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MCY-2688 4K USB 2.0 Camera Module Datasheet

We are dedicated to developing sensing technology, and providing customers with an innovative and diverse range products.

With the state-of-the-art algorithm technology, there are many brand products with our advanced image technology in the market.

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Revision History

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1. Preface

This documentation describes product specifications to ensure design to meet customer's requirements.

MCY-2688 is an USB Video Class (UVC) and USB Audio Class (UAC) compliant camera module with video and audio feature, designed for PC image applications. It is made up of the following components, CMOS sensor, lens, holder, backend, PCB, image processing circuit, connector and microphone, to come out a digital video and audio device. It shall be a reliable device to transfer video and audio data through USB interface to PC.

MCY-2688 not only offers up to 4K resolution (3840X2160) for image applications to take still image, but also offers video stream for end user to preview/record motion image through USB 2.0 interface. And It can support VGA (640x480) resolution up to 30 fps at YUY2 mode, 4K resolution up to 30fps at MJPG mode. It also provides stereo audio input by two microphones.

MCY-2688 builds in AE, AWB and AGC for automatic image control supported by CMOS sensor. For image quality control, it also offers UVC standardized User Interface (UI) to let end user well tune image by property page.



2. Features

- Compliant to USB2.0 and USB Video Class 1.1 standard, USB Audio Class 1.0 standard
- Support still image capture and video streaming
- Automatic image control
 - ◆ Automatic Exposure Control (AEC)
 - ◆ Automatic White Balance (AWB)
 - ◆ Automatic Gain Control (AGC)
- Brightness/Contrast adjustment
- Hue/Saturation adjustment
- Support 3840 x2160 frame rate up to 30fps @MJPG
- Support for still image resolution: 3840(H) x 2160(V)
- Audio input : 2× Microphone (Analog Microphone)
- LED indicated (blue)
- Input Voltage: DC 5V
- USB Connector: Type C

3. Applications

- Conference call Cameras
- Surveillance Cameras
- FA Cameras
- Industrial Cameras



4. Key Specification

Module Specification			
Size (L*W*H/mm)	100.0 x 22.0 x 34.8 mm (include type C connector)		
PCB Thickness	1.2 mm		
Output Interface	USB 2.0		
Image/Video Format	YUY2 & MJPG		
Output size	3840x2160		
	2592x1944		
	1920x1080		
	1280x960		
	1280x720		
	960x540		
	848x480		
	800x600		
	640x480		
	640x360		
	320x240		
Video Class Compliant	YES		
Device Name	MCY-2688		
PID	TBD		
VID	0x1BCF		
Operating Temperature	0℃ to +70℃		
Storage Temperature	-40℃ to +100℃		
Power Consumption			
	Min	Type	Max
Input Supply Voltage	4.75	5.0V DC	5.25
Un-configured Current	—	35 mA	—
Operating Current	—	—	260 mA



Max Frame Rates (fps)						
	320×240	640×480	1280×720	1920×1080	2592×1944	3840×2160
YUY2	30	30	10	5	1	1
MJPEG	30	30	30	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 Most popular CMOS sensors
OS Supported	Windows, Mac, Thin-client

Sensor Specification	
Optical format	1/2.8-inch 8.46M CMOS Sensor
Active resolution	3840H×2160V
Unit pixel size	1.45μm x 1.45μm

Lens Specification	
F/No.	2.7 ± 5%
Field of View	88.2° (Diagonal)
TV Distortion	< -0.12%
Construction	4 Glass + 2 Plastic
IR Filter	T _{avg} ≥ 93% @460~635nm

5. Digital Microphone Specification

Item	Test Conditions	Min	Standard	Max	Unit
Directivity		Omni-directional			
Sensitivity	94dB SPL @ 1KHz	-23	-22	-21	dB FS
Current Consumption			800		μA
S/N Ratio	f=1kHz, Pin=1Pa		61		dB
Max. Input Signal				120	dB SPL
THD+Noise	@100dB SPL, f _{in} =1KHz			1	%

(T_A =+15°C ~+25°C, V_{DD} = +1.8V, f_{clock} = 3.072MHz, R.H. = 60%~70%, no load, unless otherwise noted.)



6. Outline Specification

