CHARMING

SINCE 2003

CHARMING Co., Ltd.

PRODUCT
USER' S MANUAL

CM2S 2IN1

VIDEO PROCESSOR

1. *Product Overview*

Product Introduction

CM2S is an easy-to-operate and feature-rich device that specially developed for LED displays. It supports high-definition multi-type interface input, integrates professional display control technology and powerful video processing capabilities, and it simplifies the scene environment to build a video processor.Using high-performance image processing chip; with advanced interlaced image adaptive processing technology and ultra-clear noise reduction engine,eliminating video image motion smearing and jagged phenomenon, the video image enhancement technology makes the image clearer and more detailed, rich in details, and full of colors , Image quality is stable.

Product Features

It has 2 channels of gigabit network port output to directly connect to the receiving card, simplifying the on-site environment construction.

It is not necessary to debug the display screen through a computer, and the display screencan be simply debugged using CM2S.

The USB ports on the front and rear panels support USB playback, plug and play.

The input channel can be switched seamlessly.

Application Scenarios

It is suitable for many application scenarios such as small and medium-sized LED displays in shopping malls, hotels, exhibitions, TV studios, etc.

2. Function Introduction

It supports USB play, the video and picture could be played together.

⁓ *It supports 3 zoom modes: Full Screen Zoom, Point-to-Point Display and Custom Zoom.*

⁓ *It supports seamless switching or fade-in and fade-out between multiple signal inputchannels to enhance and present professional-quality presentation pictures.*

⁓ *It supports the quick screen connection, with very simple operation,the screen configurationcould be completed.*

⁓ *The intuitive LCD display interface on the front panel and clear button light promptssimplify the control operation of the system.*

⁓ *It support to create 8 user scenes as templates, save them and call them directly, which isconvenient to use.*

⁓ *It supports 2 Ethernet Port Outputs, the maximum loading capacity could reach up to 1.3million pixels.*

⁓ *it supports to adjust the positions and sizes of the window and also the window capturefunction is supported.*

⁓ *it supports external independent audio input and output.*

⁓ *The output resolution could be user defined(custom the resolution)*

⁓ *The Input EDID could be user defined (customized)*

⁓ *It supports the synchronous switching of the video and audio.*

⁓ *It supports the switching of the partial or Full Screen.*

⁓ *It supports to have just one-click to get the black screen.*

3. Product Parameters

Basic Parameters

Loading Capacity	Single Network Port	650 thousand pixels
	The entire unit	1.3 million pixels

Output Resolution	*Widest：3840/ Highest：1920*
Input Resolution	*The maximum resolution it could support：1920X1080@60HZ*

Hardware Introduction

Front Panel

#	*Keys*	*Illustrations*
1	*ON/OFF*	*Power ON/OFF*
2	*LCD Display*	*To display the current status of the device and to have the menu settings.*
3	*Knob*	*1、In the main interface,press the knob to enter the menuoperation interface；* *2、In the menu operation interface,rotate the knob to choosethe menu, press the knob to select the current menu or enter its sub-menu.* *3、 Once the menu that is with parameters selected, you could rotate the knob to adjust the parameters, and make sure to double press the knob to confirm.*
4	*Esc*	*Return(ESC)/Cancel the current menu or operation.*
5	*SCALE*	*Full Screen Scale Shortcut Key*

▶∥

6	HDMI	*Input Source Key Description：*
		HDMI：HDMI Source Input Key，when it is on U-Disk playing ,to press " "，to pause or play the file.
		DVI：DVI Source Input Key，when it is on U-Disk Playing, to press the " "，to select to play the previous file.
		VGA：VGA Source Input key，when it is on the U-Disk playing to press the " "，to selcet to play the next file.
		USB：External Media Playing，U Drive Disk Playing Input

		Source,，when it is on U-disk playing, the "■", means stop playing. *CVBS：CVBS Source Input Key。* *Signal Source Input Status： The indicator light keeps on indicating that there is a signal source connected and in use. The flashing indicator indicates that the interface is in use but there is no signal source.* *When the indicator light is off, the signal source is not used.*
7	*Black*	*One Click to get the Black Screen Shortcut Key*

