LED 视频处理器

LED Video Processor

使用说明书 User Manual V1.2

⚠ 使用本 LED 视频处理器之前，请先仔细阅读此使用说明书并将之妥善保存以备日后参考。

Before using this LED Video processor , please read this manual carefully and preserved for reference in the future.

MAGNIMAGE

LED-500C

声明

未经本公司书面许可，任何单位或个人不得擅自仿制、复制、誊抄或转译本手册部分或全部内容。不得将本手册以任何形式或任何方式（电子、机械、影印、录制或其他可能的方式）进行商品传播或用于任何商业、营利目的。

本手册所提到的产品规格和资讯仅供参考，如有内容更新，恕不另行通知。除非有特别约定，本手册仅作为使用指导，本手册中的所有陈述、信息等均不构成任何形式的担保。

目录

简介

感谢您购买本公司的 LED 视频处理器。希望您能够尽情体验该产品的卓越性能。该 LED 视频处理器的设计符合国际、行业标准，但如果操作不当，仍然可能造成人身伤害和财产损失。为了避免设备可能带来的危险，并尽可能从您的设备中获益，在安装、操作产品时，请遵守本手册中的相关使用说明。

商标信用

- VGA 和 XGA 是 IBM 公司的注册商标。
- VESA 是视频电子标准协会的商标。
- HDMI、HDMI 标志以及 High-Definition Multimedia Interface（高清晰多媒体数字接口）都是 HDMI Licensing LLC. 的商标或者注册商标。

即使并未特别说明公司或者产品商标，商标也已经得到了充分的认可。

关于软件

不得对本产品上安装的软件进行更改、反编译、反汇编、解密或者进行反向工程，以上行为均属违法。

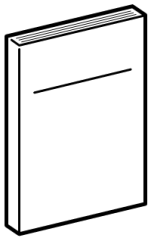
特性

- 支持超高输出分辨率、超高行频分辨率。
- 单机信号输入通道快速切换。
- 多机连接实现切换台功能，实现多个信号输入通道之间的瞬间切换或者淡入淡出。
- 图文叠加、抠图合成功能，方便实现字幕叠加、图像合成效果。
- 工作模板的多机快速恢复功能，使您方便的在各种应用场合下快速切换。
- 输入信号热备份功能，让您不再为演出中输入信号突然丢失而尴尬。

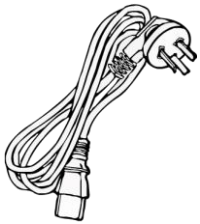
启用指南

随附配件

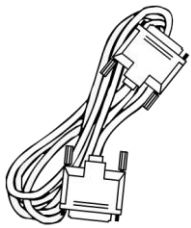
说明书



电源线



DVI 信号线



合格证

M3 螺钉 ×4

发送卡螺柱×4

端口扩展

名称	对应产品型号	说明
扩展外部 DVI 模块	LED-500CD	外部输入端口为 DVI 接口
扩展外部 SDI 模块	LED-500CS	外部输入端口为 SDI 接口 ,带 1 路环出
扩展外部 VGA 模块	LED-500CV	外部输入端口为 VGA 接口

安全须知

- 本产品电源的输入电压范围是 100～240VAC ,50/60Hz ,请您使用正确的电源。
- 当您要连接或者拔除任何信号线或者控制线时 ,请确认所有的电源线已事先拔掉。
- 当您要加入硬件设备到本产品中或者要去除本产品中的硬件设备时 ,请确认所有的信号线和电源线已事先拔掉。
- 在进行任何硬件操作之前，请事先关闭 LED 视频处理器电源，并通过触摸接地表面来释放您身上的静电。
- 请在干净、干燥、通风的环境中使用，不要将本产品放入高温、潮湿等环境中使用。
- 本产品为电子类产品，请远离火源、水源以及易燃、易爆的危险品。
- 本产品内有高压部件，请不要打开机箱或者自行对本设备进行维修。
- 如发现有冒烟、异味等异常情况，请立刻关掉电源开关，并与经销商联系。

功能介绍

概述

LED-500C 系列产品是针对 LED 大屏幕显示系统开发的视频处理器，采用了业内顶尖的图像处理芯片，内部 12 位数字处理，图像更清晰，色彩更丰富。

先进的隔行运动图像自适应处理技术，消除视频图像运动拖尾和锯齿现象，对于普通的 PAL/NTSC 视频，输出图像更加清晰细腻，对于高清的 1080i 信号，输出的图像细节丰富，色彩饱满，图像质量处于业界领先水平。

先进的图像缩放技术，支持数十种输出分辨率，单机最大可输出 2304×1152、2560×816、1920×1200、1536×1536 的分辨率和最高 120Hz 刷新频率，并且可以根据 LED 显示屏的大小对输入的图像进行逐点缩放。

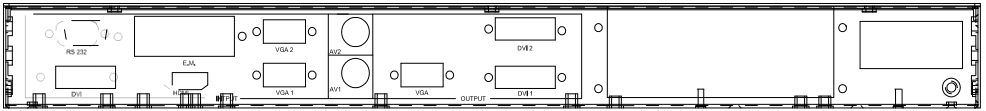
智能化的超大尺寸 LED 显示屏无缝拼接技术，用户只需要进行简单的设置，便可以实现多发送卡的图像拼接，最高支持 24576×24576 像素点阵的 LED 显示屏；独特的同步随动技术，保证高速运动的画面流畅，无错位、拖尾现象。

完备的视频图像输入接口，包括 2×VGA、1×DVI(可扩展为 2×DVI 同时输入)、1×HDMI 、2×Video(PAL / NTSC)、1×SDI（可选），支持全高清信号输入，可以和多种视频设备互联。支持 RS232 控制。

支持不同输入信号源之间的无缝切换和画中画功能。

整机纯硬件架构，工作稳定、可靠。

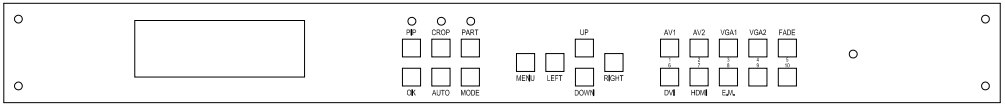
后面板图示：



video input ports	
AV1~AV2	2 路视频输入端口
VGA1~VGA2	2 路 VGA 输入端口
DVI	DVI 输入端口
HDMI	HDMI 输入端口
E.M.	扩展输入端口

Video output ports	
DVI1~DVI2	2 路 DVI 输出端口
VGA	VGA 输出端口
SDI Out	扩展输出端口

前面板图示：



Buttons introduction			
PIP	画中画功能开关快捷键	1 / AV1	数字键 1，视频输入端口 1 选择键
CROP	图像截取功能开关快捷键	2 / AV2	数字键 2，视频输入端口 2 选择键
PART	LED 部分或全屏显示画面切换快捷键	3 / VGA1	数字键 3，VGA 输入端口 1 选择键
OK	确认键	4 / VGA2	数字键 4，VGA 输入端口 2 选择键
AUTO	对输入图像的显示位置进行自动调整	5 / FADE	数字键 5，淡入淡出功能快捷键
MODE	呼出模板加载快捷菜单	6/ DVI	数字键 6，DVI 输入端口选择键
MENU	主菜单键，返回上级菜单功能	7 / HDMI	数字键 7，HDMI 输入端口选择键
LEFT	菜单选择/操作键，左键	8/ E.M.	数字键 8，扩展输入端口选择键
UP	菜单选择/操作键，上键		
DOWN	菜单选择/操作键，下键		
RIGHT	菜单选择/操作键，右键		

技术规格

输入指标		
端口	**数目**	**分辨率规格**
AV	2	PAL/NTSC
VGA	2	VESA 标准
DVI	1+1(固有 1 路 ,可扩展 1 路)	VESA 标准 （支持 1080i 输入 ）
HDMI	1	EIA/CEA-861 标准 , 符合 HDMI-1.3 标准
SDI	1（扩展模块 ）	480i、576i、720p、1080i/p（3G SDI ）

输出指标		
端口	**数目**	**分辨率规格**
VGA	1	1024×768/60Hz/75Hz/85Hz/100Hz/120Hz 1280×1024/60Hz 1440×900/60Hz 1600×1200/60Hz 1600×1200/60Hz– Reduced 1680×1050/60Hz 1920×1080/60Hz/50Hz 2560×816/60Hz，2048×640/60Hz 1920×1200/60Hz 2304×1152/60Hz 2048×1152/60Hz 1024×1280/60Hz 1536×1536/60Hz
DVI	2	
SDI 输入环出	1	480i、576i、720p、1080i/p（3G SDI ）

整机规范	
输入电源	100～240VAC，50/60Hz
整机功耗	20W
工作温度	0~45℃
外形尺寸	（21 + 441 + 21）mm × （282 + 16）mm × （45 + 6）mm
重量	3.7 Kg

使用菜单

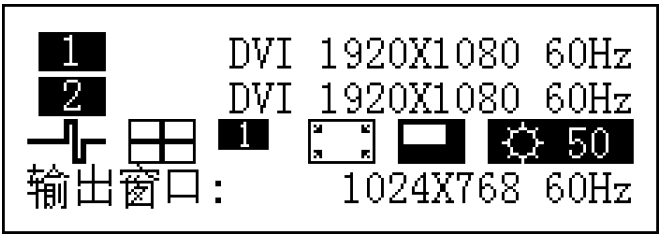
使用产品的菜单系统可以方便、直观的对本机进行设置，以满足用户使用要求。

LED-500C 采用了一块高亮高对比的液晶显示屏来显示整个用户菜单。在用户没有操作或者操作超时的情况下，液晶屏幕上将显示非菜单状态。若使用本机前面板的按键对本机进行设置时，液晶屏幕上将根据用户操作显示相应的菜单，以提示用户更好更快更直观的进行操作。

