



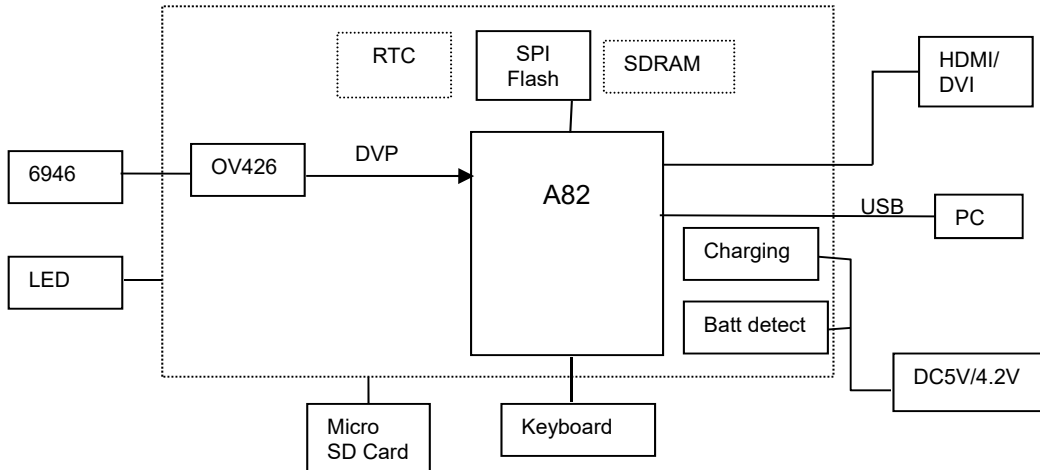
**Introduction**

This module has been designed for muC10x series and output real time video to HDMI/DVI monitor. It performs still image capture as well as video recording and store files to SD card. It has been designed for operation by DC5V or lithium battery.

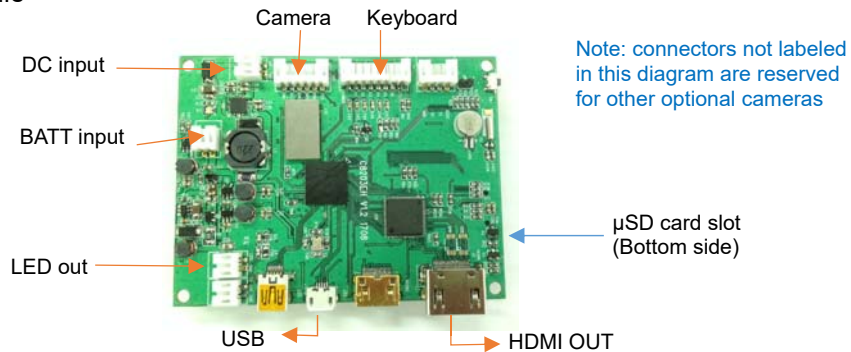
**Key Features**

- ✓ Interface to muC10x series camera
- ✓ Real time Video output
- ✓ DVI output HD720p at 30fps
- ✓ Simple operation for AWB
- ✓ AVI recording and JPG snap shot
- ✓ Store to SD card, up to 32G
- ✓ Image quality fine tune possible
- ✓ RTC with battery backup
- ✓ Battery level detect and display on screen
- ✓ 5VDC or 4.2V Li-ion battery operated
- ✓ Built in battery charging
- ✓ Individual GPIO for key input

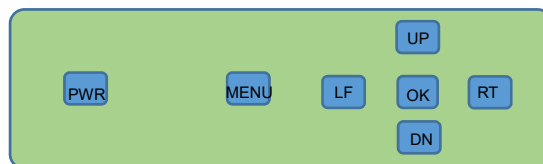
**Block Diagram**



**Connectors of module**

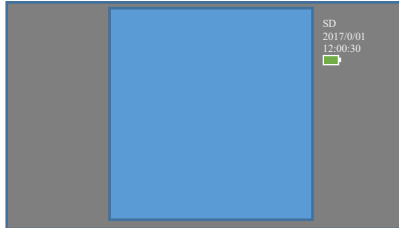


**Key board layout**



## Operation

1. Power on off the module
  - a. Connect HDMI cable to external HD monitor
  - b. Apply DC or battery accordingly. Please note the module is configured in different operation voltage, apply inappropriate voltage will damage the module.
  - c. Connect camera module
  - d. Press PWR key and turn on the system. Video will be displayed in the center of the monitor, and OSD on the upper right corner



2. White balance calibration
  - a. Press DN key, it will perform color balance
3. LED output control
  - a. Press UP key to toggle external LED on and off
  - b. By default, it will be on at power up
4. Record video clip and snap still picture
  - a. Make sure micro SD card is existed before capture
  - b. Press LF to snap a still picture, a camera icon will be flashed once in the center of display
  - c. Press RT to start video recording, press again RT to stop. When recording a red dot as well as timer will display on the upper right corner of display
  - d. Maximum recording duration is 30min.

