Description

This is a very simple recorder for video, specially designed for vehicle application. It uses a sophisticate compression engine and high dynamic range image sensor to provide excellence HD video image in small file size. The video clip will be saved in SDHC and the recording time will be 24Hr for 16G. With the special technology which prevents data corrupt due to the power failure, it is perfect for evident camera.

Features

- Video format HD(1280x720), 12fps
- HDR image sensor
- Seamless recording
- Endless recording and rolling over
- Support SDHC
- File size 12MB/min (~16G/day)
- Power on to start recording
- Proprietary data format
- Custom player for PC
- No file corruption due to power failure
- LED to indicate system status
- RTC with date time info support

System Block Diagram
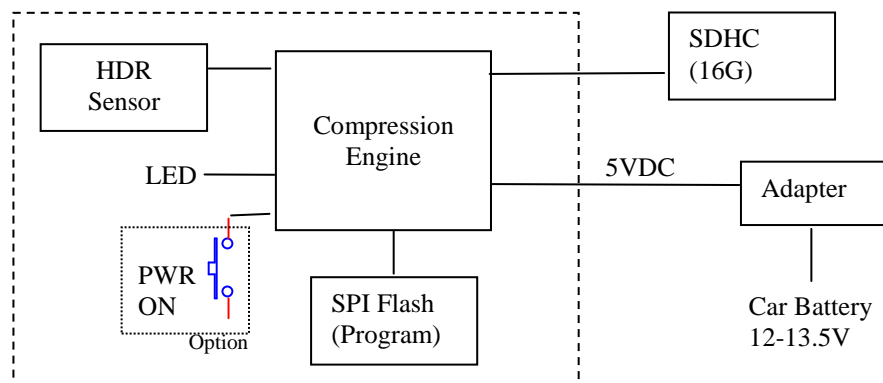
Operation

1. Insert microSD card. There is no memory on board, if there is no memory card existed, the module doesn't work. Capacity of 4G and above is recommended.
2. Apply regulated 5VDC to the module. Use power adapter of 1000mA is recommended.
3. It will start recording immediately after power up. If card full, it will over write the oldest data and keep recording until power remove.
4. During recording, status LED will be flashing to indicate the module is working normally.
5. Playback: pull out the SD card and play it in PC using custom player software.

PC Program operation

1. Preparation: get the player, install in a folder eg. 131player
2. Plug micro SD card in adapter and connect it to PC. If the PC/NB accept SD card slot, no need to use USB to SD adapter. Note that videos are saved without FAT system. Don't open it in my computer, otherwise a format disk window popup.

3. Click C131x.exe to open the program. The below user interface will be shown. Note that this AP is suited for several modules, some functions may not apply to this module C13101.
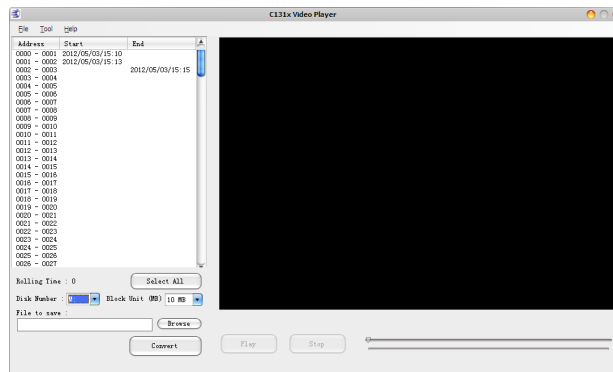

Explanation : content of the SD card are listed in the left part of window.
1. Address: starting with 0000-0001, each row is 10M by default. User can change it in Block Unit.
2. Start: the starting time of a clip video.
3. End: the end time of a clip video. Please note that only one end time will be displayed. One can imagine the second start time is following the end of previous clip, no space to show exact end time.
4. Rolling Time: if card full, it will over write the oldest data and keep recording. This shows how many times the SD card has been re-written.
5. Disk Number: please select the right disk location, if the PC/NB has different external disks connected.
6. Block Unit: change block unit. I.E. 200M means each row is 200M bytes.
7. File to save: click browse to select path and name for saving the video.
8. Convert button: convert video to H.264 and save it on computer.