下面将结合液晶屏幕的显示及前面板按键，详细为您介绍 LED-500C 的菜单系统。

非菜单状态介绍

打开 LED-500C 的电源后，系统启动过程中，前面板左侧的液晶屏幕上会显示开机界面，启动完成后，屏幕上会显示出当前机器的状态，如下图所示：



上图中，共有四行内容，说明如下：

行数	说明
第一行	通道 1（主通道，也是默认通道）的端口名称及当前输入信号分辨率规格。
第二行	通道 2（副通道）的端口名称及当前输入信号分辨率规格。
第三行	状态提示区域，以若干图标表示本机的当前工作状态。 从左到右分别有六个图标区域： 1、 同步随动状态区域（拼接功能开启状态下有效） 2、 拼接状态区域 3、 双画面状态区域 4、 图像截取状态区域 5、 PART（部分或全屏）状态区域 6、 亮度等级状态区域。 详细说明见下页表格。
第四行	输出分辨率提示行，详见“输出指标”

非菜单状态下，液晶屏幕的第三行区域为状态提示区域，以若干图标表示本机的当前工作状态。各个图标的含义如下表所述：

表 1 ： 状态图标及其含义

图标	区域	名称	示意（括号内为快捷键）
	1	同步随动状态	拼接功能开启状态下，同步随动功能已成功启动
	2	等分拼接状态	等分拼接功能已开启
	2	不等分拼接状态	不等分拼接功能已开启
	3	双画面关	双画面功能关闭（PIP）
	3	双画面开[1]	双画面功能开启，通道 1 位于顶层（PIP）
	3	双画面开[2]	双画面功能开启，通道 2 位于顶层（PIP）
	4	图像截取关	图像截取功能关闭（CROP）
	4	图像截取开	图像截取功能开启（CROP）
	5	PART 功能关	PART 功能关，监视器上显示缩小的图像（PART）
	5	PART 功能开	PART 功能开，监视器上显示满屏的图像（PART）
	6	亮度等级图标	当前亮度等级，范围是 0~100（UP、DOWN）

主菜单介绍

主菜单中会出现下表中所列的各种符号，其具体含义如下表所述：

符号	说明
>>	按下“RIGHT”键或“OK”键进入详细设置页面，或者直接执行操作
▼	此页面之后还有下一页，在本页的最后一个项目上按下“DOWN”键进入下一页
▲	此页面之前还有上一页，在本页的第一个项目上按下“UP”键返回上一页

主菜单中，用户使用“MENU”、“UP”、“DOWN”、“LEFT”、“RIGHT”、“OK”这六个按键对各项目进行选择及调整。其操作是有固定模式的，请看下表：

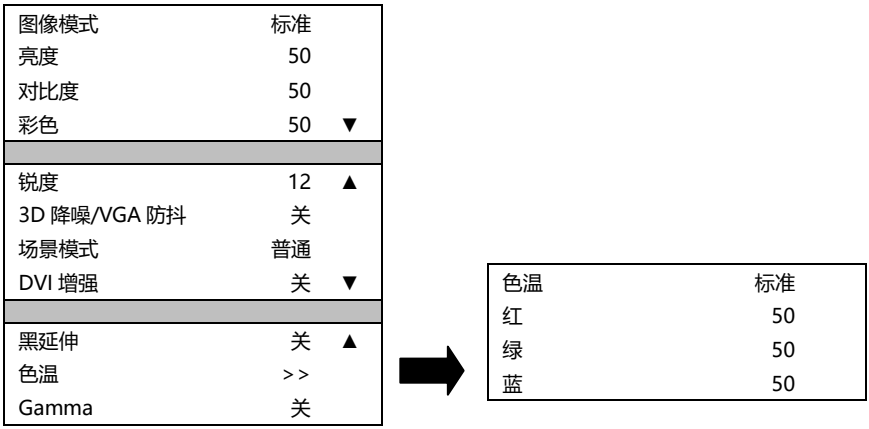
操作	按键
打开主菜单	在非菜单状态下按“MENU” 键
选择各项目	按“UP”或“DOWN” 键，遇到“▼”或“▲”符号时会有翻页动作
对参数进行调整	在项目右端为数字参数或者选项参数时，按“LEFT”或“RIGHT” 键
进入下一级菜单	当项目右端为“>>”符号时，按“RIGHT”或“OK”键
执行某具体功能	当项目右端为“>>”符号时，按“RIGHT”或“OK”键
返回上一级菜单	按“MENU”键
确认操作	在进行复位等操作时，为避免误操作，需要用“OK”键确认操作

主菜单

在非菜单状态下，按下“MENU”键，菜单系统将进入主菜单状态，液晶屏幕上显示如下图所示：

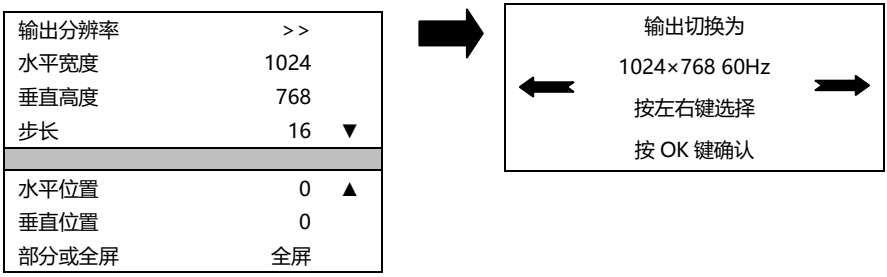
主菜单共七个子菜单项目，分为两页分开显示。按下“UP”或“DOWN”键选择上述所列的七个子菜单标题，选定后，按下“OK”或“RIGHT”键进入所选项目，按下“MENU”键返回。

图像设置子菜单



图像模式	分为“**标准**”、“**柔和**”、“**亮丽**”、“**用户**”这四个选项。
亮度	范围 **0~100**。
对比度	范围 **0~100**。
彩色	范围 **0~100**。
锐度	范围 **0~24**。
3D 降噪	通道 1 端口不为 VGA 的时候有效，分为“**关**”、“**自动**”、“**低**”、“**中**”、“**高**”这五种降噪模式。
VGA 防抖	通道 1 端口为 VGA1 或 VGA2 时有效 ,分为“**关**”、“**Level0**”、“**Level1**”、“**Level2**”、“**Level3**”、“**Level4**”、“**自动**”这六种防抖模式。
场景模式	分为“**普通**”、“**生动**”、“**电影**”、“**剧场**”、“**运动**”这五种模式。
DVI 增强	DVI 输入下，打开这个功能可以显著提高输出图像的色彩及清晰度。
黑延伸	在场景模式为“生动”、“电影”、“剧场”、“运动”模式下有效，增加图像黑色区域以强化对比度。
色温	分为“**标准**”、“**暖色**”、“**冷色**”、“**用户**”这四种选项。 仅当选择“用户”时，“红”、“绿”、“蓝”这三项的调节才有效，范围是 0~100。
	红 范围 **0~100**，色温为“用户”时有效。
	绿 范围 **0~100**，色温为“用户”时有效。
	蓝 范围 **0~100**，色温为“用户”时有效。
Gamma	控制视频处理器的输出 Gamma 值，分为“**关**”、“**2.0**”、“**2.2**”、“**2.8**”、“**-1.1**”、“**-1.2**”和“**MIG**”七个选项，其中“MIG”为本公司的 Gamma 曲线值。

输出设置子菜单



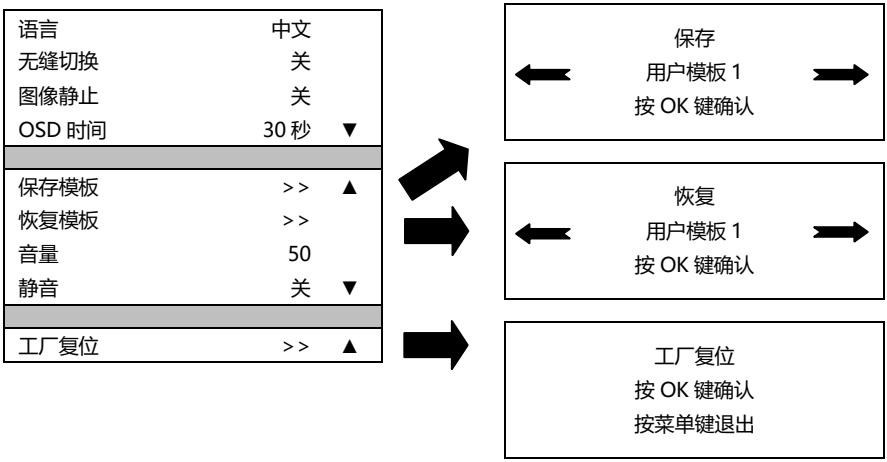
输出分辨率	LED-500C 支持 19 种输出分辨率，最大宽度 2560，最大高度 1536。 详见“输出指标”。
水平宽度	最小值为 **64** ,最大值为“**当前输出分辨率的宽度**”(如 1024×768 60Hz 当中的 1024)。
垂直高度	最小值为 **48** ,最大值为“**当前输出分辨率的高度**”(如 1024×768 60Hz 当中的 768)。
步长	默认值为 **16**，另外也可设置成 **128** 或者 **1**。
水平位置	最小值为**-16**，最大可设置为 “**当前输出分辨率的宽度**” 与 “**水平宽度**” 的**差值。**
垂直位置	最小值为**-16**，最大可设置为 “**当前输出分辨率的高度**” 与 “**垂直高度**” 的**差值。**
部分或全屏	**全屏**：即 PART 功能关。 此时 LED 屏幕上显示的是完整的节目画面，监视器上显示的是缩小的节目画面，“**水平宽度**”、“**垂直高度**”、“**水平位置**”、“**垂直位置**” 四个参数所设置的窗口参数自动生效。
	部分：即 PART 功能开。 此时 LED 屏幕上显示的是部分的节目画面，监视器上显示的是满屏的节目画面，“**水平宽度**”、“**垂直高度**”、“**水平位置**”、“**垂直位置**” 四个参数所设置的窗口参数自动失效。

