

CAM8100-D

Digital Camera Module



User Manual

Version 1.0 Jun. 30th, 2014

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Revision History:

Version	Date	Description
1.0	2014-6-30	Original Version

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Chapter 1 Product Overview

1.1 Brief Introduction

CAM8100-D is a new 5-megapixel CMOS camera module designed by Embest Technology. It used a 1/4" color image sensor , support up QSXGA (2592x1944) image resolution, featured with complete user control and output data format conversion; supports automatic image control functions include automatic exposure control (AEC), automatic white balance(AWB), automatic band filter (ABF), automatic, and so on.

This module is currently compatible with RIoTboard. CAM8100-D has a camera interface, connect to an evaluation board with a 30PIN FPC Cable e for implementing the function of image capture.

1.2 Packing List

- CAM8100-D Module×1
- Mini USB Cable×1

1.3 Product Features

- Module Dimensions: 39.16mm×34.96mm
- Operating Temperature: 0 °C ~ 70 °C
- Operating Temperature for Stable Imaging: 0 °C ~ 50 °C
- Connector: 30Pin FPC connector
- Power: powered by the target board
- Sensitivity: 600 mV/Lux-sec
- Active array size: 2592 x 1944

- Pixel Size: ×
- Lens size: 1/4"
- Maximum image transfer rate:
 - ◆ QSXGA (2592x1944): 15 fps
 - ◆ 1080p: 15 fps
 - ◆ 1280x960: 15 fps
 - ◆ 720p: 15 fps
 - ◆ VGA (640x480): 30fps
 - ◆ QVGA (320x240): 30fps
- Automatic image control functions:
 - ◆ Automatic exposure control (AEC),
 - ◆ Automatic white balance(AWB)
 - ◆ Automatic band filter (ABF)
 - ◆ Automatic 50/60 Hz luminance detection
 - ◆ Automatic black level calibration (ABLC)
- Compatible Boards: RIoTboard

Chapter 2 Interface Definition

CAM8100-D has a camera interface, connect to an evaluation board with a 30PIN FPC Cable e for implementing the function of image capture. See below for the camera location.



Figure 2-1 Camera interface location

The following table lists the pin definitions of the camera interfaces on CAM8100-D:

Table 2-1 camera Interface

Camera		
Pin	Signal	Function
1	GND	GND
2	D0	Digital image data bit 0
3	D1	Digital image data bit 1
4	D2	Digital image data bit 2
5	D3	Digital image data bit 3
6	D4	Digital image data bit 4
7	D5	Digital image data bit 5
8	D6	Digital image data bit 6
9	D7	Digital image data bit 7
10	D8	Digital image data bit 8
11	D9	Digital image data bit 9

12	D10	Digital image data bit 10
13	D11	Digital image data bit 11
14	GND	GND
15	PCLK	Pixel clock
16	GND	GND
17	HS	Horizontal synchronization
18	VDD50	5V
19	VS	Vertical synchronization
20	VDD33	3.3V
21	XCLKA	Clock output a
22	XCLKB	Clock output b
23	GND	GND
24	FLD	Field identification
25	WEN	Write Enable
26	STROBE	Flash strobe control signal
27	SDA	IIC master serial clock
28	SCL	IIC serial bidirectional data
29	GND	GND

Chapter 3 Use of CAM8100-D

This chapter contains the lists of hardware and software that are required to allow CAM8100-D function properly, an illustration that shows hardware connections, and operations under Android to activate CAM8100-D camera module.

3.1 Hardware/Software Requirements


1) Hardware Requirements;

- An RIoTboard installed with Android system
- A CAM8100-D camera module
- A 30Pin FPC Cable
- A TF card (optional)
- A 5V power adapter
- A display device (HDMI monitors or LCD8000-97C/LCD8000-43T/LCD8000-70T display modules /VGA8000 conversion module)

2) Software Requirements;

- OS: Android
- Veision: SVN2705 or higher

Note:

 CAM8100-D can only work under Android systems temporarily.

3.2 Hardware Connections

As shown in the following image, please use the 30Pin FPC cable to connect CAM8100-D camera module to the camera interface of RIoTboard, then connect a display device (LCD8000-97C is used here) and a power adapter to the board.

