Description

This image recording module is a standard module which can be designed for various applications by firmware change. We will provide some standard firmware but also help customer making his own application.

Features

✓ Small in size: 80x55mm
✓ On board Flash memory (option)
✓ On board SD card (option)
✓ DC12V operation
✓ Allow 2 video channels input
✓ Video output to TV
✓ Trigger input – active low
✓ Alarm output – active low
✓ Keyboard input – 4 bits with common ground
✓ Preset NTSC or PAL TV system input
✓ Preset JPG/AVI for simple operation
✓ 2mm pin connectors

Connector Description

Note: the connectors shown below will depend on the firmware design, not applicable for all models.

Connector	Function	Remark
JP1	Select NTSC/PAL	Need to be selected before power up
J1	NC	For debug purpose,
J2	SD card slot	Support up to 2G SD card
J3	Select JPG/AVI	Need to be selected before power up
J4	Keyboard input	4 bit binary input
J5	Video out	2-pins, To output video signal to TV set
J6	Camera input	4-pins, for 2 ch video input and power supply
J7	Trigger input	3-pins, for 2 trigger input, active low
J8	Aux DC input/output	2-pins, for DC12V input/output
J9	Alarm output	2-pins, for alarm output, active low

Application Examples

The following examples are ready to production, detail spec and operation please refer to the relevant document

Model No	Application	Description
8100	General Purpose	Full function, 4 bit key input, with motion detect
8101	Door Phone	Single channel, single folder
8102	Taxi Cam	Single channel, 2-key operation
8103	Vehicle Black Box	2-ch switching, auto capture, 3sec/frame/channel
8105	Video recording only	Slow recording, VGA format, playback like VCR

Electrical Characteristics   (at room temperature 25C)

Parameter	Condition	Min	Type	Max	Unit
Operation Voltage		7.5	12	13.5	V
Operation Current		238	145	128	mA
Standby Current	No Video o/p	215	130	120	mA
Alarm Output current	At 3V	-	-	40	mA
Trigger Input Voltage		0	-	0.9	V

Image and file storage information

|	
Image format	Still picture: JPG, VGA (640x480) Video: MJPEG, QVGA (320x240), 5fps
File size per image	~80KB (HQ) ~40KB(SQ) (depends on scene)
File size per video clip(10sec)	~600KB
Max image number per folder	1024 images
Max folder number per card	1024 folders
Max memory size for SD card	2G

Updated: Jan 25, 2007

Description

This image recording module is a standard module which using 4 bit data for various command control the module.

Features

- ✓ Small in size: 80x55mm
- ✓ 2-channel input
- ✓ PIP feature
- ✓ On board Flash memory (option)
- ✓ On board SD card (option)
- ✓ DC12V operation
- ✓ External trigger to capture a photo/AVI
- ✓ Alarm output when motion detected
- ✓ Video output to TV
- ✓ 4-bit Keys operation
- ✓ Preset NTSC or PAL TV system input
- ✓ 2mm pin connectors
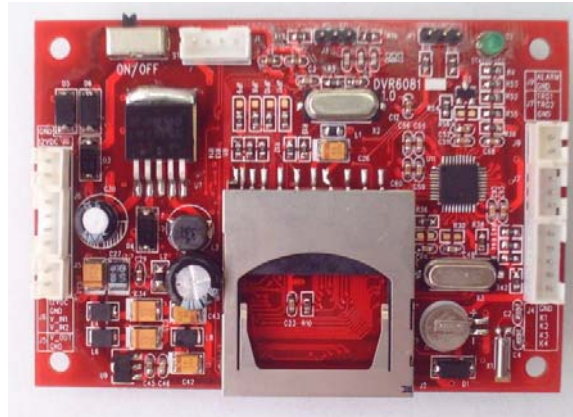
Connector Description

Note: the connectors shown below will depend on the firmware design, not applicable for all models.

Connector	Function	Remark
JP1	Select NTSC/PAL	Need to be selected before power up
J1	NC	For debug purpose,
J2	SD card slot	Support up to 2G SD card
J3	Select AVI/JPG	Need to be selected before power up
J4	Keyboard input	4 bit binary input with common ground, internal pull high
J5	Video out	2-pins, To output video signal to TV set
J6	Camera input	4-pins, for video signal in and power supply (option)
J7	Trigger input	Active Low, TG1 for Cam1, TG2 for Cam2
J8	Power	Aux power input, 12V DC, if J6 power no connected
J9	Alarm Out	Active low when motion detected

Electrical Characteristics (at room temperature 25C)

Parameter	Condition	Min	Type	Max	Unit
Operation Voltage		7.5	12	13.5	V
Operation Current		238	145	128	mA
Standby Current	No Video o/p	215	130	120	mA

Key Definition

Key	Name	Key	Name
0001	Snap Shot	0111	Menu
0010	OK	1000	NOP
0011	Down	1001	Left
0100	NOP	1010	UP
0101	Right	1011	Mode
0110	Disp	1100	NOP

Note: all other combinations are NOP (no operation)

Operation

Users can make his own keyboard according to the key definition stated and perform the following operation.