用户请根据 LED 显示屏的大小（物理分辨率）设置输出分辨率、水平宽度及垂直高度。如果没有合适的输出分辨率，请选择比实际显示屏分辨率大一些的选项。

例如一块 LED 显示屏是 1152×960 的实际分辨率，在 LED-500C 的输出分辨率列表当中找不到这个分辨率，而比之大一些又与之最接近的分辨率选项是 “1280×1024 60Hz”，因此，这种情况下，请将输出分辨率设置成 “1280×1024 60Hz”。另外，还需要将水平宽度设置为 LED 显示屏的实际水平宽度，即 “1152”。同理，垂直高度应设置为 LED 显示屏的实际垂直高度，即 “960”。

注意：请慎重使用大于 60Hz 刷新率或者超高超宽像素点的输出分辨率，后端设备不一定支持该分辨率。

功能设置子菜单

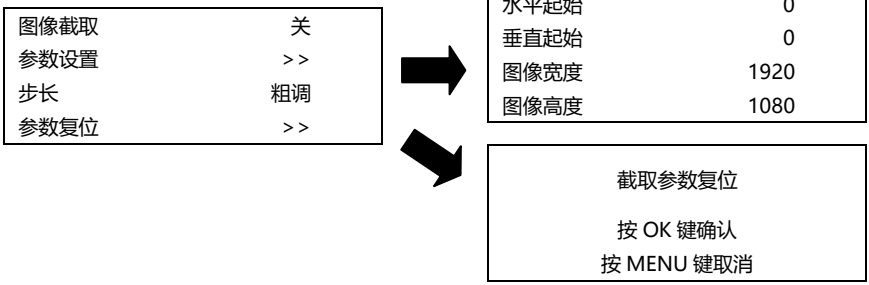


语言	LED-500C 菜单系统的显示语言，有“**中文**”及“**English**”两个选项。
无缝切换	**关**：无缝切换功能关闭，切换输入信号端口过程中先黑屏，再打开新的输入信号端口。
	开：用户切换输入信号端口的过程中，不黑屏，不停顿。 注意：AV1、AV2、AV3 和 AV4 之间，DVI 和 HDMI 之间，VGA1 和 VGA2 之间不能做无缝切换
图像静止	冻结所有两个通道的画面。切换输入端口、信号丢失、设置双画面参数等情况发生时，该功能自动失效
OSD 时间	无任何操作时，退出菜单的时间。默认为“**30 秒**”，也可设置为“**60 秒**”或“**10 秒**”。
保存模板	保存当前的用户设置。最多可以保存十组模板。
恢复模板	恢复之前保存的用户设置。
音量	范围 0~100，用于调节输出音量，默认值为 50。
静音	输出音量静音。
工厂复位	恢复出厂设置。

LED-500C 支持多机级联，在级联的状态下，本机提供了一个快速恢复多机模板的功能，即多机加载模板功能。

级联状态下，在任何一台 LED-500C 视频处理器的前面板上按下“MODE”键，所有的 LED-500C 视频处理器都会进入到一个统一的恢复模板界面，这时使用前面板上的十个数字键，即可快速的恢复多机模板。使您方便的在各种应用场合下快速切换工作状态。详情请见多机连接说明

图像截取子菜单



图像截取	对输入信号进行图像截取功能的“**开启**”与“**关闭**”，默认为关闭状态。
参数设置	**水平起始**：最小值为 **0**，最大值为“**输入信号的宽度**”减去“**64**”的**差值**。
	垂直起始：最小值为 **0**，最大值为“**输入信号的高度**”减去“**32**”的**差值**。
	图像宽度：最小值为 **64**，最大值为“**输入信号的宽度**”与“**水平起始**”的**差值**。
	图像高度：最小值为 **32**，最大值为“**输入信号的高度**”与“**垂直起始**”的**差值**。
步长	分为“**粗调**”与“**微调**”两种模式
参数复位	复位当前图像截取子菜单内的参数，复位完成后，显示完整图像。

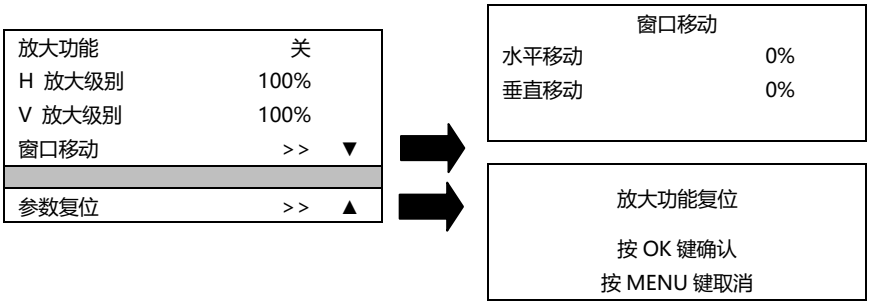
图像截取功能仅在“拼接功能”以及“放大功能”关闭，且当前输入信号有效的情况下可用。当图像截取功能不可用的时候，由主菜单进入图像截取子菜单时，菜单系统会提示用户，检查与该功能冲突的设置选项。

图像截取功能是对输入信号进行截取后，按输出设置输出到 LED 显示屏上的功能。因此图像截取的窗口大小与位置，就限制在输入信号的窗口之内。上表中参数设置内的各项，均是互相制约的。

补充说明：输入信号的宽度、高度等信息可以在“非菜单状态”下的“当前输入信号分辨率规格”显示区域中查看。

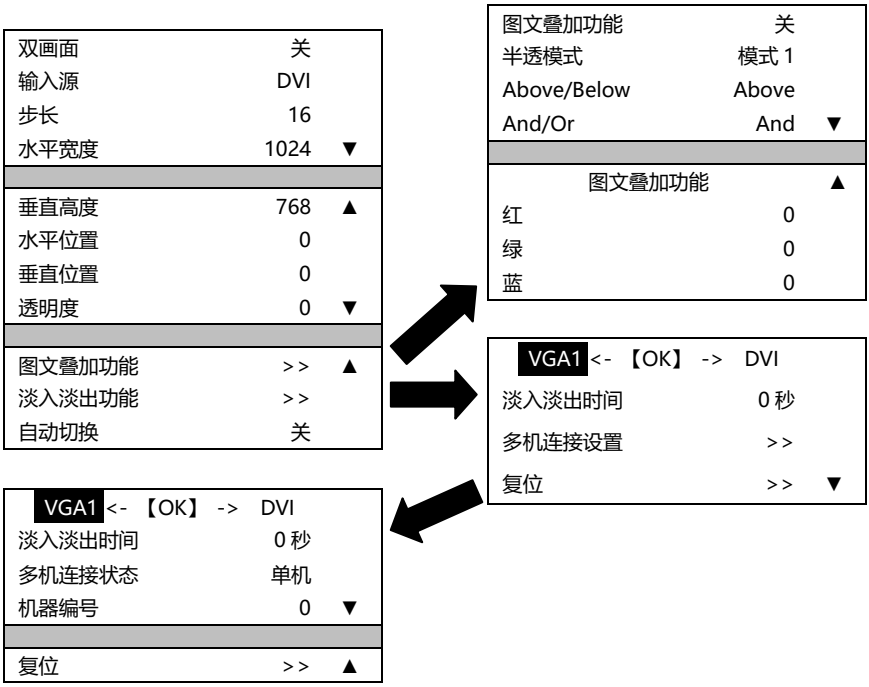
例如，通道 1 的输入信号分辨率规格为 1920×1080 60Hz，那么，输入信号的宽度就是 1920，高度就是 1080，刷新频率就是 60Hz。

放大功能子菜单



放大功能	放大功能的“**开启**”与“**关闭**”，默认为关闭状态。
H 放大级别	以百分比的形式对图像水平方向进行放大，步长 5%，最大值 **1000%**，最小值 **100%**。
V 放大级别	以百分比的形式对图像垂直方向进行放大，步长 5%，最大值 **1000%**，最小值 **100%**。
窗口移动	**水平移动**：以百分比的形式移动放大后图像的水平位置，步长 **1%**，最大值 **100%**。 当设置为 **50%**时，放大窗口的水平位置位于原始图像水平方向上的中心。
	垂直移动：以百分比的形式移动放大后图像的垂直位置，步长 **1%**，最大值 **100%**。 当设置为 **50%**时，放大窗口的垂直位置位于原始图像垂直方向上的中心。
参数复位	复位当前放大功能子菜单内的参数，复位完成后，显示完整图像。

双画面子菜单



双画面	双画面功能的“**开启**”与“**关闭**”，默认为关闭状态。
输入源	切换通道 2（副通道）的输入端口。 该项受通道 1 端口的限制，详见“双画面输入源冲突列表”。
步长	调节以下四个项目时的步长值选择，可设为“**1**”、“**16**”、“**128**”。默认为 16。
水平宽度	副通道画面的水平宽度，最小值为 **64**，最大值为“**当前输出分辨率的宽度**”。
垂直高度	副通道画面的垂直高度，最小值为 **48**，最大值为“**当前输出分辨率的高度**”。
水平位置	副通道画面左上角在“**输出分辨率窗口**”中的水平坐标。
垂直位置	副通道画面左上角在“**输出分辨率窗口**”中的垂直坐标。
透明度	副通道画面的透明度，范围是 **0~3**，0 时完全不透明，3 时透明程度最高。
图文叠加功能	图文叠加、抠图合成菜单的入口，详见图文叠加功能说明。
淡入淡出功能	淡入淡出、多机组合切换台菜单的入口，详见淡入淡出功能说明。