Real Panel
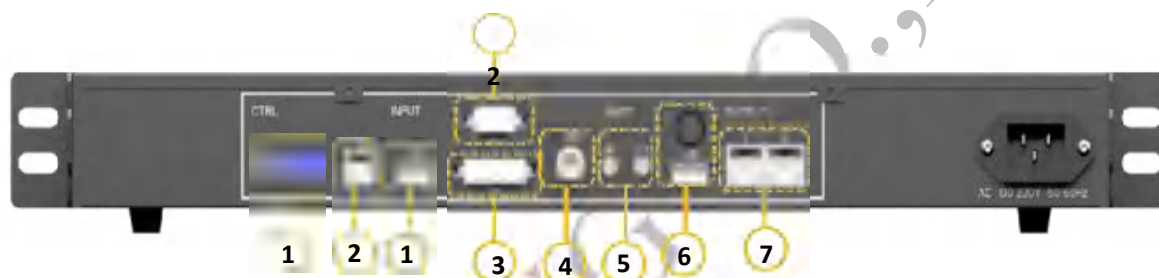
Input Ports			
#	**Ports**	**Unit**	**Illustrations**
1	*HDMI*	*1*	*HDMI1.3 Standards，the maximum resolution it could support: 1920×1080@60Hz. It is downwards compatible and support HDCP1.4。*
2	*VGA*	*1*	*the maximum resolution it could support: 1920×1080@60Hz. It is backwards compatible*
3	DVI	*1*	*the maximum resolution it could support: 1920×1080@60Hz. It is backwards compatible*
4	*CVBS*	1	*PAL/NTSC Standards Video Input.*
5	*AUDIO IN*	1	*3.5mm Audio Interface.*

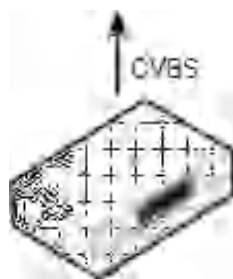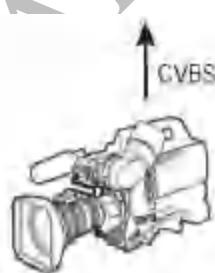| 6 | USB | 1 | *1×USB 2.0 Interface， connecting to the U-disk， it supports 1080p@30fps Video files。 The U-Disk File System Supports NTFS、FAT32 and FAT16，but the exFAT （FAT64）is not supported. Image Formats：jpg、jpeg、png and bmp。 Video Encoding： MPEG1/2， MPEG4，* |

| | | | Sorenson
H.263，H.263，H.264(AVC1)，H.265(HEVC)，RV30/40，Divx，Xvid。
Video Bit Rate：Below 4000
Audio Encoding ： MPEG1/2 Layer I， MPEG1/2 LayerII， MPEG1/2 Layer III，AAC-LC，VORBIS，PCM and FLAC。 |

Output Ports

#	Port	Unit	Illustration
7	Network Port	2	2 Ethernet Port Output,directly connecting to the receiving card.
8	AUDIO OUT	1	3.5mm Audio Port It supports the audio channel：3.5mm audio channel、HDMI、USB