5. Menu operation
  - a. Press MENU to enter menu display
  - b. Use UP/DN key select item, and use LF/RT to change value, use OK key to confirm and quit
    - i. Brightness : 1-9
    - ii. Contrast : 1-9
    - iii. Sharpness : 1-5
    - Batt Check: OFF/ON
    - iv. Reset file number : clear file number and start from IM\_00001, effective from next time capture

BRIGHTNESS	5
SATURATION	4
CONTRAST	3
SHARPNESS	1
BATT CHECK	OFF
RESET FILE NUMBER	
FACTORY DEFAULT	
SAVE & EXIT	
FW VER: 20170304	

6. Date time setup
  - a. Press MENU and hold for 2 second then release, it will enter D/T setup menu
  - b. Use UP/DN to increase or decrease digit, use LF/RT to move field, OK to quit.

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7. Battery detect and charging
  - a. At preview mode, a battery icon will display on the upper right corner to show the status of battery. If it is set to off the battery detect, no icon will be displayed.
  - b. If battery is low, an empty battery symbol will be flashing on the center of monitor for few second and shut down the system automatically.
  - c. Connect external DC for charging. Depends on the power configure, use 12V for H version and 5V for E version.
  - d. If the system use external DC and no battery attached, please set battery detect off in menu
8. Play back video files
  - a. Pick out the micro SD card and play it in PC or
  - b. Connect module to PC thru USB cable.

9. Connect to PC

- a. It is mass storage device, like external hard disk for PC
- b. When connected, HD monitor will show “USB connected” and PC screen will pop up the window to show the content of the micro SD card installed on the module. No other module operation will be performed in this mode
- c. If there is no SD card installed, it will not enter mass storage mode.
- d. Video files is placed under folder of DCVD, file name is IM\_0xxx.avi or IM\_0xxx.jpg
- e. When disconnected from PC, the module will turn off automatically.
- f. When connected, never remove the SD card from the module, otherwise, system will hang and SD card may be damaged.

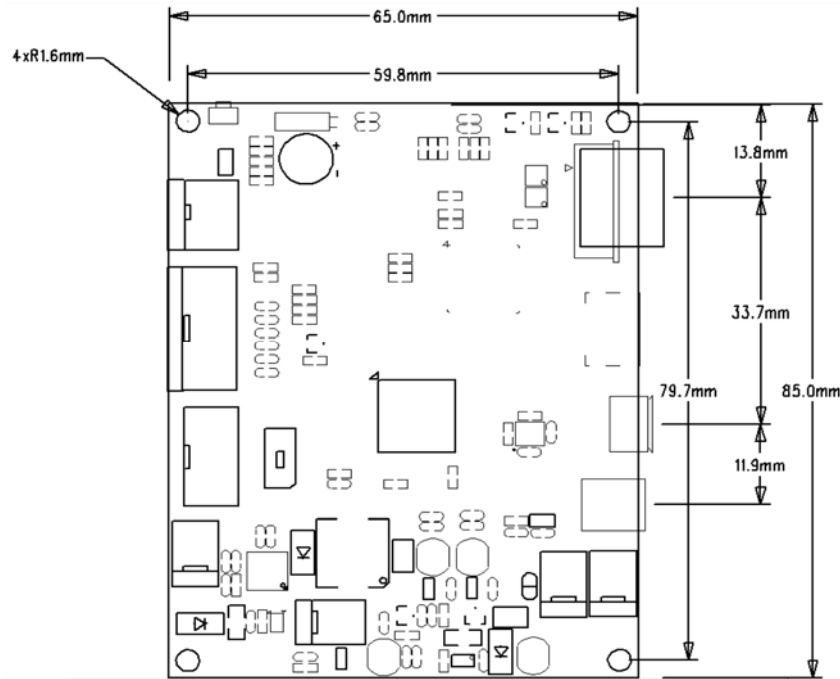
**Electrical Characteristics** (at room temperature 25C)

Parameter	Condition	Min	Typ.	Max	Unit
Operation Voltage		3.5	4.2	5.5	V
Operation Current	With camera connected but no LED on	170	140	120	mA
Charging current	5V DC input			1000	mA

LED Output Voltage: same as input, battery or DC

LED Current source: depends on LED forward voltage, limited with 100ohm resistor

**Mechanical dimensions**



**Ordering information**

We provide different options for customer to select on his system configuration. Customer can specify requirement when order placement.

- 1. By default, the standard configuration is 5V/4.2V battery, with normal size HDMI connector. Model no is C8203E-0426
- 2. By PCB option, we can provide higher voltage operation, either 12VDC or 4.2Vx2 battery. Model no is C8203H-0426
- 3. The other options are mini size HDMI connector.