自动切换	**关**：自动切换功能关闭。
	画面 1 优先：若通道 1 信号有效，则通道 1 的图像位于顶层。
	画面 2 优先：若通道 2 信号有效，则通道 2 的图像位于顶层。
	信号优先：两个信号输入通道当中，输入信号有效的通道图像位于顶层。

表 2 ： 双画面输入源冲突列表

通道 1 / 通道 2	AV1	AV2	VGA1	VGA2	DVI	HDMI	E.M.
AV1	✓	×	✓ *	✓ *	✓ *	✓ *	✓ *
AV2	×	✓	✓ *	✓ *	✓ *	✓ *	✓ *
VGA1	✓	✓	✓	×	✓	✓	✓
VGA2	✓	✓	×	✓	✓	✓	✓
DVI	✓	✓	✓	✓	✓	×	✓
HDMI	✓	✓	✓	✓	×	✓	✓
E.M.	✓	✓	✓	✓	✓	✓	✓

注 1：上表中带“*”号的组合方式下，由于通道 2 没有去隔行处理，画面将会有轻微抖动现象，这种情况下，可考虑交换通道 1 与通道 2 的输入源。

注 2：在切换通道 1 输入端口时，系统以通道 1 为优先，若通道 2 的端口与通道 1 的端口互相冲突，则通道 2 的端口将自动切换到与通道 1 相同的端口下。

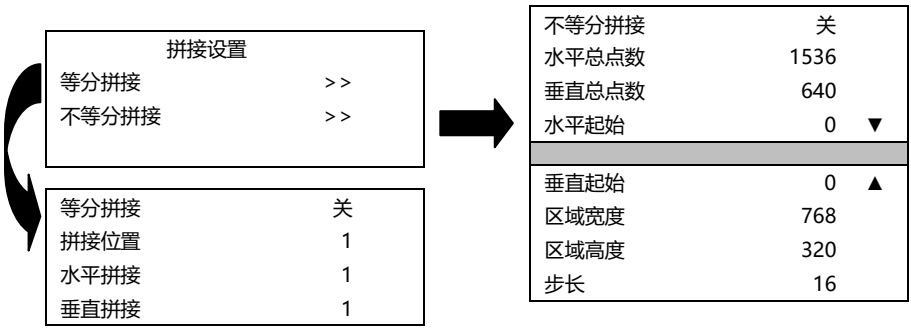
图文叠加功能	
图文叠加功能	图文叠加功能的“**开启**”与“**关闭**”。默认为关闭状态
半透模式	分为“**模式 1**”和“**模式 2**”两种模式
	模式 1：图文内容位于顶层且不透明，图文背景透明度受双画面透明度控制
	模式 2：图文内容透明度受双画面透明度控制，图文背景完全透明
Above/Below	**Above**：通道 2 图像中，若某像素色值高于设定值，则该像素为图文内容像素；反之则为图文背景内容像素。判断时须结合“And/Or”的条件
	Below：通道 2 图像中，若某像素色值低于设定值，则该像素为图文内容像素；反之则为图文背景内容像素。判断时须结合“And/Or”的条件
And/Or	**And**：所有“红、绿、蓝”三原色值都必须满足 Above 或 Below 条件
	Or：“红、绿、蓝”三原色值只需要任意一色的值满足 Above 或 Below 条件
红	红色界限，红色通道下 Above 与 Below 条件的分界点，范围 **0~255**
绿	绿色界限，绿色通道下 Above 与 Below 条件的分界点，范围 **0~255**
蓝	蓝色界限，蓝色通道下 Above 与 Below 条件的分界点，范围 **0~255**

淡入淡出功能	
淡入淡出切换	“ VGA1 × <- 【OK】 -> DVI”，如左边示例所示，“【OK】”的左侧显示的是通道 1 的输入端口名称，右侧显示的是通道 2 的输入端口名称；示例中光标位于左侧，端口名称为 VGA1，旁边的“×”表示 VGA1 端口下无有效信号输入；使用“OK”、“FADE”、“LEFT”或者“RIGHT”键，可在两个输入端口间进行淡入淡出切换；使用“输入端口选择键”可以将未高亮显示的输入通道切换到相应的端口上（不能与高亮显示的输入通道的端口相冲突，请参考双画面输入源冲突列表 使用中请注意，高亮显示的通道为当前显示的输入通道，通道端口名称边上如果显示“×”，表示该端口下无有效信号输入，实际显示则为黑屏
淡入淡出时间	淡入淡出过程需经历的时间，可为 **0 秒**到 **5 秒**。若设为 0 秒，则切换过程瞬间完成
多机连接设置	多机组合淡入淡出设置，即组合切换台功能设置，详见多机连接说明
复位	按“RIGHT”或“OK”键直接对淡入淡出功能下的参数进行复位操作

多机连接说明	
多机淡入淡出	“ VGA2 <- 【OK】 -> × DVI ”，如左边示例所示，光标位于通道 2，端口名称为 DVI，旁边的“×”表示 DVI 端口下无有效信号输入；当光标位于通道 2 时（即光标在右侧），可使用“输入端口选择键”切换通道 1 的输入端口 使用“LEFT”及“OK”键可使当前视频处理器的通道 1 作为多机组合切换台的最终输出；使用“RIGHT”键可使当前视频处理器的通道 2 作为多机组合切换台的最终输出 详细操作请参考“多机淡入淡出”
淡入淡出时间	组合切换台信号输入端口切换过程需经历的时间，可为 **0 秒**到 **5 秒**。若设为 0 秒，则切换过程瞬间完成
多机连接状态	可设置为“**单机**”、“**多机连接**”这两项
	单机：非多机连接状态，即非组合切换台状态
	多机连接：多机连接状态，即组合切换台状态
机器编号	范围 **0~7**，0 代表终端机器，其上一级机器编号为 1，再上一级为 2，以此类推 终端：担任组合切换台信号输出级的视频处理器；请参考“多机淡入淡出”
复位	按“RIGHT”或“OK”键直接对多机连接设置功能下的参数进行复位操作

注：多机连接的硬件设置请查阅“多机淡入淡出”

拼接设置子菜单



等分拼接	**等分拼接**	等分拼接功能的“**开启**”与“**关闭**”，默认为关闭状态。
	拼接位置	选择当前视频处理器在整个拼接图像中的显示位置，范围是 **1~64**。
	水平拼接	水平方向视频处理器的总个数，范围是 **1~8**。
	垂直拼接	垂直方向视频处理器的总个数，范围是 **1~8**。
不等分拼接	**不等分拼接**	不等分拼接功能的“**开启**”与“**关闭**”，默认为关闭状态。
	水平总点数	LED 显示屏在水平方向上的物理像素点数。
	垂直总点数	LED 显示屏在垂直方向上的物理像素点数。
	水平起始	当前视频处理器所控制的显示区域的水平起始位置。 以 LED 显示屏左上角作为原点（水平起始点 0）。
	垂直起始	当前视频处理器所控制的显示区域的垂直起始位置。 以 LED 显示屏左上角作为原点（垂直起始点 0）。
	区域宽度	当前视频处理器所控制的显示区域在水平方向上显示的像素点数。
	区域高度	当前视频处理器所控制的显示区域在垂直方向上显示的像素点数。
	步长	调整不等分拼接的各项参数时的步长值，可设为“**1**”、“**16**”、“**128**”。 默认值为“16”。

快捷键菜单

LED-500C 视频处理器共设置了 7 个输入快捷键，以及 6 个功能快捷键。输入快捷键分别是：“**AV1**”、“**AV2**”、 “**VGA1**”、“**VGA2**”、“**DVI**”、“**HDMI**” 以及 “**E.M.**”；功能快捷键分别是：“**PIP**”、“**CROP**”、“**PART**”、“**AUTO**”、“**MODE**” 以及 “**FADE**”。

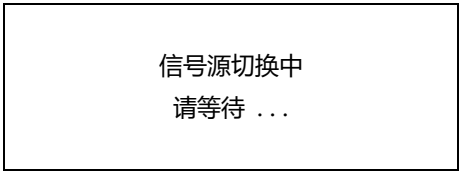
所有按键的名称以及在本机上的位置请参考 “**前面板图示**”。

注意：除非特别提及，否则所有快捷键都必须在 “非菜单状态” 下才有效。

输入快捷键

在非菜单状态下，按下任何一个输入快捷键，通道 1 的端口就会直接切换到与该输入快捷键相对应的输入端口上去。片刻之后，菜单系统便会显示出该输入通道的状态，包含端口名称，输入信号是否有效，有效的情况下还会显示出信号的分辨率规格。关于这部分内容，请参考 “**非菜单状态介绍**”。

补充说明：在 “**无缝切换**” 功能开启的状态下，按下任何一个输入快捷键，系统会在接下来的 1 秒钟左右的时间进行信号的准备和自动切换 ,整个切换延时大约 1 秒，在这段时间内，LED-500C 的菜单系统会显示等待信息，如下图所示：



当无缝切换完成，菜单系统会自动进入 “非菜单状态”。

如果用户需要切换通道 2 的端口，请进入到 “双画面子菜单” 中，调节 “输入源” 选项。

功能快捷键

PIP 功能快捷键：

该快捷键只有在“无缝切换”功能关闭的状态下可用。若在 PIP 开启的状态下，将“无缝切换”功能开启，则 PIP 功能会被强制关闭。

图标	说明
	PIP 功能关闭，通道 1 正常显示中。
	PIP 功能开启，通道 1 位于顶层，即在通道 1 的显示区域内覆盖通道 2 的图像。
	PIP 功能开启，通道 2 位于顶层，即在通道 2 的显示区域内覆盖通道 2 的图像。

