



Datasheet

IMX291 USB Camera Module B0520

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1. Purpose

In order to fully describe the technical specifications referred to in technical cooperation, it usually needs to be expressed by a complete set of documents. As part of this, this datasheet specifies the specific technical specifications that a camera module should meet and is binding on this model.

2. Efficacity

This datasheet shall prevail if it's inconsistent with the specifications in the general technical specifications of such goods.

3. Technical Parameters

Image Sensor			
Resolution	2MP		
Chroma	Color		
Shutter Type	Rolling shutter		
Optical Format	1/2.8"		
Output Format	MJPG/YUY2/H.264		
Pixel Size	2.9 μm x2.9 μm		
Sensor Active Area	1937(H)×1097(V)		
Frame rate	MJPG: 30fps@1920×1080, 1280×720, 800×600, 640×480, 320×240; YUY2: 30fps@640×480, 320×240; 10fps@1280×720,800×600; 5fps@1920×1080; H.264: 30fps@1920×1080, 1280×720, 800×600, 640×480, 320×240		
	Lens		
Focus Type	Manual Focus		
FOV	95°(D)×82°(H)×66°(V)		
Lens Mount	M12 Lens		
F.NO	F2.5		
Focal Length	3.7 mm		
TV Distortion	< -13%		
IR Sensitivity	Integral IR-cut filter, visible light only		
Default Focus Range	1m- ∞		
USB Interface			
Interface	USB 2.0 Device		
Connector USB Type-C/USB A			
UVC Compliant	No additional drivers required		
Electrical and Mechanical			
Operating Voltage	DC 5V +/- 5%		

Operating Temp.	32°F-158°F (0°C to 70°C)	
Power Requirements	Max: 1.1W	
Camera Board Size	19.5×15×17.3 mm	
Functionality and Compatibility		
Supported OS	Windows, Linux, Android and Mac OS	
Recommend Sample Application	Amcap for Windows	
UVC Controls	Brightness, Hue, Contrast, Saturation, Sharpness, Gamma, White Balance (Auto/Manual), Gain, Backlight Comp, Exposure (Manual/Auto)	

4. Dimension Diagrams

Unit: mm



5. Imaging

+colorchecker classic	
talibrite	Instantivitorilautauluutuuluutuul

6. Camera Parameters Interface

- Video Proc Amp

- Camera Control

Properties	× Properties	Х
Video Proc Amp Camera Control	Video Proc Amp Camera Control	_
Brightness	Auto Zoom Focus Focus Exposure Aperture Aperture Pan Tilt Roll Low Light Compensation	
DefaultOK Cancel	Apply OK Cancel Apply	

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- Video Capture Pin

Properties	perties × Properties			
Stream Format		Stream Format		
Video Format	Compression	Video Format	Compression	
Video Standard: None		Video Standard: None		
Frame Rate: 30,000	I Frame Interval:	Frame Rate: 30.000	I Frame Interval:	
Flip Horizontal: 🔲 Snap Shot	P Frame Interval:	Flip Horizontal: Snap Shot Color Space / Compression:	P Frame Interval:	
Color Space / Compression:		H264 💌		
H264 Uutput Si H264	Quality:	Output Size:	Quality:	
	1	320 x 240 (default) 640 x 480 800 x 600	Cancel Apply	
ОК	Cancel Apply	1920 x 1080 1280 x 720		

7. How to Capture H.264 Streaming

Download the specific software, access the camera and select the H264 format to capture the stream.

- H.264 Streaming on Amcap

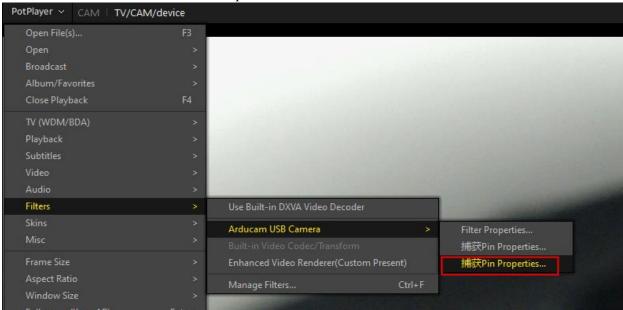
Properties	× Properties >		
Stream Format		Stream Format	
Video Format	Compression	-Video Format	Compression
Video Standard: None		Video Standard: None	
Frame Rate: 30.000	I Frame Interval:	Frame Rate: 30.000	I Frame Interval:
Flip Horizontal: Snap Shot	P Frame Interval:	Flip Horizontal: Snap Shot	P Frame Interval:
		H264 💌	
H264 Value Si H264	Quality:	Output Size:	Quality:
1280 x 720 💌		1280 x 720 ▼ 320 x 240 (default)	
		640 x 480 800 x 600	Cancel Apply
ОК	Cancel Apply	1920 x 1080 1280 x 720	

