



CMOS AR0134 Camera Module

1/3-Inch 1.2MP Color Module Datasheet

Rev 1.0, Mar 2017



Table of Contents

1 Introduction2
2 Features.....3
3 Block Diagram.....3
4 Application.....3
5 Pin Definition.....4
6 Mechanical Dimension.....5
7 Lens Options.....5

1 Introduction

The AR0134 module is a 1/3 inch 1.2MP global shutter color camera module which can be operated in its default mode or programmed for frame size, exposure, gain, and other parameters. The default mode output is a full-resolution image at 54 frames per second (fps). It outputs 12-bit raw data, using either the parallel output ports. The device may be operated in video (master) mode or in frame trigger mode.

FRAME_VALID and LINE_VALID signals are output on dedicated pins, along with a synchronized pixel clock. A dedicated FLASH pin can be programmed to control external LED or flash exposure illumination.

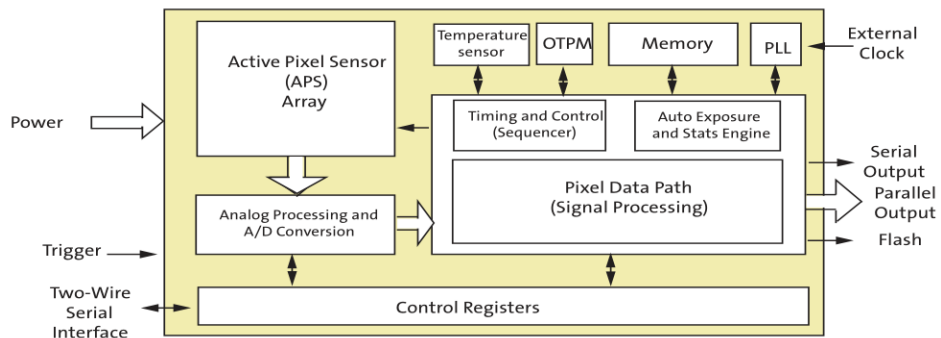
The AR0134 includes additional features to allow application-specific tuning: windowing, adjustable auto-exposure control, auto black level correction, on-board temperature sensor, and row skip and digital binning modes.

The AR0134 is a progressive-scan sensor that generates a stream of pixel data at a constant frame rate. It uses an on-chip, phase-locked loop (PLL) that can be optionally enabled to generate all internal clocks from a single master input clock running between 6 and 50 MHz. The maximum output pixel rate is 74.25 Mp/s, corresponding to a clock rate of 74.25 MHz.

2 Features

Parameter	Typical Value	
Optical format	1/3-inch (6 mm)	
Active pixels	1280H x 960V = 1.2 Mp	
Pixel size	3.75µm	
Color filter array	RGB Bayer or Monochrome	
Shutter type	Global shutter	
Input clock range	6 – 50 MHz	
Output pixel clock (maximum)	74.25 MHz	
Output	Serial	HiSPi
	Parallel	12-bit
Frame rate	Full resolution	54 fps
	720p	60 fps
Responsivity	Monochrome	6.1 V/lux-sec
	Color	5.3 V/lux-sec
SNR _{MAX}	38.6 dB	
Dynamic range	64 dB	
Supply voltage	I/O	1.8 or 2.8 V
	Digital	1.8 V
	Analog	2.8 V
	HiSPi	0.4 V
Power consumption	<400 mW	
Operating temperature	-30°C to +70°C (ambient)	
	-30°C to +80°C (junction)	
Package options	9 x 9 mm 64-pin iBGA	
	10x10 mm 48-pin iLCC	
	Bare die	

3 Block Diagram



4 Application

- Scene processing
- Scanning and machine vision
- 720p60 video applications
- High dynamic range imaging
- Unattended surveillance
- Stereo vision
- Automation
- Security