CROP 功能快捷键：

CROP 功能即“图像截取”功能，仅在“拼接功能”以及“放大功能”关闭，且当前输入信号有效的情况下可用。若图像截取功能不可用，“CROP”键将不会被响应。

图标	说明
	CROP 功能关闭。
	CROP 功能开启。

PART 功能快捷键：

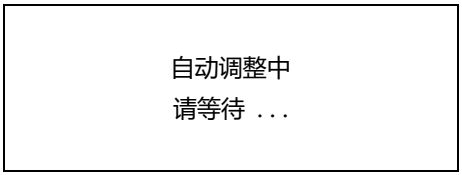
PART 功能，即部分或全屏显示画面快速切换功能。

在 LED 正常显示状态下，PART 功能应为关闭状态；在利用监视器设置播放节目等情况下，可以利用 PART 功能开启时，图像全分辨率显示的特点，使这个过程更加的快速方便。

图标	说明
	PART 功能关闭。 此时 LED 屏幕上显示的是完整的节目画面 ,监视器上显示的是缩小的节目画面。
	PART 功能开启。 此时 LED 屏幕上显示的是部分的节目画面 ,监视器上显示的是满屏的节目画面。

AUTO 功能快捷键：

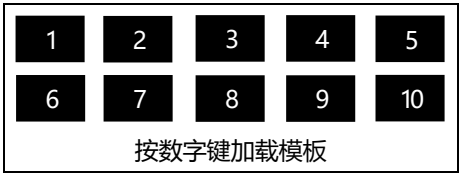
在“非菜单状态”下，按下“AUTO”键，菜单系统将显示如下提示：



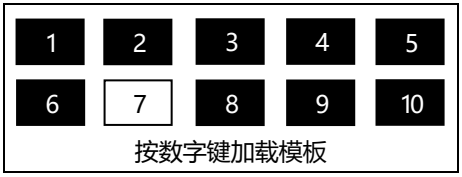
此时，系统正在自动对图像的显示位置进行自动调整，该过程完成后，菜单系统将返回到“非菜单状态”。

MODE 功能快捷键：

在“非菜单状态”下，按下“MODE”键，菜单系统将进入模板加载快捷菜单状态。如下图所示：



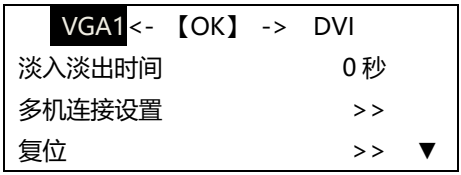
此时按下某个数字键，则相应的模板会立刻被加载到系统中，而相应的数字也会以高亮状态显示。例：



多机连接状态下，任何一台 LED-500C 视频处理器都可以作为“MODE”功能的控制器。确保所有机器都处于“非菜单状态”下，在任何一台机器上按下“MODE”快捷键后，所有机器都将进入模板加载快捷菜单状态，此时，在任何一台机器上按下某个数字键，则所有的机器都会将相应的模板加载到各自的系统中，方便您在各种应用场合下快速切换工作状态。

FADE 功能快捷键：

在“非菜单状态”下，按下“FADE”键，菜单系统将进入淡入淡出切换状态。如下图所示：



提示：

1、虽然在淡入淡出快捷菜单中可以切换底层通道的输入端口，但在使用淡入淡出的过程中切换输入端口并不是安全的行为，因为在没有预监的情况下，您不能准确的把握切换的时机。因此请事先确定是在哪两个输入端口之间进行淡入淡出切换，并将通道 1 及通道 2 的端口，分别设置为两个目标端口之一。

2、在非菜单状态下按“FADE”键就可以直接进行淡入淡出操作，菜单系统进入淡入淡出界面后，在第一行按“FADE”、“OK”、“LEFT”及“RIGHT”键就可以进行双画面的淡入淡出操作；反色的字符表示现在正在显示的信号端口，左边的字符表示通道 1 的输入信号端口名称，右边的字符表示通道 2 的输入信号端口名称；输入端口名称的旁边如果出现“×”，表示该端口无有效输入信号。

3、淡入淡出功能的端口限制请参考双画面输入源冲突列表。

使用拼接

拼接概述

LED-500C 单机具备两个发送卡槽，两卡可以同时为两块 LED 显示屏输送相同的图像，也可以利用两卡的级联方式，增大带载面积，为一块高分辨率的 LED 显示屏输送高清图像。

若 LED 显示屏的实际像素超出了发送卡的带载能力，对于这种情况，需要使用多张发送卡并使用视频处理器的拼接功能来解决。采用处理器进行拼接，既可以多机合成在一起显示完整画面，又可以分开来单独显示独立图像。

LED-500C 视频处理器使用了“同步随动”技术，很好的解决了一直以来难以攻克的拼接难题：拼接图像运动割裂现象，即运动图像在拼接缝处错位的现象。“同步随动”技术让用户很容易就能使用 LED 视频处理器实现超大 LED 显示屏的拼接。“同步随动”功能会在拼接功能开启后自行启动，菜单系统会给出当前视频同步状态的提示，关于这部分内容请参考“状态图标及其含义”。

LED-500C 视频处理器提供了两种拼接方式，分别是“等分拼接”和“不等分拼接”，前者设置极其简单，但对其应用的场合有一定限制，后者设置稍复杂，可以应对所有的拼接场合。

下文将详细介绍 LED-500C 拼接功能的使用方法及注意事项。

等分拼接

等分拼接，应用于每组 LED 拼接单元的参数都相同的情况之下。

例如：有 6 组完全相同的 LED 显示屏，每一组都由一张发送卡或者一组级联的发送卡来输送图像，现在要把这 6 组屏按水平 3 组、垂直 2 组的方式拼接成一个屏幕来显示，如下图所示：

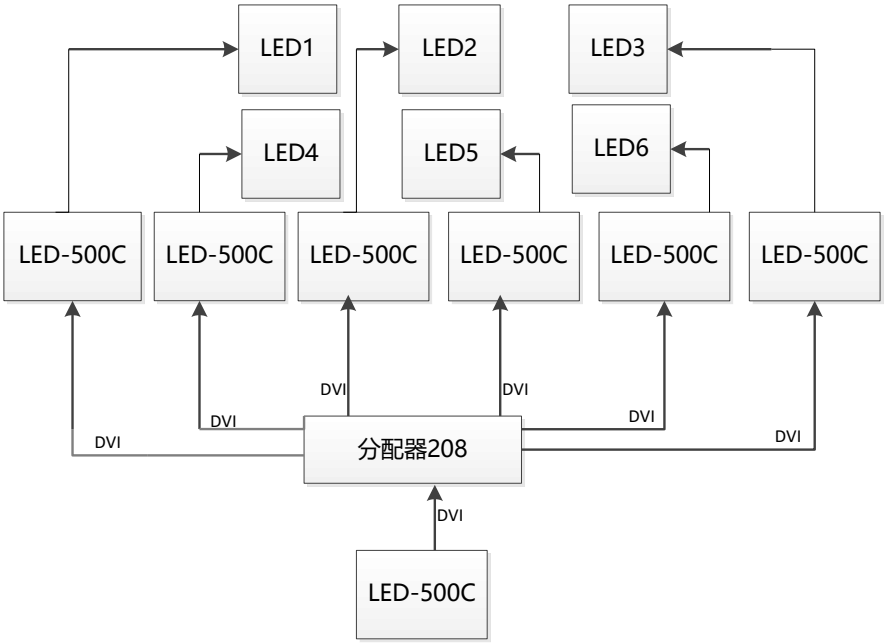
No. 1	No. 2	No. 3
No. 4	No. 5	No. 6

那么这 6 组 LED 显示屏，每组需要一台 LED-500C 视频处理器。这六台机器的等分拼接参数须按下表设置：

处理器 / 参数	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
拼接位置	1	2	3	4	5	6
水平拼接	3	3	3	3	3	3
垂直拼接	2	2	2	2	2	2

系统搭建完成后，需要测试拼接效果，若“同步随动”功能不能成功启动（即同步随动图标很长一段时间内都不能显示出来），那么就需要新增一台 LED-500C 视频处理器来做信号整形，而上述 6 台机器之间通过分配器输入与输出进行等分拼接。