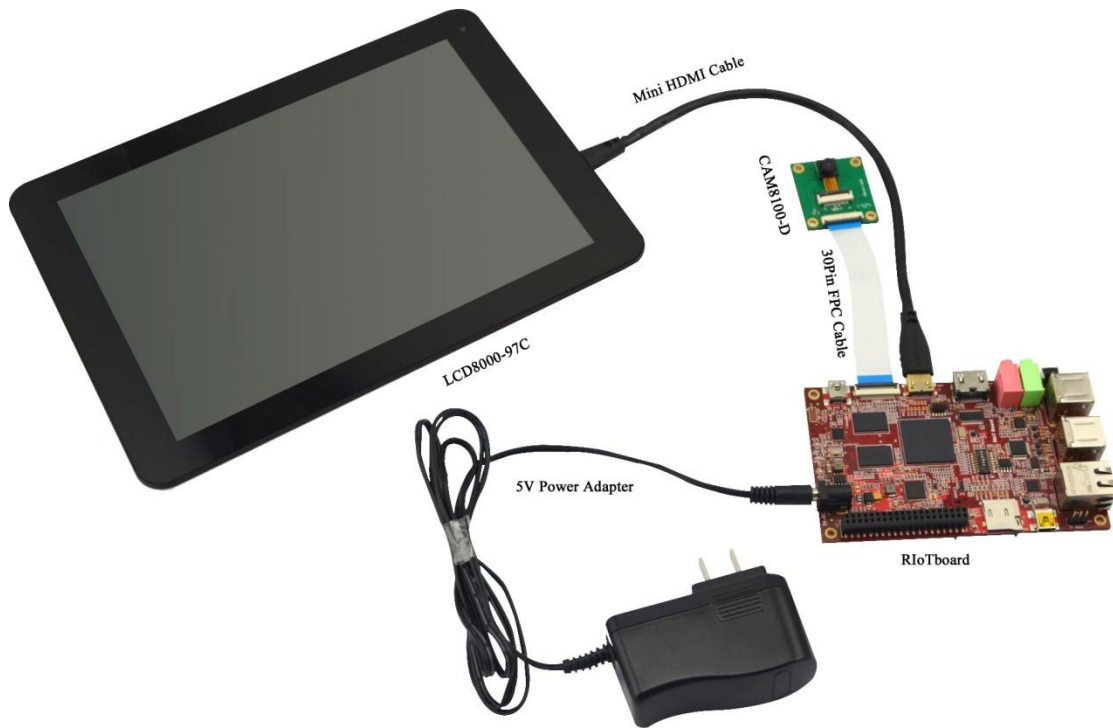


Figure 3-1 Hardware Connections

3.3 Using CAM8100-D

- 1) After Android system boots up, use your finger to touch the icon at the bottom of Android home interface as shown blow to enter application list.

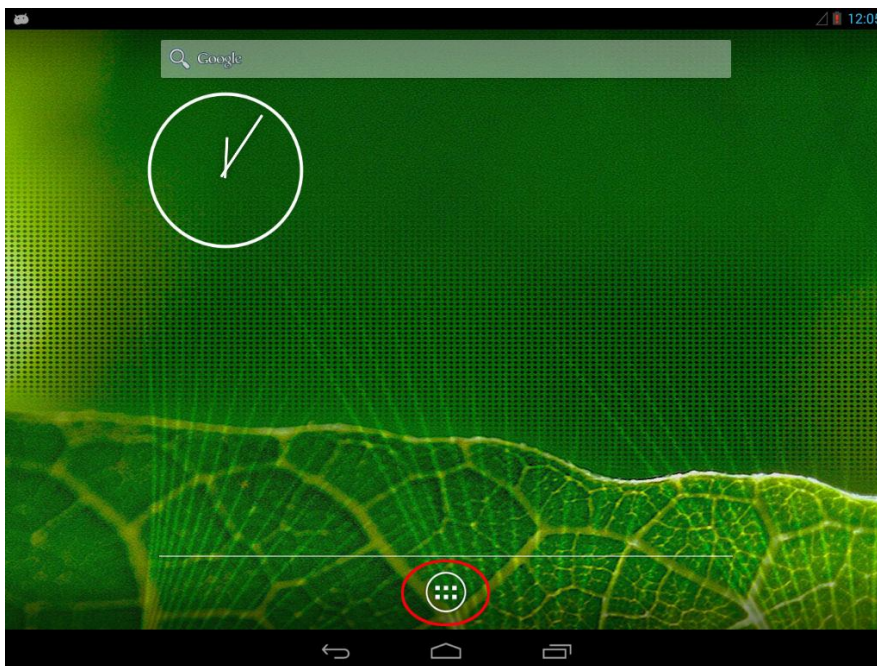


Figure 3-2 Android Home Interface

- 2) Touch the Camera icon in the application list as shown below; The images captured by the camera module will be displayed on your screen.