5 Pin Definition

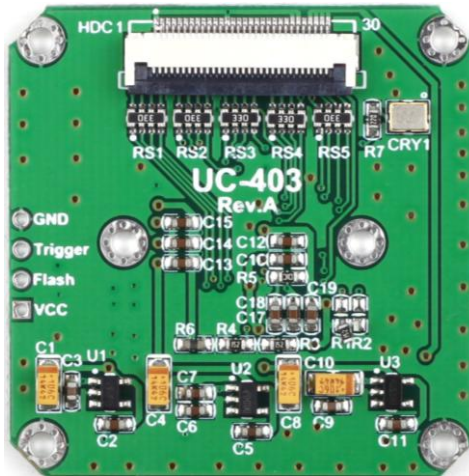
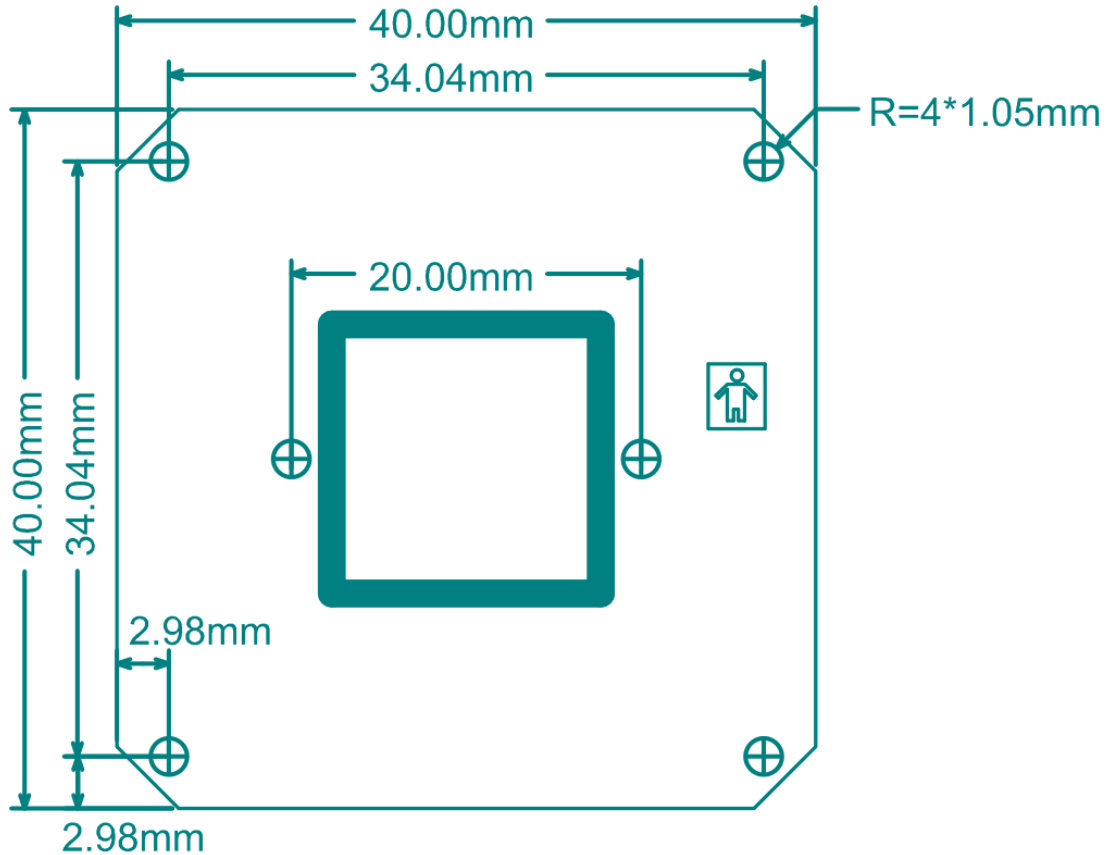


Table 1 HDC1 Connector Pin Definition

Pin No.	PIN NAME	TYPE	DESCRIPTION
1	GND	Ground	Power ground
2	FLASH	Output	Flash output control
3	Trigger	Input	Exposure synchronization input
4	VSYNC	Output	Active High: Frame Valid; indicates active frame
5	HREF	Output	Active High: Line/Data Valid; indicates active pixels
6	DOUT11	Output	Pixel Data Output 11 (MSB)
7	DOUT10	Output	Pixel Data Output 10
8	DOUT9	Output	Pixel Data Output 9
9	DOUT8	Output	Pixel Data Output 8
10	DOUT7	Output	Pixel Data Output 7
11	DOUT6	Output	Pixel Data Output 6
12	DOUT5	Output	Pixel Data Output 5
13	GND	Ground	Power ground
14	DOUT4	Output	Pixel Data Output 4
15	DOUT3	Output	Pixel Data Output 3
16	DOUT2	Output	Pixel Data Output 2
17	DOUT1	Output	Pixel Data Output 1
18	DOUT0	Output	Pixel Data Output 0(LSB)
19	XCLK	Input	Master Clock into Sensor
20	PCLK	Output	Pixel Clock output from sensor
21	SCL	Input	Two-Wire Serial Interface Clock
22	SDATA	Bi-directional	Two-Wire Serial Interface Data I/O
23	RST	Input	Sensor reset signal, active low
24	GND	Ground	Power ground
25	GND	Ground	Power ground
26	STANDBY	Input	Standby-mode enable pin (active HIGH)
27~30	VCC	POWER	3.3v Power supply

6 Mechanical Dimension



7 Lens Options

The camera board shipped with default M12 mount LS-6020. Lens specification list as follows. Please contact us admin@arducam.com for more lens options or visit www.arducam.com/downloads/Lenses/.

PRODUCT NAME: LS-6020

1. SPECIFICATION :

- 1.SENSOR SIZE
- 2.WAVELENGTH
- 3.FOCAL LENGTH (EFL)
- 4.F/NO (INFINITE)
- 5.BACK FOCAL LENGTH
- 6.FLANGE BACK LENGTH
- 7.FIELD OF VIEW (DIAGONAL)
- 8.OPTICAL DISTORTION (DIAGONAL)
- 9.Thread Size
- 10.Element

1/3" CMOS
$\lambda = 400-700\text{nm}(\text{COLOR})$
$f = 6.0 \text{ mm}$
$F/\text{NO} = 2.2$
$\text{BFL} = 5.85 \text{ mm}$
$\text{FB} = 5.05 \text{ mm}$
$= 60^\circ$
$< -6.8\%$
M12XP0.5-6g
GLASS

- 11. IR FILTER SPEC.(Built-in,Others available)
 - Tavg>=88% @ 440-520 nm
 - T<=50% @ 648±10 nm
 - Tavg<=3% @ 700-1000 nm
 - T<=5% @ 1050 nm
 - Tavg>=78% at 850nm±30nm

2. OPTICAL LAYOUT : scale 4 : 1