其系统框图如下所示：

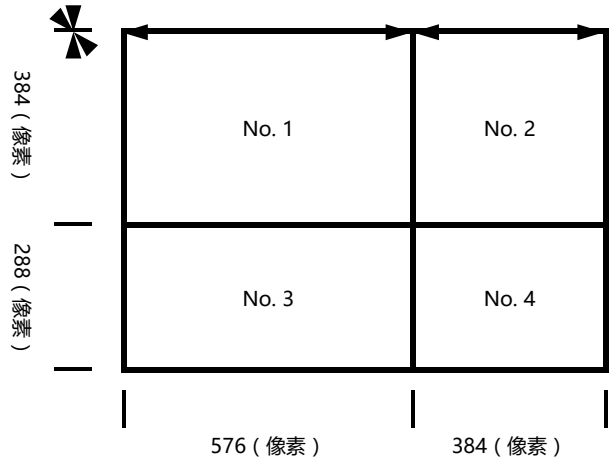


上图中， No. 1 到 No. 6 这 6 台 LED-500C 视频处理器的输入信号完全一致。

不等分拼接

不等分拼接适用于所有需要拼接的场合，等分拼接是不等分拼接的特例，即所有拼接单元参数都相同的特殊情况。对于所有需要拼接的场合，都可以使用不等分拼接功能。

下面举个例子来说明不等分拼接参数是如何设置的。拼接形式如下图所示：

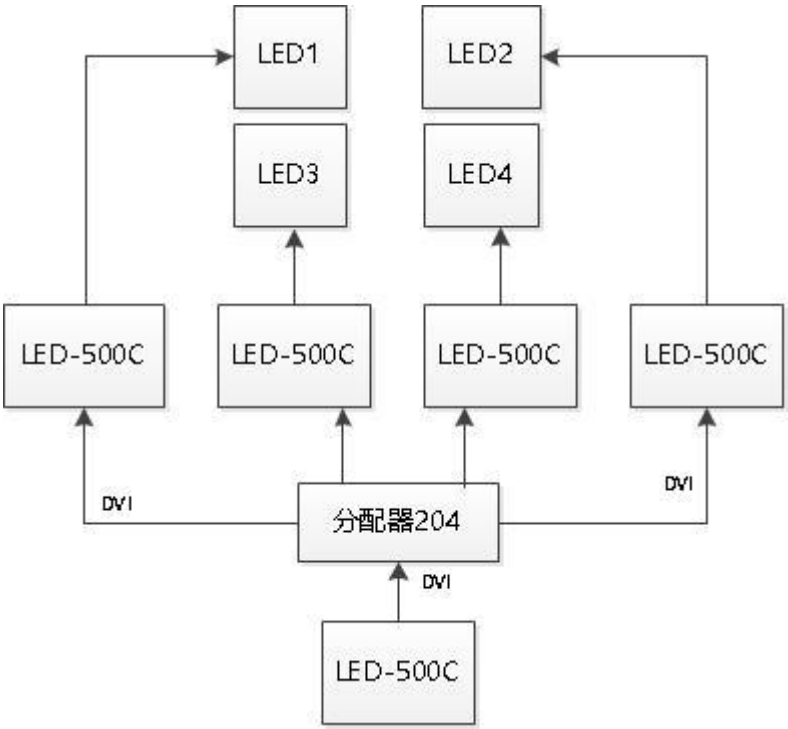


该例中有 4 组 LED 显示屏，每组需要一台 LED-500C 视频处理器。这四台机器的不等分拼接参数须按下表设置：

处理器 / 参数	No. 1	No. 2	No. 3	No. 4
水平总点数	960	960	960	960
垂直总点数	672	672	672	672
水平起始	0	576	0	576
垂直起始	0	0	384	384
区域宽度	576	384	576	384
区域高度	384	384	288	288

系统搭建完成后，需要测试拼接效果，若“同步随动”功能不能成功启动（即同步随动图标很长一段时间内都不能显示出来），那么就需要新增一台 LED-500C 视频处理器来做信号整形，而上述 4 台机器之间通过分配器来进行信号的传送。

其系统框图如下所示：



上图中， No. 1 到 No. 4 这 4 台 LED-500C 视频处理器的输入信号完全一致。通过主控 LED-500C 输出给分配器 ,将分配器输出的信号给各自 LED-500C 视频处理器的输入，这样可以达到拼接的效果。

以上的拼接示例中，都使用了用于信号整形的 LED-500C 视频处理器的两个输出口，这是为了避免 DVI 信号的不稳定现象。

注意：LED-500C 视频处理器中对屏幕像素位置的描述，是从 0 开始的，即左上角像素的水平及垂直位置均为 0，水平方向由左到右递增，垂直方向由上到下递增。

输入信号热备份

热备份概述

什么是输入信号的热备份？它有什么用处？

简单来说，热备份就是在输入信号丢失时，自动、快速的将备用输入信号顶替原来的输入信号，最大限度的保证输出图像不间断。

热备份是对系统稳定性的一个有力保障，这使得因为信号输入装置故障而造成的影响降到最低。

如何使用热备份

进入“双画面子菜单”，并选择“自动切换”功能，您可以在这里设置如何使用 LED-500C 的热备份功能。这里有四个选项，详细情况请查阅下表：

项目	说明
关	没有使用热备份功能
画面 1 优先	若通道 1 信号有效，则输出通道 1 的图像，否则，输出通道 2 的图像
画面 2 优先	若通道 2 信号有效，则输出通道 2 的图像，否则，输出通道 1 的图像
信号优先	在两个通道的信号均无效的情况下，两个通道中的信号先有效的，则其图像将被输出，后有效的信号不影响正在输出的图像。

需要注意的是，使用热备份功能时，通道 1 与通道 2 的输出图像位置及大小须按实际使用情况事先设置好。推荐使用“画面 1 优先”选项，将备份的信号源设置到通道 2 上。热备份是建立在对信号进行检测的基础上进行的操作，当信号源信号不稳定或者丢失的瞬间，会有瞬间的黑屏，但是在最快的时间内（0.2 秒左右）备份通道的图像就会显示出来，让画面的中断时间减小到最短。

常见问题

LED-500C 为用户提供了丰富的功能，某些功能的使用要求用户有相当的专业知识。当用户遇到问题的时候，可以尝试自己去调校机器，如果按下面列出的步骤仍然无法解决时，请与您的当地经销商联系，或者直接与本公司的客户服务部联系。为了您的安全，切勿试图自行对产品进行修理。

现象	检查、调校项目清单
设备输出无图像，前面板液晶屏幕无显示	● 检查电源线是否接触不良 ● 检查电源开关是否为打开状态
前面板液晶屏幕有信息显示，但没有图像输出或输出图像不稳定	● 检查是否正确连接输入信号，并且已经切换到对应的信号源（若无信号，前面板液晶屏幕上会显示无信号提示，且本产品此时没有图像输出） ● 检查显示终端是否支持 LED-500C 的输出分辨率及刷新率 ● 检查亮度和对比度是否设置得太低 ● 检查用户色温各项数值是否设置得太低 ● 检查通道 1 和通道 2 的输入状态，最上层的通道画面是否显示有信号 ● 尝试通过“功能设置”子菜单中的“工厂复位”将机器恢复到出厂设置
图像显示位置有偏差	● 进入“输出设置”子菜单，调整“水平位置”和“垂直位置”，直至图像正确显示
VGA 或 DVI 端口图像显示不正常	● 检查输入信号分辨率是否符合 VESA 标准
VGA 图像显示不满屏	● 按下前面板“AUTO”键，直到图像正确显示（自动调整时，请使用满屏且不带黑边的信号）
画中画显示异常	● 检查“双画面”子菜单中的“水平宽度”、“垂直高度”、“水平位置”、“垂直位置”等项目数值是否合理
淡入淡出功能无效	● 检查自动切换功能是否处于关闭状态 ● 通道 1 和通道 2 的输入信号是否有效

型号说明

LED-500CX

S	扩展外部 SDI 信号输入模块（带环出）
D	扩展外部 DVI 信号输入模块
V	扩展外部 VGA 信号输入模块

保修说明

整机保修期

- 自用户购机发票日期起 12 个月；
- 如果用户购机发票丢失，以此产品的生产日期后的第 60 天，为该产品的保修起始日期。

非保修规定

- 机器浸水，碰撞，使用后所产生的污渍或表面划伤等其它非正常使用原因造成的故障或损坏；
- 非经我司同意的拆机，改装；
- 非产品所规定的工作环境下使用，造成的故障或损坏（例如温度过高，过低或电压不稳定等）；
- 由于不可抗拒（如火灾，地震等）或自然灾害（如雷击等）所造成的故障或损坏；
- 产品超出保修期。

LED 视频处理器

LED Video Processor

使用说明书 User Manual V1.2

⚠ 使用本 LED 视频处理器之前，请先仔细阅读此使用说明书并将之妥善保存以备日后参考。

Before using this LED Video processor，please read this manual carefully and preserved for reference in the future.

MAGNIMAGE

LED-500C

Statements

Without the written permission, any unit or individual could not copy, reproduction or translate the book or part of it. Also could not transmit it in any form or any way (electronic, mechanical, photocopying, record or other way) for any business and profitable purpose.

The product specifications and information mentioned in this manual is just for reference, will not give prior notice if there is any updated. Unless there is a special agreement, it is just used as guidelines. All the statements or information in this manual shall not constitute any form of guarantee.

Directory

Briefs

Thanks for your purchasing our LED Video processor. Do hope you can enjoy the experience of the product performance. The design of the LED video processor conforms to international and industry standards. But if with improper operation, there will be a personal injury and property damage. In order to avoid the dangerous, please obey the relevant instructions when you install and operate the product.

Trademark credit

- VGA and XGA are the trademarks of IBM.
- VESA is a Video Electronics Standards Association's trademark.
- HDMI、HDMI mark and High-Definition Multimedia Interface are all from HDMI Licensing LLC.

  Even if not specified company or product trademarks, trademark has been fully recognized.

About software

Do not change, decompile, disassemble, decrypt or reverse engineer the software installed in the product, these acts are illegal.

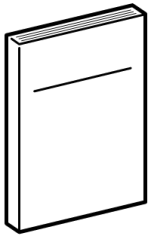
Features

- Support ultrahigh resolution output、ultrahigh horizontal frequency resolution.
- Quick switching for input of single machine.
- Realize switcher’s function by multi-machine connection,support cut and fade function for multi-inputs .
- Picture and text overlay, cutout composite function, convenience to achieve the effect of the captions superposed and image compound.
- The multi-machine prompt restore function of working mould is convenience for you to switch rapidly in a variety of applications.
- Input hot backup function, allows you to be no longer embarrassed in case of sudden loss of the input signal.

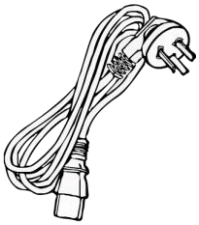
Using directions

Included Accessories

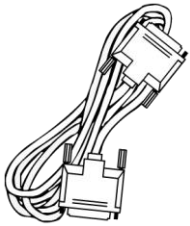
User manual



Power line



DVIsignal line



Certificate of quality

M3 screws × 4

Sending card stud bolts × 4

Extended Port

Port	Model	Explanation
Extend DVI port	LED-500CD	Add another DVI input
Extend SDI port	LED-500CS	Add another SDI input / loop port
Extend VGA port	LED-500CV	Add another VGA input

Safety instructions

- Please use the correct power supply according that the power input voltage for this product range is 100～240V AC, 50/60Hz.
- When you need connect or pull out any signal or bound guideline. Please confirm that all the power supply cords have been pulled out ahead.
- When you need to add hardware device for the LED video processor, make sure all of the signals and power cables have been pulled out ahead.
- Before you operate any hardware, please turn off the LED video processor's power, and to set you on the electrostatic by touching the ground surfaces.
- Please use the processor in clean, dry and ventilated environment, not use it in the high temperature, humidity environment.
- The product is the electronic product; please stay away from the fire, water and of which is inflammable and blast, dangerous.
- This product is with high pressure components, please don't open the case or maintain it by your own.

