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FE CAMERA MODULE

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PRODUCTION SPECIFICATION

Model No. : HN3820B15-C2-ZT0

Fangtec Corporation

Revision History

Date	Rev.	Contents
2024/07/01	V0.0	Preliminary

Table of Contents

1. Preface

This documentation describes product specifications to ensure the design meets customer requirements.

HN3820B15-C2-ZT0 is a USB Video Class (UVC) compliant camera module with video features designed for surveillance devices and car rear-view image applications. It consists of the following components: CMOS sensor (NT99235), lens, holder, backend, PCB, image processing circuit, and connector, to create a digital video device. It is designed to be a reliable component embedded in surveillance systems, transferring video data through a USB interface to the surveillance system.

HN3820B15-C2-ZT0 provides programmable fisheye lens distortion compensation and HDR, meeting the application needs of various outdoor fields.

The HDR scheme used is multi-exposure HDR, allowing the sensor to handle up to 100 dB of dynamic range. In HDR mode, the sensor sequentially captures two exposures by maintaining two separate read and reset pointers that are interleaved within the rolling shutter readout.

HN3820B15-C2-ZT0 not only offers up to Full HD resolution (1920x1080) for image applications to capture still images but also provides a video stream for end-users to preview/record motion images through a USB 2.0 interface. It can support VGA (300K, 640x480) resolution up to 30 fps in YUY2 mode and 1080P resolution (1920x1080) up to 30 fps in MJPG mode.

HN3820B15-C2-ZT0 includes AE, AWB, and AGC for automatic image control, supported by a CMOS sensor. For image quality control, it also offers a UVC-standardized User Interface (UI) that allows end-users to finely tune images through the property page.

2. Features

- Compliant with USB 2.0 and USB 1.1 Video Class
- Still image resolution: 2.1 megapixels (1920x1080)
- Window image statistics collection for AE and AWB
- Provides programmable fisheye lens distortion compensation
- Superior low-light performance
- High dynamic range capture
- Supports 3D noise reduction
- Supports ePTZ (pan-tilt-zoom)
- Supports physical de-fogging

3. Applications

- Outdoor
- Low Lights
- Surveillance
- Face recognition
- Intercom
- Digital Signage
- Kiosk
- Robot
- Vehicle

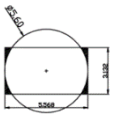
4. Key Specification

Module Specification		
Size(LWH/mm)		50.0 x 38.0 x 15.7±0.2 mm (include PCB Thickness)
PCB Thickness		1.2 mm
Output Interface		USB 2.0
Image/Video Format		YUY2 & MJPG & H.264
Output size	VGA	640x480
	HD	1280x720
	FHD	1920x1080
Video Class Compliant		YES
Operating Temperature		-30℃ to +70℃
Power Consumption		
Input Voltage		5VDC (4.85~5.25V)
Operating Current (Max.)		300mA (MJPG 1080P)

	Max Frame Rates (fps)		
	640×480	1280×720	1920×1080
YUY2	30	12	N/A
MJPG	30	30	30
H.264	30	30	30

Backend IC Specification	
Type	Backend IC with USB2.0 interface
Compatibility	USB Video class Compliant, Microsoft WHQL Certified
Support Sensor Size	Support to 2M(1920x1080) sensor
OS Supported	Window11, Linux, Android

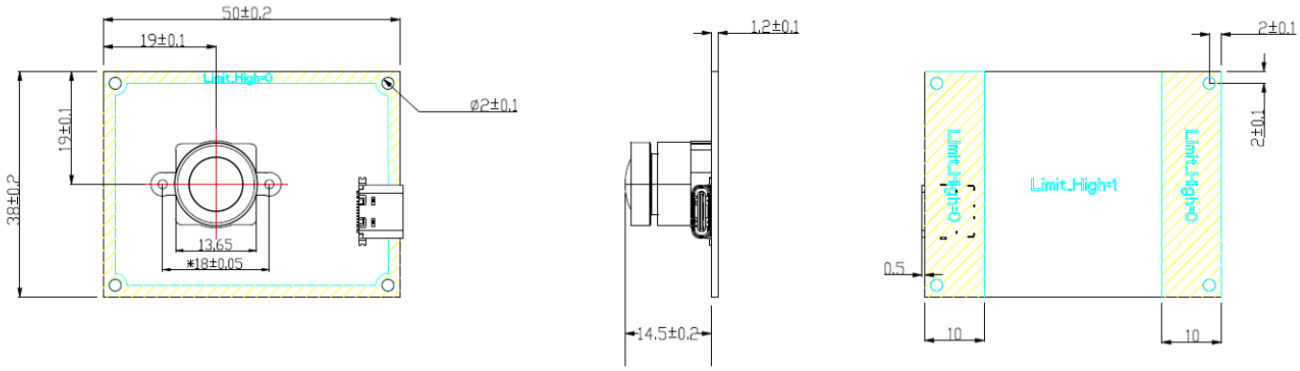
Sensor Specification	
Optical format	1/2.8-inch Full HD CMOS Sensor
Active resolution	1920H×1080V
Unit pixel size	2.9μm x 2.9μm
UV Coating	Term 1 year

Lens Specification	
F/No.	2.4 ± 5%
Field of View	183° (Diagonal) 181° (Horizontal) 93° (Vertical) 
Focus Distance	50cm
Construction	6Glass + IR650

5. Pin Description

Pin Description			
Pin Number	**Name**	**Pin Type**	**Function Description**
1	VCC	Power	USB Power Supply 5V
2	D-	Data Pin	USB Data Transmission
3	D+	Data Pin	USB Data Transmission
4	ID	ID	ID
5	GND	GND	System Ground
6	GND	GND	System Ground
7	GND	GND	System Ground
8	GND	GND	System Ground
9	GND	GND	System Ground

6. Outline Specification



7. Connector Specification

TYPE-C (USB2.0)

8. Firmware adjustable function list example :

Brightness 亮度
Contrast 對比
Hue 色調
Saturation 飽和度
Sharpness 清晰度
Gamma 色差補正
AWB 白平衡
Backlight Compensate 背光補正
Gain 增益