1   Change mode between view and play back

By default, the DVR is in view mode and show channel 1 when power up. One can press MODE to switch view or playback photo screen

2   Change viewing channel and PIP
- 2.1   Press DISP to change view from Ch1 to Ch2
- 2.2   Press again DISP and view PIP, Ch2 in Ch1
- 2.3   Press again DISP and view PIP, Ch1 in Ch2
- 2.4   Press again DISP to cycle from viewing Ch1

3   Capture photo
- 3.1   Use external trigger to capture: refer to section 4, as below.
- 3.2   by manually: at View mode, press SHOT to snap an image
- 3.3   by motion detect: pls refer to the following setup section, once it is in armed mode, the DVR will capture the image when motion detected.
- 3.4   Use short cut key UP to arm the system at View mode

4   External trigger for capture
- 4.1   Active low, it depends on which camera is active.
- 4.2   If ch1 is in view, if TG1 active, capture a photo from ch1, if TG2 active, the system will switch to ch2 and take a photo from ch2 then keep the ch2 in view, until manual change to ch1.
- 4.3   If both channels has triggered at the same time, the first triggered channel will be valid.

5   Playback the photo inside the memory

The capture photos will be stored in different folders for easy searching. The folders are named according to the date sequence. If there is no file in the memory, it will show "NO FILE" and enter view mode
- 5.1   press MODE button to enter playback mode
- 5.2   press OK to enter thumbnail view, press again OK to normal view
- 5.3   use LF/RT button to forward or rewind the image
- 5.4   press UP to turn on off the OSD
- 5.5   press DISP to show folder name, use UP/DN key to scroll, OK to select

6   Delete files from memory
- 6.1   At playback mode, press MENU to enter playback menu, by using LF/RT key, one can select delete current image or all files in the current folder. Press OK to confirm and reconfirm by selecting a tick icon.
- 6.2   One can select format to delete all files in all folders

Delete Menu
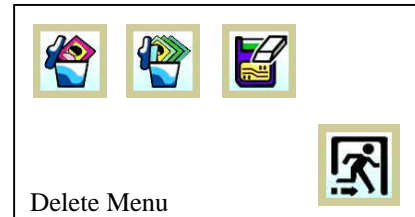
7   System Setup

At preview mode, press MENU
- 7.1   Set up Date time
    - 7.1.1   Use LF/RT key to select date or time and UP/DN key to set the correct digit. The setting will then store into system. Press OK to confirm.
- 7.2   Set up auto capture – enable or disable
    - 7.2.1   Press OK to toggle enable or disable
- 7.3   Set up the capture format – AVI or Photo
    - 7.3.1   Press OK to toggle AVI or Photo, press LF/RT key to select next.
- 7.4   Advance Setup
    - 7.4.1   Set up the TV system: Press OK to toggle NTSC or PAL
    - 7.4.2   Setup the image quality: Press OK to toggle HQ or SQ
    - 7.4.3   Setup the motion detect sensing area
   - 7.4.3.1 Press OK to set up the area
        - 7.4.3.2 Use LF/RT key to select full/middle/small area
        - 7.4.3.3 Press OK, then LF/RT/UP/DN key to move the sensing area to desired target position
        - 7.4.3.4 Press OK to quit sensing area setup.
    - 7.4.4   Set up motion detect count: press OK to select 1, 3 or 5. this means the no of images will be captured at every trigger.
    - 7.4.5   Set up motion detect interval: press OK to select 1,3 or 5, the bigger figure the longer interval to active the detection. Setting 1 is about 3 sec between 2 snap shot.

Set Up Screen
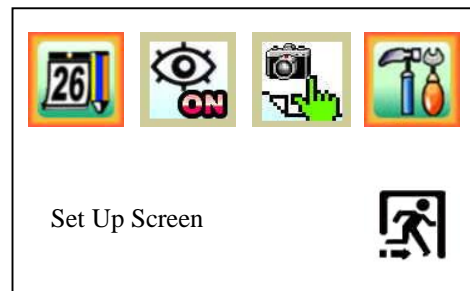
7.4.6 Set up motion detect sensitivity
      7.4.6.1 Use UP/DN key to select value from 1 to 99
      7.4.6.2 The value of data changes in the targeted area is shown, therefore, one can determine what target value is good for his monitoring purpose. In general speaking, bigger value, lower sensitivity.
      7.4.6.3 Press OK to confirm and quit.

7. Alarm Output

If the active channel has a motion detected, it will output an active low signal to Alarm Out, user can connect it to trigger external device such as siren. Note, this feature is only active at motion detect on and only main viewing channel in PIP mode.

Icon Definition

Set up Menu

	Date Time setup		Advance Set up
	Motion Detect On or Off		Quit Menu
	Select Photo or Video		

Advance Set up

	Select TV System, NTSC or PAL		Select image quality Hi or Low
	Motion detect area setting		Motion Detect count
	Motion detect interval setting		Motion detect sensitivity

Photo Management

	Delete one photo		Format memory, clear all files
	Delete all photos		