Control Ports

#	Ports	Unit	Illustration
1	RS232	1	Debug Series Connection Port
2	USB-B	1	USB Port

Product Specifications

Operation Menu

Main interface After the processor is turned on, the LCD screen displays

the main interface as follows:
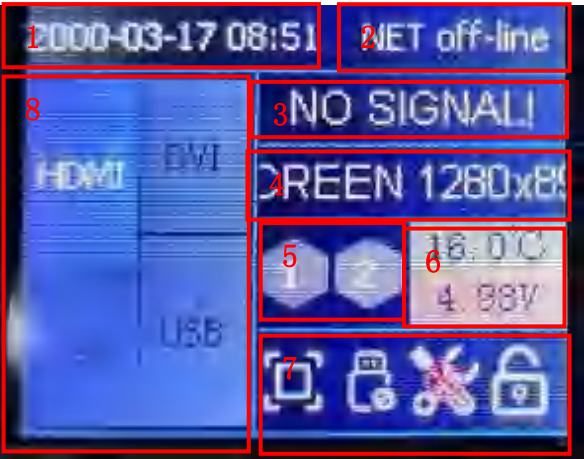
#	Illustration
1	Real Time
2	Current display interface
3	The input resolution of the currently selected input signal source;: No signal!
4	Sending card image capture resolution
5	Number: indicates the serial number of the network port Indicates that the receiving card is connected Indicates that the receiving card is not connected
6、7	Function Status
	Icon	Illustration
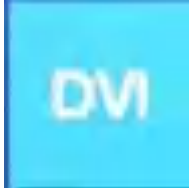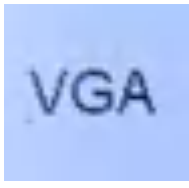
		Real-time temperature monitoring of equipment
		Real-time power monitoring of equipment
		Processor brightness value
		Timing brightness on
		FULL SCREEN DISPLAY
		1:1 Pixel to Pixel Display
		Screen freezes off
		Screen freezes on
		U disk is connected

		U disk is not connected
		The keys are not locked
		The Keys are locked
		Stop play
		Pause playback
		Previous
		Play

		Next

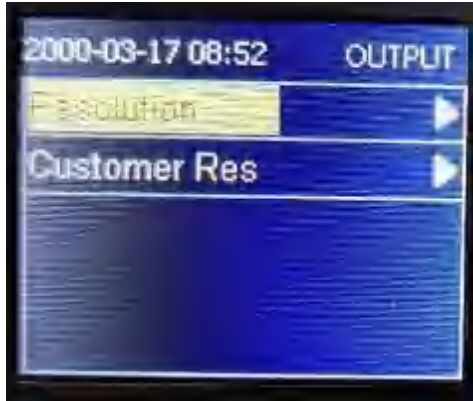| 8	Input Signal Source
	: *Blue background indicates selected*
	: *Gray background means not selected*

Main menu

In the main interface, press the knob to enter the menu operation interface, press the knob to enter the sub menu, and press ESC to return to the previous level.

Output Resolution Setting

Enter the "Output" menu, as shown in the figure below:

Common resolutions are 1024x1280 60HZ, 1280×720 60HZ, 1366×768 60HZ, 1440×900 60HZ, 1280×1024 60HZ, 1680×1050 60HZ, 1920×1080 60HZ, 1920×1200 60HZ, 2048x1024 60HZ, 2304x1080 60HZ, 2560x1080 60HZ, 3840x640 60HZ, 1080x1920 60HZ. When actually applied to the LED display screen, we can choose a preset output resolution larger than the LED screen resolution, or set it to an output resolution that is just the size of the LED display screen resolution.

For example, we use a desktop computer with 1920X1080 resolution monitor, the graphics card output is set to copy or extend 1920X080 resolution, DVI cable output to the video processor, the LED screen resolution is 1344X704, use 1 image to send and load, how to set ?What about the LED video processor parameters?

The following describes the general setting method: Operation method:

First of all, the interface of each hardware device is normal and the input and output connections are correct. I will not introduce it in detail here.

The first step is to set the output resolution, the specific operation: main menu-"output display"-"resolution" select a preset resolution larger than 1344X704, such as "1366X768, 1680X1050, 1920X1080" are all OK, apply;

The second step is to set the full-screen display, that is, the entire desktop of the computer is zoomed and displayed on the LED screen. Specific operations: main menu-"output display"-enter "window zoom" and change the horizontal width to 1344 and the vertical height to 704;

The third Step, set the partial display, press the "SCALE key" to switch the full screen/partial screen (the default is 1:1 point-to-point output);

The fourth step, set the parameter as a template, the specific operation: main menu-"template selection "Save, select 1 template to save.

Custom resolution

When the output resolution that meets our needs is not available in the common output resolutions, such as 1920X1280 size, then the resolution must be customized. The specific operation: main menu-"output display"-"custom resolution", set the screen width Set it to 1920, screen height 1280, refresh rate 60, and application.