- H.264 Streaming on PotPlayer

Open> Open Webcam/Other Device>Select Arducam USB Can

PotPlayer \vee			
Open File(s)	F3		
Open	>	Open File(s)	Ctrl+O
Broadcast	>	Open URL	Ctrl+U
Album/Favorites	>	Open Folder	F2
Close Playback	F4	Open FTP/WebDAV/HTTP	Alt+F12
Playback	>	Open File/URL(s) from Clipboard	Ctrl+V
Subtitles	>	Default Open Action	
Video	>	Navigate	
Audio	>	Open Screen Capture	Ctrl+S
Filters	>	Open Webcam/Other Device	Ctrl+J
Skins	>	Open Analog TV	Ctrl+W
5.4°			

Filters>Arducam USB Camera>Pin Properties



8. Function Inspection Criteria

8.1 Function definition:

Camera module electrical performance and image quality.

8.2 Inspection methods

- Staff: Visual inspection personnel need to be trained and have normal color recognition ability. Their vision should be above 1.0 (or more than 1.0 after correction is acceptable), and their color discrimination ability can pass standard tests.
- Tool: Connect the computer, and inspect images with software.
- Distance and Time

Observation distance: 30~55cm

Observation time for each surface: 3~5seconds

• Inspection condition: Visual inspection should be performed under unobtrusive fluorescent lamps, and its minimum illumination should be above 100 feet of candlelight, or 60W fluorescent lamps, inspected at a 1.5m distance.

8.3 Accept criteria

- The image has no mess, color screen, and discoloration.
- There is no white spot, black spot, dirt or dark angle in the image.
- The image is same clear on all corners

9. Visual Inspection Criteria

9.1 The definition of the appearance

Camera module appearance.

9.2 Test methods

- Staff: Visual inspection personnel need to be trained and have normal color recognition ability. Their vision should be above 1.0 (or more than 1.0 after correction is acceptable), and their color discrimination ability can pass standard tests.
- Distance and Time
 - Observation distance: 50~75cm,

Observation time for each surface: 3~5seconds

• Inspection condition: Visual inspection should be performed under unobtrusive fluorescent lamps,

and its minimum illumination should be above 100 feet of candlelight, or 60W fluorescent lamps, inspected at 1.5m distance.

• Observation angle: Observation angle between $40^{\circ} \sim 50^{\circ}$.

9.3 Accept criteria

- Cleanliness: Parts must be free of stains, dust, grease, and other stains. Smudges due to transportation materials are acceptable if they can be blown away or wiped off.
- Assembly surface: The parts to be assembled should avoid scratches, gouges, dents, bends, cracks, indentations, abrasions or other defects caused by improper assembly.

Items	Condition	Specification	
High Temperature Test	Temp.: 80°C	No abnormal	
ingh remperature rest	Time: 96H		
Low Temperature Test	Temp: -20°C	No abnormal	
Low remperature rest	Time: 96H		
	Temp: 60°C		
Humidity Test	Humidity: 80-85%	No abnormal	
	Time: 24H		
Cable Tensile Strength Test	Loading weight: 4KG	No abnormal	
	Time: 60s		
	Hight: 60CM		
Drop Test	Number of times: 10 Electric no		
	On the wood		
	Vibration machine vibration	Electric normal	
Vibration Test	frequency to 50Hz		
	Vibration amplitude: 1.5MM;		
USB Connector	Vibration time: 30 Minutes	Electric normal	
	Number of times: 250	Electric normal	

10. Reliability Test

11. Packing Request

• Products should be strictly based on product characteristics to develop corresponding packaging standards and follow the implementation to ensure that the product is used within the specified use and storage period, to achieve anti-static, moisture-proof, shock-proof, mildew-proof, anti-barbaric handling and other signs and related warranty requirements. Product packaging should be marked: Supply-side name / logo, Product Model specifications, containing the number, production date /

batch number and order number.

- The product's outer packaging should be marked with: supplier name / sign, product model specification, built-in quantity, production date / batch number and order number.
- The packing and packing scheme are based on the customer's requirements, and the two parties will negotiate the specific details. The sealed samples shall prevail.

12. Others

- Changes to this acknowledgement need to be confirmed by both parties, and any modification by either party is invalid.
- This acknowledgment must be signed and returned within seven working days of receipt by the client, late regarded as the default.