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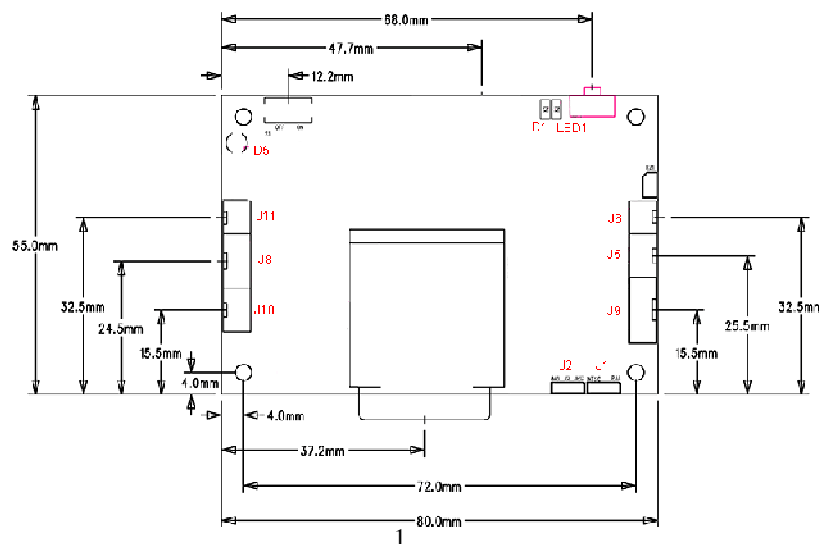
This image recording module is a standard module which using 4 bit data for various command control the module.

Features

✓ Small in size: 80x55mm
✓ 1-channel AV input
✓ Motion detect or manual capture
✓ External trigger to capture a photo/AVI
✓ JPG – 720x480 (D1)
✓ AVI with audio recording– 720x480 30fps MJPEG, QVGA selectable
✓ Support SDHC to 16G
✓ Alarm output when motion detected
✓ Video output to TV
✓ DC12V operation
✓ 4-bit Keys operation
✓ Preset NTSC or PAL TV system input
✓ Battery backup to prevent file corruption

✓ Watch dog timer to prevent from system hang
✓ MCU for customer protection
✓ RTC to display date time
✓ Stamp data time on photo/AVI
✓ 2mm pin connectors

Connector Description

Connector	Function	Remark
J1	Select NTSC/PAL	Need to be selected before power up
J2	Select AVI/JPG	Need to be selected before power up
J3	NC	For debug purpose
J4	SD card	SDHC support upto 16G
J5	Trigger input	3-pins, Active Low
J6	Alarm Out	Active low when motion detected
J7	NC	For debug purpose,
J8	Camera input	4-pins, for audio video signal in and power supply (option)
J9	Keyboard input	4 bit binary input with common ground, internal pull high
J10	A/V out	3-pins, To output audio video signal to TV set
J11	Power	Power input
D1	LED	Red, status LED
D5	LED	Green, Power indicator
LED1	LED	Blue, charging indicator

Electrical Characteristics   (at room temperature 25C)

Parameter	Condition	Min	Type	Max	Unit
Operation Voltage		7.5	12	13.5	V
Operation Current			200		mA

Key Definition

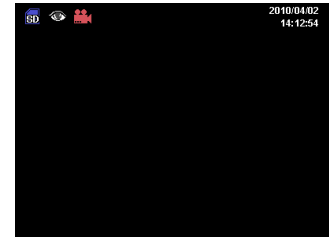| Key	Name	Key	Name
0001	Snap Shot	0111	Menu
0010	OK	1000	NOP
0011	Down	1001	Left
0100	NOP	1010	UP
0101	Right	1011	Mode
0110	Disp	1100	NOP

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.

