND Pin4: SARADC_CH0 Pin5: SPI3_CSN Pin6: SPI3_SDI Pin7: SPI3_SDO Pin8: SPI3_SCLK Pin9: I2C3_SDA Pin10: I2C3_SCL Pin11: SENSOR1_RSTN Pin12: GND Pin13: SENSOR1_VS Pin14: SENSOR1_HS Pin15: SENSOR1_CLK Pin16: GND Pin17: MIPI_RX1_CK1N Pin18: MIPI_RX1_CK1P Pin19: MIPI_RX1_D2N Pin20: MIPI_RX1_D2P Pin21: MIPI_RX1_D0N Pin22: MIPI_RX1_D0P Pin23: GND Pin24: MIPI_RX1_CK0N Pin25: MIPI_RX1_CK0P Pin26: MIPI_RX1_D1P Pin27: MIPI_RX1_D1P Pin28: MIPI_RX1_D3N Pin29: MIPI_RX1_D3P Pin30: GND	Connect to the corresponding motherboard interface

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 (°C)	5	25	45	
humidity (%rh)	5	55	85	
atmos (kPa)	50	101	106	

7 Relevant components: MLS0xx, ZM4B, ZM4 V2.10