Image

Image Scaling

It means that the image output by the video processor is displayed on the full screen on the LED display. If the resolution is exactly the same, there is no need to set the "window zoom" step; if the resolution is different, you need to set it and display the image on the LED screen. It will be reduced or enlarged, just adjust the horizontal start, vertical start, horizontal width, and vertical height to the image size we need.

Input interception(Capturing)

A certain part of the output image of the video processor is displayed in full screen on the LED display. The system defaults to the "off" state (the following parameter adjustment items are grayed out and cannot be modified). Only when the state is "on" can the function adjust the parameters effectively. Turn on the interception function. The screen parameters we will intercept are such as "horizontalstart, vertical" Start, image width, image height" are set.

Image Properties

Enter the "Image Properties" menu, as shown in the figure below:

Brightness, *adjust the output image brightness value, the system default is 50, 0-100 can be set;*
Contrast, *adjust the output image contrast value, the system default is 50, 0-100 can be set;*
Color temperature, *adjust the color temperature mode of the output image, the system default is Normal Color temperature, and "cool color, warm color, custom" can be set.*
When the color temperature is customized, you can manually adjust the red, green, and blue values;
saturation, *adjust the saturation value of the output image, the system defaults to 50, 0-100   Can be set;*
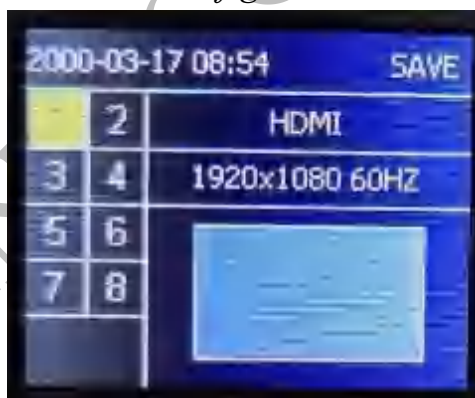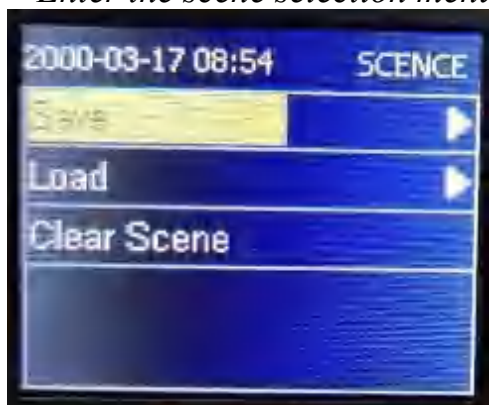**Sharpness**, *adjust the sharpness value of the output image, the system default is 20, 0-64 can be set;*
Hue, *adjust the tone value of the output image, the system default is 50, 0-128 can be set.*

Scenarios

Enter the scene selection menu, as shown in the figure below:
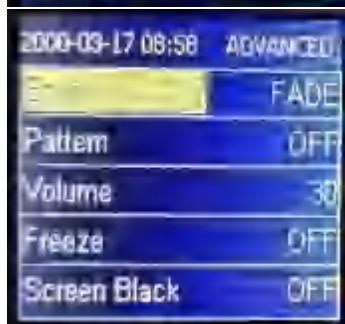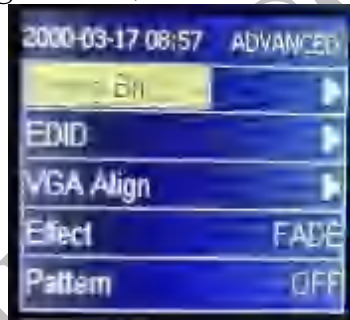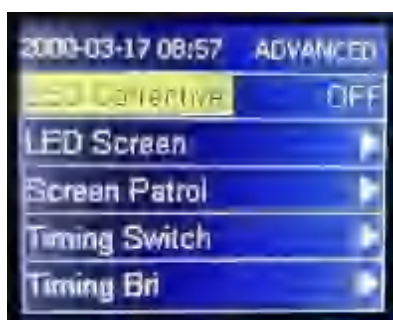