Example of saving a video clip
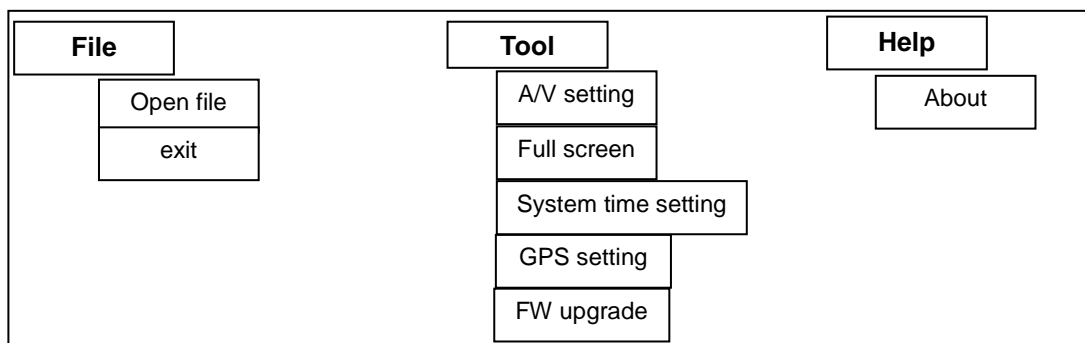1. Select blocks (ctrl or shift key may be used)
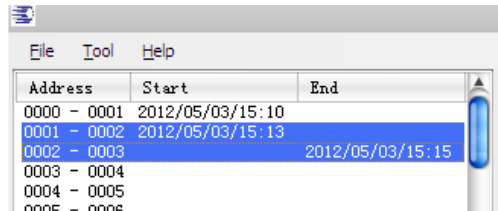
2. Click Browse button to select file path.
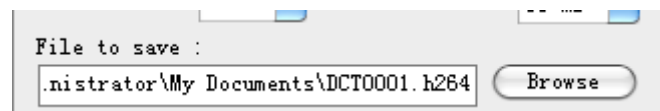
3. Click Convert button. A window pops up when the converting progress is done. Press OK to play video.

Menu explanation

<u>File</u>
Play local videos
This player can play local video too. Click File->open file, then select a video. Press play button on the bottom to start playing.

<u>Tool</u>
1.   A/V setting. This setting is applied to the opened video file.
1.1 Frame rate: can be set here for playing faster or slower, not follow the original video file.
1.2 Audio: not relate to this module
1.3 Resolution: for video file generate by this module, pls set to 1280x720
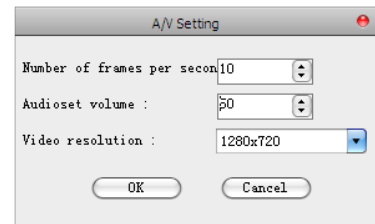
2.   Full screen
When video is playing, press it to turn on full screen. Double click left mouse back to normal video.

3.   System time setting: This needs RS232 adapter cable to connect the module for setting.
3.1   Connect J13 UART port to computer com port thru RS232 adapter cable
3.2   On module, turn switch S1 to engineer mode
3.3   Power on module
3.4   Input date/time or get system time. Click Set time to set the RTC on the module
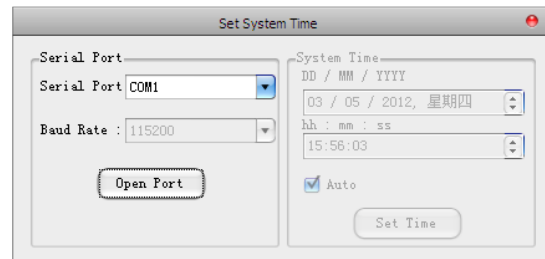
4.   GPS setting: Not available in this model

5.   FW upgrade: Not available in this model

<u>Help</u>
About: contain software and copyright information.

<u>Known bug</u>
When using multi card reader, some functions may not auto refresh, like changing block unit.