Function introduction

Brief

LED-500C series products are the video processor developed for the large screen display system, adopted the top image processing chips , internal 12 bits processing, with clearer images and richer colors.

Advanced alternate motion picture processing technology, to remove video motion tail or jagged, for the normal PAL/NTSC video, output image will be clearer, for the HD 1080i signal, output image details will be rich, full color and image quality is in the leading level.

Advanced image scaling technology, can support tens of the resolution, single machine can maximum output 2304×1152, 2560×816, 1920×1200, 1536×1536 resolution and maximum refresh frequency rate 120Hz, and can scale the input picture point by point according to the screen size.

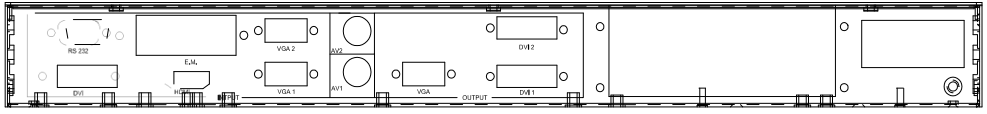
Intellectualized large size LED screen seamless splicing technique, the user just needs to have simple setting, they could realize that to send card picture splicing, can support 24576×24576 lattice LED screen; Unique synchronized moving technology, ensure high speed motion picture fluently without tail or derangements.

Perfect video image input port, including 2×VGA , 1×DVI (can be extended for two input in unison) , 1×HDMI 、 and 2×AV (PAL/NTSC/SECAM) , 1×SDI (optional), support all HD signal input, can be connected with various audio and video equipment.

Support the seamless switch between different input signal sources and picture in picture function.

The whole unit is with pure hardware framework, steady and reliable.

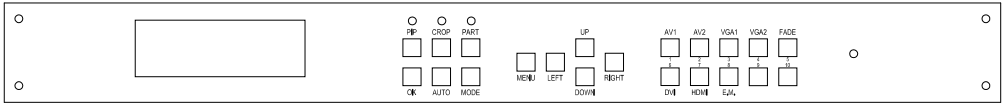
Rear panel graphical representation



video input ports	
AV1~AV2	4 way CVBS input ports
VGA1~VGA2	2 way VGA input ports
DVI	DVI input port (DVI-D)
HDMI	HDMI input port
E.M.	Expand input port

Video output ports	
DVI1~DVI2	2 way DVI output ports (DVI-D)
VGA	VGA output port
SDI Out	Expand output port

Front panel graphical representation



Buttons introduction			
PIP	Picture in picture function hotkey	1 / AV1	Numeric key1, CVBS1 select button
CROP	Input intercepting function hotkey	2 / AV2	Numeric key2, CVBS2 select button
PART	LED part or full screen switch hotkey	3 / VGA1	Numeric key 3，VGA1 select button
OK	Confirm key	4 / VGA2	Numeric key4，VGA2 select button
AUTO	Auto adjust display position of input image	5 / FADE	Numeric key5, fad in & out hotkey
MODE	Exhale template loading shortcut menu	6/ DVI	Numeric key 6，DVI select button
MENU	Main menu key, or return key in the menu	7 / HDMI	Numeric key 7，DVI select button
LEFT	Menu select/operational key, the left key	8/ E.M.	Numeric key 8，Expand select button
UP	Menu select/operational key, the up key		
DOWN	Menu select/operational key, the down key		
RIGHT	Menu select/operational key, the right key		

Technical Specification

Inputs		
Ports	**quantity**	**Rresolution**
AV	2	PAL/NTSC/SECAM
VGA	2	VESA
DVI	1+1（inherent 1，extend 1）	VESA
HDMI	1	EIA/CEA-861,meet HDMI-1.3 standard
SDI	1（EM）	480i、576i、720p、1080i/p（3G SDI）

Outputs		
Ports	**quantity**	**resolution**
VGA	1	1024×768/60Hz/75Hz/85Hz/100Hz/120Hz 1280×1024/60Hz 1440×900/60Hz 1600×1200/60Hz 1600×1200/60Hz– Reduced 1680×1050/60Hz 1920×1080/60Hz/50Hz 2560×816/60Hz 2048×640/60Hz 1920×1200/60Hz 2304×1152/60Hz 2048×1152/60Hz 1024×1280/60Hz 1536×1536/60Hz
DVI	2	
SDI loop	1	480i、576i、720p、1080i/p（3G SDI）

General	
Power supply	100～240VAC，50/60Hz
consumption	20W
Operating	0~45℃
Dimension	（21 + 441 + 21）mm ×（282 + 16）mm ×（45 + 6）mm
Net weight	3.7 Kg

Using the menu

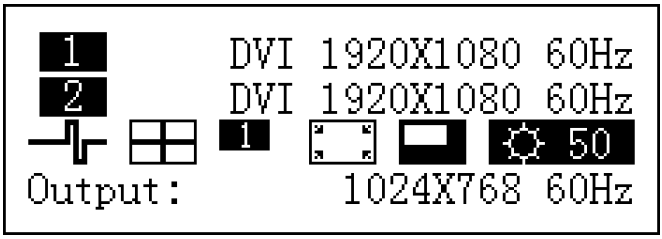
Using the menu system can set to this machine convenient and intuitive to meet the demands of user.

LED-500C using a highlight and high contrast LCD screen to display the whole user menu. When the user does not operate or operate in overtime, the LCD screen will display a non-menu state. If you use the buttons on the front panel to set the machine, the LCD screen will display the menu according to user actions for the user to have prompt and better, more straightforward operations.

We will introduce the LED-500C menu system combing the LCD display and the front panel buttons.

Non-menu state introduction

Turn on the power supply of LED-500C, in the process of the system startup, the LCD front panel would display the start interface on the left screen, when the start completed, there will show the machine' s current state on the screen as the following figure shows:



Above the figure, there are 4 lines content, explanation as the following:

Lines	Details
The first line	Channel 1 (main channel, is also default channel) port name and current input signal resolution.
The second line	Channel 2 (vice-channel) port name and current input signal resolution.
The third line	State prompt area, by several icons to show the machine current working state. There are 6 icons areas from left to right: 7、 Synchronism follow-up state area(valid in the condition of splicing function opening state) Splicing state area 8、 Mosaic status area 9、 PIP state area 10、 Picture intercepting state area 11、 PART (part or full screen) state area 12、 Brightness grade status area Check details in next page.
The fourth line	Output resolution, check details in “Output indicators”

In the non-menu state, the third line area of LCD screen is status prompt area, by several icons to show the machine current working status. Please see the table below:

Form3：State icons and meanings

Icons	Area	Name	Hint (shortcut key in the bracket)
	1	Synchronism follow-up state area	When the splicing function is in opening state, Synchronism follow-up is also started successfully
	2	Equal splicing state	Equal splicing function is Enable
	2	Unequal splicing state	Unequal splicing function is open
	3	PIP off	PIP function off (PIP)
	3	PIP on [1]	PIP function on ,channel 1 is on the top(PIP)
	3	PIP on [2]	PIP function on ,channel 2 is on the top(PIP)
	4	Image intercepting off	Image intercepting function turnoff (CROP)
	4	Image intercepting on	Image intercepting function on (CROP)
	5	PART function off	PART function off ,cutdown image shown on the monitor (PART)
	5	PART function on	PART function on , full screen image shown on the monitor (PART)
	6	Brightness grade icon	Digital presents current brightness grade, range from 0~100 (UP、DOWN)

Main menu introduction

The main menu will show the symbols listed in the table below, please check its specific meaning :

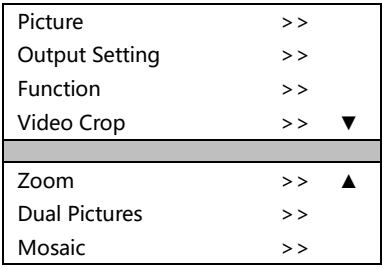
Symbols	Explanation
>>	Press “RIGHT” or “OK” to enter detailed setup interface , or operate directly
▼	After this ,there is another more page ,to enter next page ,press “DOWN” on the last item
▲	Before this ,there is another more page ,to enter previous page ,press “UP” on the first item

In the main MENU, the user can use the “MENU”、“UP”、“DOWN”、“LEFT”、“RIGHT”、“OK” key to select and adjust the each six item. Its operation is fixed pattern, please check the following table:

Operation	Key
Open the main menu	Press "OK" or press "knob" in the default state
Select item	Press “UP” or “DOWN” , “▼” or “▲”
Adjust parameters	When parameter is numercial ,or there are some parameter selections , press “LEFT” or “RIGHT” key
Enter next level	When “>>” symbol displays in the right of item , press “RIGHT” or “OK” key
Performs	When “>>” symbol displays in the right of item , press “RIGHT” or “OK” key
Back to higher menu	Press “MENU” key
Confirm	When do some operations,such as resetting,etc. To avoid the incorrect operation, need to use the “OK” key to confirm it.

Main menu

In the MENU state, press "MENU" button, the MENU system will enter the main MENU state, the LCD screen will show the details as below:



The main menu has seven sub menu items divided into two pages and display separately. Press the "UP" or "DOWN" keys to choose the above listed seven sub MENU headings, after selected, to press "OK" or "RIGHT" button to enter the selected item, and press "MENU" button to return.