Here, we can save and load the parameters set by the video processor, including the input signal, input resolution, output resolution, position offset, zoom, interception and other information to save as a template, which is convenient for next use. The system has 8 templates for users to save.
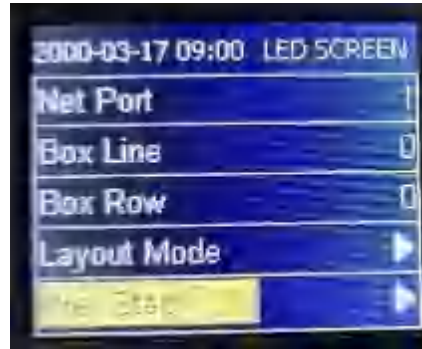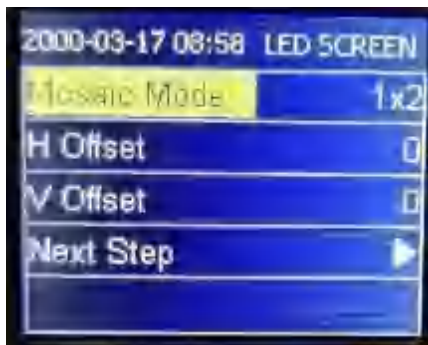
Advanced

Enter the "Advanced Settings" menu, as shown below:

There are 10 function settings in the advanced settings: "LED, EDID management, VGA correction, volume, freeze, switching effect, test mode, black screen, timing brightness, automatic brightness", which are introduced below.

LED

Enter the "LED" menu, as shown in the figure below:

1. *Select the network port arrangement mode "1X2, 2X1".*
2. *Set the number of rows and columns of each network port box. Eight common wiring methods can be selected for the wiring method.*

Timing switch

Enter the "timing switch" menu, as shown in the figure below

1. *Set the number of time periods, up to 5 segments.*
2. *Status: On means to turn on the timing switching function; Off means to turn off the timing switching function*
3. *Port: Switch the input signal source*

3. Time: Set the switching time

4. Times: Switch times within the set time period

Timing brightness

Enter the "timing brightness" menu, as shown in the figure below:

1. Set the number of time periods, up to 5 segments.

2. Switch: On means to turn on the timing switching function; off means to turn off the timing switching function.

3. Brightness: switch the brightness value

4. Time: set the switching time

5. Times: switch times within the set time period

EDID Management，

Enter the "EDID Management" menu, as shown below:

1. Input signal source: EDID of HDMI and DVI input signal sources, including resolution size and refresh frequency parameters. The settings are described below.

2. Common EDID: Enter the sub-menu, select the common EDID "1366x768_60HZ, 1440x900_60HZ, DVI_1080P, HDMI_1080P" to quickly set;

Custom EDID: enter the sub-menu, you can set "EDID type, image width, image

height, refresh rate", the application takes effect .

VGA Calibration

Enter the "VGA Calibration" menu, as shown in the figure below:

There are two modes: "Auto" and "Manual". In automatic mode, the following "horizontal start, vertical start, image width, image height, phase" setting parameters do not work; only in manual mode, The parameters set below are valid.
When the connected VGA signal is output by the video processor in automatic mode by default, if the image output to the LED screen is normal, there is no need to modify it; if the image output to the LED screen is missing, offset, etc., then Need to modify the parameters manually.

Switch to "Manual" mode, visually inspect the image on the LED screen, adjust the "horizontal start, vertical start, image width, image height" parameter values through the knob, modify one by one, set when the visual image is displayed to the appropriate position.

Phase is to improve the output to the LED screen when there is an abnormal display (such as flash point, blurry), and the value can be adjusted from 0 to 2500.
***Switching effects**, special effects for switching between input signals, the default "fade in and fade out" effect, you can switch the "seamless switching" effect.*
***Test mode**, default "off" state, switch to "white, red, green, blue, black" and other test screens in turn.*
***Volume**, set the numerical value of the output audio volume, the default is 40, and it can be set to 0-100.*
***Freeze**, the default "off" state, through the knob operation, when turned to "on", the output screen is frozen uncontrolled, and then turned to "off", the output screen continues to display.*