Module Specifications

Board Dimension	Main board 50x60mm
	Camera board 35x20.5mm
Storage	External micro SDHC card up to 16GB
Lens FOV	152° in diagonal, 132° in horizontal
Video Capture	1280x720 (~12 fps)
	Unlimited capturing time
Power	DC 5V/AAx4/Li-ion 3.7V

Electrical Characteristics

Parameter	Min.	Typ.	Max	Unit
Operation Voltage	3.7	5	6	V
Operation current	436	450	485	mA

Options – need to be specified before ordering.
1.   Power Control option
       By default, it turns on module and start recording once power applied
       Option: press button to power on the module, press again to turn off. In this case, power is always connected.
2.   Power source option
       By default, it accept 5VDC input
       Option: use Li-ion Battery for portable use (charging circuit build in).

Mechanical Dimension
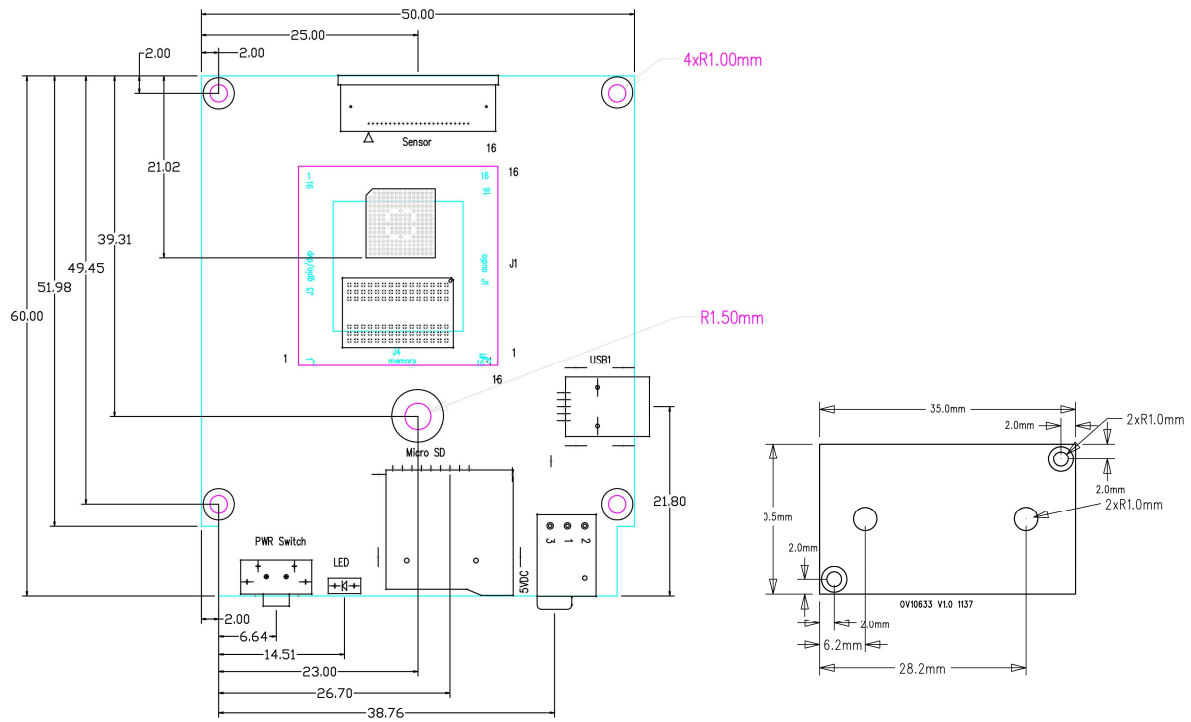
Connectors and functions description

S1	MODE	Switch between setup and normal mode
SW1	PWR	Reserve for manual power on. Default NC.
J5	SEN	Interface to CMOS sensor
J6	SD	For microSD card
J8	BATT	For 3.7V Li-ion battery in (option)
J9	5VDC	Power input, 3mm plug with center positive
J13	UART	For RS232 Adapter cable

rev 1.0