Introduction

The M4088 camera evaluation board (EVB) allows users to demonstrate the image quality from the sensor of OV5007. The internal register of OV5017 can be selected by DIP switch and value set by parallel interface. Besides, it provides monochrome video signal for monitoring purpose.
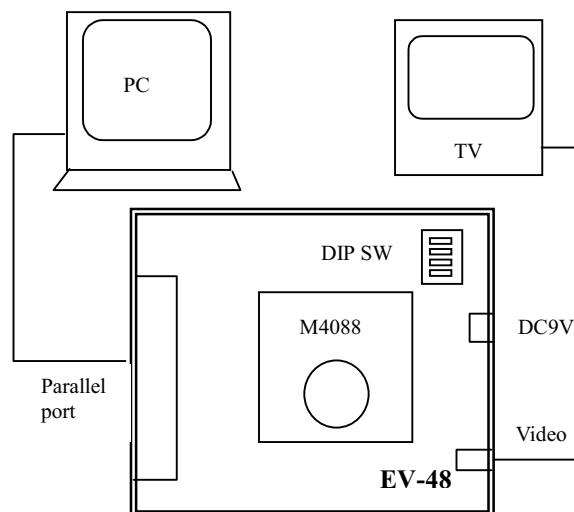
Features

- 8bit grey scale format
- image size: 384 x 288
- Progressive scanning
- Window control
- Mirror function
- Gain, exposure, Gamma control
- Internal register control
- Still picture capture

Illustration Diagram

Content of kit

- M4088 camera module with lens f7.4, F2.1
- Camera Evaluation Board, model EV48
- Parallel port cable
- 2-pin connector for battery
- RCA to RCA cable
- Disk containing evaluation software and operation manual
  a. Cev50.exe
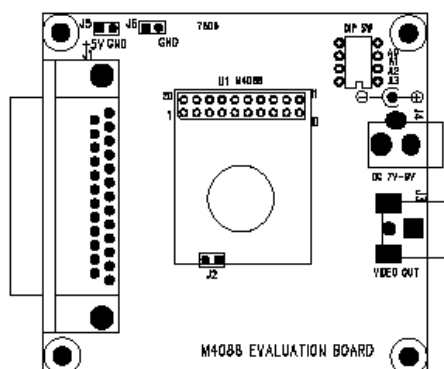 b. Bmphead1
  c. Port32.ocx
  d. Operation manual

System requirement

- 7.5V ~ 12V DC power supply, 200mA regulate, 9V is recommended
- TV/Video monitor, PAL (optional)
- PC with Pentium processor running Windows95/98 with ECP compliant parallel port

Hardware

Designation	Purpose	Connection requirement
J1	Control interface	Connect to PC Parallel Port
DIP SW	Select registers	
J3	Video Out	Connect to Composite Video input of TV/Monitor
J4	DC power connector	Connect to DC 9V adapter, core positive.

Layout of EVB

Software Installation
1. Create a directory in your hard disk. eg c:\Camera
2. Copy all the files in disk to the hard disk under directory c:\camera
3. Check your PC system setup if the parallel port is set at ECP mode and active.
4. Click install.bat to register the program
5. Click Cev50.exe to start program.

Connecting EVB
1. Be sure the camera module, M4088, is seated properly on the EVB.
2. Connect the DC plug to J4, make sure the center is +ve. Can use AC/DC adapter range 7.5V-12V, 9VDC is recommended.
3. If 5V regulated power supply is used, use enclosed 2 pin connector plug into J5. Note polarity, red wire to 5V, black wire to ground.
4. Make sure the Cev50.exe is running on PC, plug in the parallel port cable, one end to PC and the other end to EVB. Such case your PC parallel port will be initialized before plug in to EVB.
5. Connect RCA cable to TV/monitor, you can see the monochrome image on the screen. If under 60Hz lighting, you may find slight flicking of the picture. That is normal due to different TV system. The focus of the image can be fine tuned by turning in and out of the lens. Please note that if the video timing or window setting is changed, the display on TV/monitor will be scramble. That is normal.
6. Now, you are ready to set up the camera and upload pictures.

Operating EVB
1. To have an image, the data bus of camera should be set to VPORT, DIP SW A[3:0]=1000, and then click the Capture button on the control panel. the picture will be displayed on the PC monitor
2. The picture can be saved as *.bmp format to the hard disk.
3. Most of the features of the camera can be set through the control panel. Every time the register is set, need to click "Set Register" and make the setting effective.
4. During setting the registers, the registers address should be set by manual.   The control panel will prompt you to select corresponding register address on the board DIP SW.   After registers addresses selected, click OK to continue. For example, if the gain is set, following dialog will display.
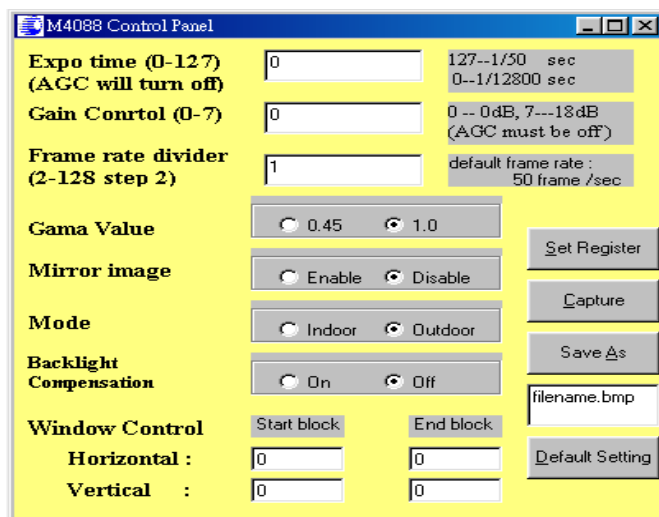

5. When all registers are set, select VPORT A[3:0]=1000.
6. Click Default setting to reset the camera and load default setting

Using the Cev50.exe

A. Function of Button

Name   Function
Set Register   After selecting the desired setting, click this button to take effect
Capture   A picture will be captured and uploaded from camera to PC and display
Save As   To save current image to hard disk, input the file name before click the button
Default Setting   To load the default setting and reset the camera

B. Control Panel

C. Operation

1. Exposure time: Manual exposure setting. This will disable Auto Gain Control (AGC).
2. Gain control: To control the gain of camera by manual. This is only effective when AGC is disable
3. Frame Rate Divider : It is to control the pixel clock rate
4. Gamma: To select gamma value
5. Mirror: perform mirror function.
6. Mode : Select indoor or outdoor mode
7. Backlight compensation : To eliminate the effect of backlight
8. Window control: The window size can be set from 24x18 to 384x288. The input value should be decimal.
9. Set Register: click this button after change setting. Follow the dialog box to switch the DIP switch and click "OK". Only one register can be set at a time so it may need to set the DIP switch many times if more than one setting is changed.
10. Capture: click to upload the image data to PC and display automatically. It will take few second for data transfer.
11. Save As: The captured image can be saved to hard disk in bit map (*.bmp) format. The raw image file is also provided in the same directory.
12. Default Setting: reset all data to default setting.

End