Preview Mode

1 Change mode between view and play back. By default, the DVR is in view mode when power up. One can press MODE to switch view or playback

2 Capture photo or AVI
   2.1 Use external trigger: active low. When TRG1 active, take a photo, when TRG2 is active, capture a clip of video.
   2.2 Use keyboard manually: press SNAP to snap an image or video, depends on the setting.
   2.3 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 Short Cut Key
   3.1 UP to arm (turn on MD) or disarm the system. When armed, an eyes icon to be displayed on screen.
   3.2 DN to toggle between photo or video. Camera and camcorder icon will be displayed

4 Alarm Output
If it 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. This alarm output will not be active at other trigger modes.
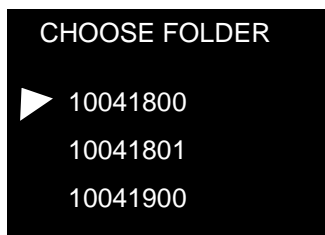
Playback Mode

5 Playback the files
   5.1 Press MODE button to enter playback mode. If there is no file in the memory, it will show "NO FILE" and return to preview mode. In playback mode, press MODE to enter view mode
   5.2 Use LF/RT button to forward or rewind the image
   5.3 Press UP to turn on off the OSD
   5.4 For AVI file, press DN to start playing. Press OK to stop playing.
   5.5 During playing, press DN to pause and press DN again to resume.
   5.6 During playing, press RT to fast forward, can set speed of x2, x4, x8
   5.7 During playing, the icon of playing and pause will be shown

6 Delete files from memory
   6.1 At playback mode, press MENU and enter delete menu. By using LF/RT key, one can select delete current image or all files. Press OK to confirm
   6.2 One can select format to delete all files in all folders
   6.3 Press QUIT icon to quit the delete menu
   6.4 If there is no file after deletion, it will show "NO FILES" and go preview mode directly.

Delete Menu

7   Choose a folder to playback
    7.1   press DISP in playback mode to choose a folder

```
CHOOSE FOLDER

▶  10041800

    10041801

    10041900
```
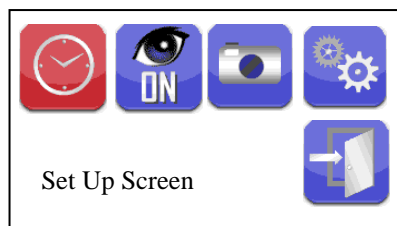
The folder's name consists of 8 numerals, like 10041800
10: last two numerals of year
04: month
18: day
00: series number, starting from 00 to 99

    7.2   Press UP/DN to select previous/next folder
    7.3   Press OK to enter current folder

System Setup

8   System Setup
    At preview mode, press MODE for 3 sec and enter setup menu.
    Use LF/RT key to select the item. Press OK to select or toggle
    the setting.
        8.1   Set up Date time
            8.1.1   Press OK to enter the time setup.
            8.1.2   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.
        8.2   Set up motion detect – enable or disable
            8.2.1   Press OK to toggle enable or disable
        8.3   Set up the capture format – AVI or Photo
            8.3.1   Press OK to toggle AVI or Photo
        8.4   Advance Setup
            8.4.1   Press OK to enter advance setup menu
            8.4.2   Set up the TV system: Press OK to toggle NTSC or
                    PAL
            8.4.3   Setup the image quality: Press OK to toggle HQ or
                    SQ
            8.4.4   Setup no of snap shots if set to photo, press OK to
                    toggle 1, 3
            8.4.5   Setup the Video quality: press OK to toggle D1
                    /QVGA
            8.4.6   Setup movie duration: press OK to toggle 10/20/30sec
            8.4.7   Setup the motion detect sensitivity: press OK to toggle Hi, Mid and low

Set Up Screen

Advance Set Up

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
	Video clip duration – 10/20/30s		Movie quality - D1/QVGA
	No of snap shots – 1,3		Sensitivity – Hi/Mid/Lo

Photo Management

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

Keys Operation matrix

	Preview	Playback	Playing AVI
Mode	Change to playback	Change to preview	-
Menu	Enter setup Menu	Enter file delete menu	-
UP	MD on off	To turn on off OSD	-
DN	JPG/AVI	Enter to play AVI	Pause and resume
LF	-	Previous file	-
RT	-	Next file	Fast forward
SNAP	Snapshot or video capture	-	-
DISP	-	Select folder	-
OK	-	-	Stop

	Set up Menu	Date time setting	Select folder
Mode	-	-	-
Menu	Quit menu mode	-	-
UP	-	Increase digit	Previous folder
DN	-	Decrease digit	Next folder
LF	Select item	Cfm and shift to previous	Previous page
RT	Select item	Cfm and shift to next	Next page
SNAP	-	-	-
DISP	-	-	-
OK	Toggle the setting	Cfm and quit	Select current folder