CAM-TVI-HDR

Low-Latency 1080p60 HDR HD-TVI FPV Camera

User Manual

rev: 260318
Made in Taiwan

INTRODUCTION

CAM-TVI-HDR is a mini low-latency FPV HDR camera featuring an HD-TVI analog HD output for high-standard FPV links. With the higher bandwidth of TVI, it delivers 1080p at 60 fps while keeping the latency extremely low, making it ideal for demanding FPV applications on drones and other unmanned platforms, including both traditional analog workflows and digital FPV systems that accept TVI input. Built on a 1/3-inch, 2MP Sony IMX462 STARVIS sensor with multi-exposure and DOL HDR, it reacts quickly to rapid lighting changes and preserves detail in high-contrast scenes such as shadow-to-sun transitions and strong backlight, helping pilots maintain a clear real-time view and confident control.

FEATURES

FPV Camera

- Active Image: 1920x1080@120fps
- Sensor Type: CMOS 1/3"
- Scale: 4:3/16: 9 Switchable
- Video Out: TVI-2M60
- FOV: FOV-D(148°), FOV-H(123°), FOV-V(100°)
- White Balance: Auto
- Day / Night: EXT/ Auto/ Color/ B&W
- Power Requirement: DC 3.5V～16V(Typical:3.5V-3.6V)
- Consumption: TBD
- Weight: TBD
- Dimensions(mm): TBD

CMOS Sensor: IMX462LQR-C

- High-Sensitivity CMOS Image Sensor (STARVIS Technology)
  - Sony STARVIS back-illuminated CMOS sensor for excellent low-light performance
  - Approx. 2.07 megapixels, 1920 (H) × 1080 (V) active pixels
- Flexible Image Readout Modes
  - Full-pixel scan (Full HD)
  - 720p HD readout mode
  - Window cropping mode
  - Horizontal and vertical image inversion
- High-Speed Image Capture
  - Maximum frame rate: 120 fps at 1080p Full HD
  - Supports 74.25 MHz / 37.125 MHz input clock frequencies
- High Dynamic Range (HDR) Capability
  - Multiple-exposure HDR
  - Digital Overlap (DOL) HDR
  - Ideal for high-contrast or backlit environments
- Advanced Exposure and Gain Control
  - Variable-speed electronic shutter (resolution: 1H units)
  - 10-bit / 12-bit A/D conversion
  - Dual conversion gain: High Conversion Gain (HCG) / Low Conversion Gain (LCG)
  - Low-noise CDS / PGA circuitry
  - Wide gain range:
    - 0 to 29.4 dB analog gain (0.3 dB steps)

    - 29.7 to 71.4 dB combined analog + digital gain (0.3 dB steps)
- Multiple Output Interfaces
  - CMOS logic parallel SDR output
  - Low-voltage LVDS serial DDR output (configurable 2-channel / 4-channel / 8-channel)
  - MIPI CSI-2 output (2-lane / 4-lane, RAW10 / RAW12)
- High Optical Compatibility
  - Recommended exit pupil distance: –30 mm to –∞
    - Compatible with a wide range of lenses including wide-angle, telecentric, and high-CRA optical designs
- Integrated System Control
  - Built-in timing control circuits
  - Integrated H/V drivers
  - Built-in serial communication interface
    - Reduces system design complexity for end users