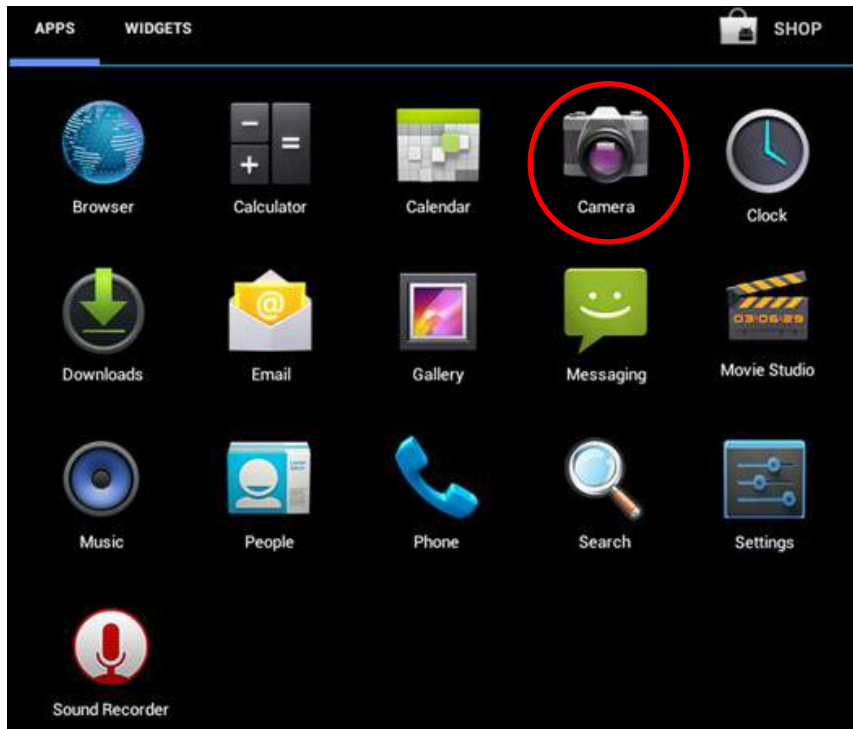


Figure 3-3 Run Camera Application

Technical Support and Warranty

Technical Support



Embest Technology provides its product with one-year free technical support including:

- Providing software and hardware resources related to the embedded products of Embest Technology;
- Helping customers properly compile and run the source code provided by Embest Technology;
- Providing technical support service if the embedded hardware products do not function properly under the circumstances that customers operate according to the instructions in the documents provided by Embest Technology;
- Helping customers troubleshoot the products.



The following conditions will not be covered by our technical support service. We will take appropriate measures accordingly:


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- Customers encounter issues related to their own applications;
- Customers encounter issues caused by any unauthorized alter to the source code provided by Embest Technology;

Warranty Conditions

- 1) 12-month free warranty on the PCB under normal conditions of use since the sales of the product;

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 - Products malfunction caused by disassembly or alter of components by customers or, products disassembled or repaired by persons or organizations unauthorized by Embest Technology, or altered in factory specifications, or configured or expanded with the components that are not provided or recognized by Embest Technology and the resulted damage in appearance or function;
 - Product failures caused by the software or system installed by customers or inappropriate settings of software or computer viruses;
 - Products purchased from unauthorized sales;
 - Warranty (including verbal and written) that is not made by Embest Technology and not included in the scope of our warranty should be fulfilled by the party who committed. Embest Technology has no any responsibility;
- 3) Within the period of warranty, the freight for sending products from customers to Embest Technology should be paid by customers; the freight from Embest to customers should be paid by us. The freight in any direction occurs after warranty period should be paid by customers.
- 4) Please contact technical support if there is any repair request.

Note:

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