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Black screen, *default "off" state, switch to "on" black screen state.*

U Drive Disk
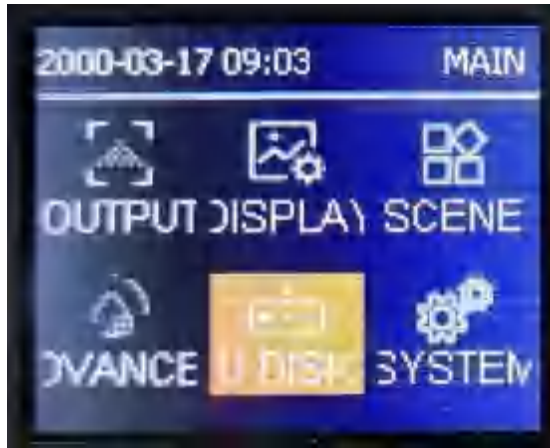
To use the U disk playback function, first insert the U disk into the USB port of the video processor, and then press the "USB" signal switch button on the front panel to enter the U disk signal state. At this time, we enter the "U disk playback" from the main menu. As shown below:

If a U disk is inserted into the processor without pressing the "USB" signal switch button on the front panel, you want to enter the "U Disk Play" menu through the knob and press the OK button. If you can't enter the U disk to view and play files, it will pop up. The prompt information is as follows:

Press the "USB" button on the front panel to switch to the U disk information. If you press the "USB" button again, you can play the files in the root directory of the U disk, such as "pause/play, previous song, next song, stop" function , At this time, pressing the other "HDMI, DVI, VGA, CVBS" signal switching function is invalid, press "Esc" to exit the U disk playback operation.
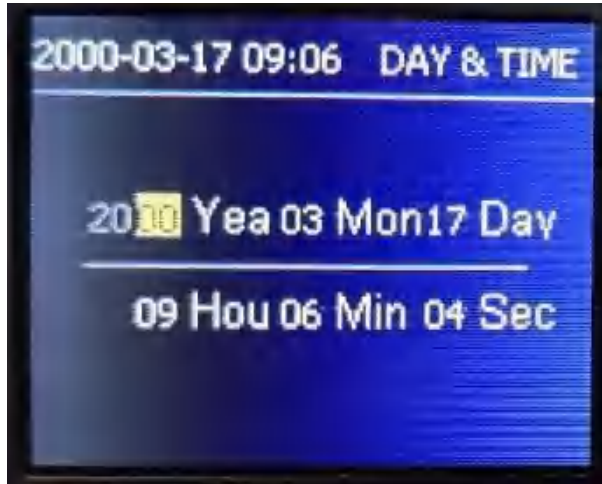
System

Version Information
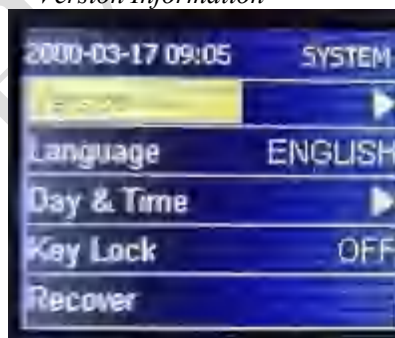
That is, the version information of the current video processor

system program.

Language: *The default system language is "Chinese", you can switch to "English" language, press OK to confirm.*

Time Settings

Select the corresponding number and turn the knob to increase or decrease the number. After setting, press the knob to confirm.

Key lock: *Turn on the key lock function to prevent misoperation and lock the front panel key functions. The default "off" state, select the "on" state, and then press the OK button to confirm, you can set to automatically lock without operation for 1-3 minutes; unlocking method: press the OK button and there will be a prompt, then press any button to unlock.*

Factory settings: *Press the OK key to pop up the prompt message "Are you sure to restore the factory settings? (Confirm/Return)"; press the OK key to confirm, and press the Esc key to return.*

Upgrade processor: *Put the V56 upgrade program into the U disk, insert the USB port, select "Upgrade Processor" until the upgrade automatically restarts and enter the status interface, at which time the upgrade is complete.*

Scan code attention

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