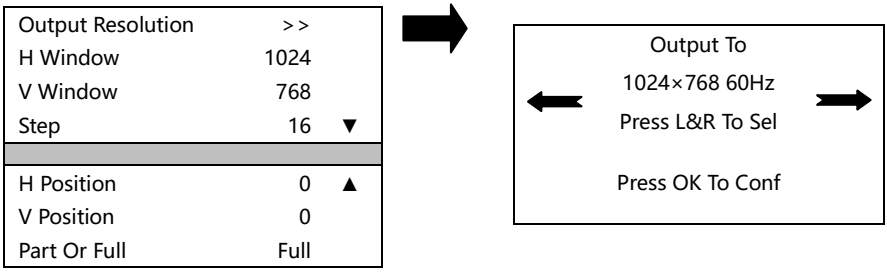
Picture sub menu

Picture Mode	Normal	
Brightness	50	
Contrast	50	
Color	50	▼
Sharpness	12	▲
3DNR /VGA Flicker	Off	
Scheme	Normal	
DVI Enhance	Off	▼
Black Stretch	Off	▲
Color Temperature	>>	
Gamma	Off	

Color Tempture	Normal
Red	50
Green	50
Blue	50

Picture MOde	Divided into "**Normal**"、"**Soft**"、"**Vivid**"、"**User**" the four options.	
Brightness	Range **0~100**.	
Contrast	Range **0~100**.	
Color	Range **0~100**.	
Sharpness	Range **0~24**.	
3DNR	This function is valid when channel 1 is not VGA, divided into "**Off**"、"**Adaptive**"、"**Low**"、"**Medium**"、"**High**" these five kinds of denoise mode.	
VGA Flicker	This function is valid when channel 1 port is VGA1 or VGA2, divided into "**Off**"、"**Level0**"、"**Level1**"、"**Level2**"、"**Level3**"、"**Level4**"、"**Adaptive**" the six modes.	
Scheme	Divided into "**Normal**"、"**Vivid**"、"**Theatre**"、"**Game**"、"**Sport**" the five modes.	
DVI Enhance	In the state of DVI input, the function can greatly improve the output image color and clarity	
Black Stretch	Valid in the Picture mode to "Vivid"、"Theatre"、"Game"、"Sport" , increases the black areas of the image to strengthen contrast.	
Color Temperature	Divided into "**Normal**"、"**Warm**"、"**Cool**"、"**User**" the four options. Only when select "User" , "Red"、"Green"、"Blue" the three regulations is effect and the range is 0 to 100.	
	Red	Range **0~100** , Valid in the color temperature is "user" .
	Green	Range **0~100** , Valid in the color temperature is "user" .
	Blue	Range **0~100** , Valid in the color temperature is "user" .
Gamma	Control the output Gamma value of video processor, divided into "**Off**"、"**2.0**"、"**2.2**"、"**2.8**"、"**- 1.1**"、"**- 1.2**"	

Output setting sub menu

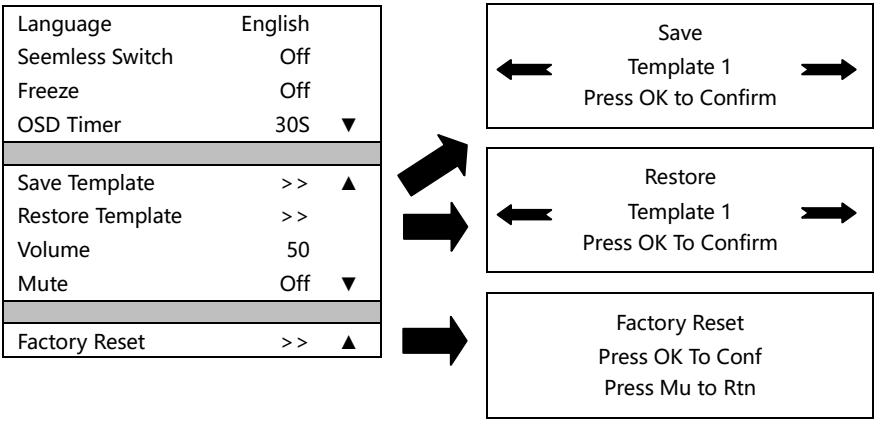


Output Resolution	LED-500C support 19 kinds of output Resolution, maximum width 2560, and maximum height 1536. details in "output indicators"。
H Window	Minimum is **64**, maximum is "**the width of the current output resolution**" (for example: 1024 of 1024×768 60Hz).
V Window	Minimum is 48, maximum is "the height of the current output resolution" (for example: 768 of 1024×768 60Hz).
Step	The default value is 16, also can set to be 128 or 1.
H Position	Minimum value is -16; the biggest can be set to the differentials between "the width of the current output resolution" and "H Window" .
V Position	Minimum value is -16; the biggest can be set to the differentials between "the height of the current output resolution" and "V Window" .
Part Or Full	Full：namely PART function shut. Now the complete image will be shown on the LED screen, and the monitor will display shrunken image, "H Window" , "V Window" , "H Position" and "V Position" four parameters take effect automatically.
	Part：namely PART function open, At this time the LED screen will show a part of the image , and the monitor will display full screen image, "H Window" , "V Window" , "H Position" and "V Position" four parameters will to be void.

Please set the output resolution, H Window and V Window based on the physical resolution of LED screen. If do not have suitable output resolution, please select the options with bigger resolution than the screen' s.

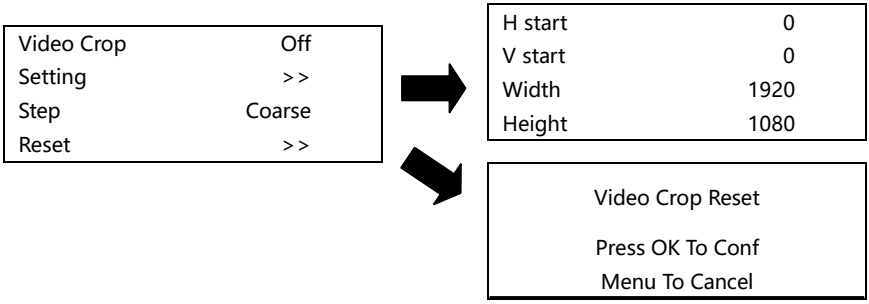
For example, there is a LED screen whose physical resolution is 1152×960, you cannot find the resolution in the output resolution lists of LED-500C, and larger and nearest resolution is "1280×1024 60Hz" , in such circumstances, please set the output resolution to be "1280×1024 60Hz" . In addition, still need to set the H Window to be the practical width of the LED screen, 1152. And the V Window should be the practical vertical height, 960.

Function sub menu



Language	Display language of LED-500C menu system , have "**中文**" and "**English**" two options.
Seemless Switch	**Off** : Seamless switch function closed, in the process of switching input signal port, black screen first, and then open the new input signal port.
	On : Seamless switch function open, in the process of switching input signal port, there will be no black screen and no pause. Note: Between AV1, AV2, AV4 AV3, and between DVI and HDMI, between VGA1 and VGA2, cannot do seamless switching.
Freeze	Freeze all images of the two channels. Switch input ports, signal lost, setting PIP parameters and other such as occurs, this function will be failure automatically.
OSD Timer	Without any operation, the time of withdraw the menu. Default value is "**30 seconds**" , also can be set to "**60 seconds**" or "**10 seconds**" .
Save Template	Save the current user settings. Can save 10 groups template at the most.
Restore Template	Restore the before settings from template.
Volume	Range **0~100**, Output volume adjustment, default value is **50**.
Mute	Output volume mute.
Factory	Restore factory Settings.

Video Crop sub Menu



Video Crop	Image cropping function for input signal "**On**" or "**Off**". Default is Off.
Setting	**H start**: the minimum value is **0**, the maximum value is the **D-value of "input signal width" minus "64"**.
	V start: the minimum value is **0**, the maximum value is the **D-value of "input signal height" minus "32"**.
	Width: the minimum value is **64**, the maximum value is the **D-value of "input signal width" minus "H start"**.
	Height: the minimum value is **32**, the maximum value is the **D-value of "input signal height" and "V start"**.
Step	Divided into "**Coarse**" and "**Fine**" two patterns.
Reset	Reset the parameters within the current image intercepted submenu, after finishing the reset, display full image.

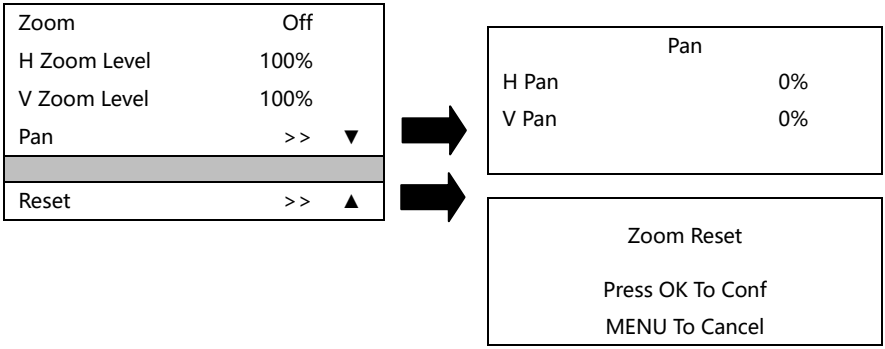
Image intercepting function is only available in the state of "splicing function" and "zoom function" closed and the current input signal effective. When the image intercepting function is not available, enter the image intercepting sun menu from the main menu, the menu system will prompt the user to check the function conflict Settings.

Image intercepting function is the function to intercept the input signal, and according the output Settings to output to the LED display. So the image intercepted window size and location, limits within the input signal window. The above graph parameter Settings are all mutual condition.

Additional remarks: input signal width, height and other information can be checked in the display of "current input signal resolution specifications" and in the state of "non-menu state"

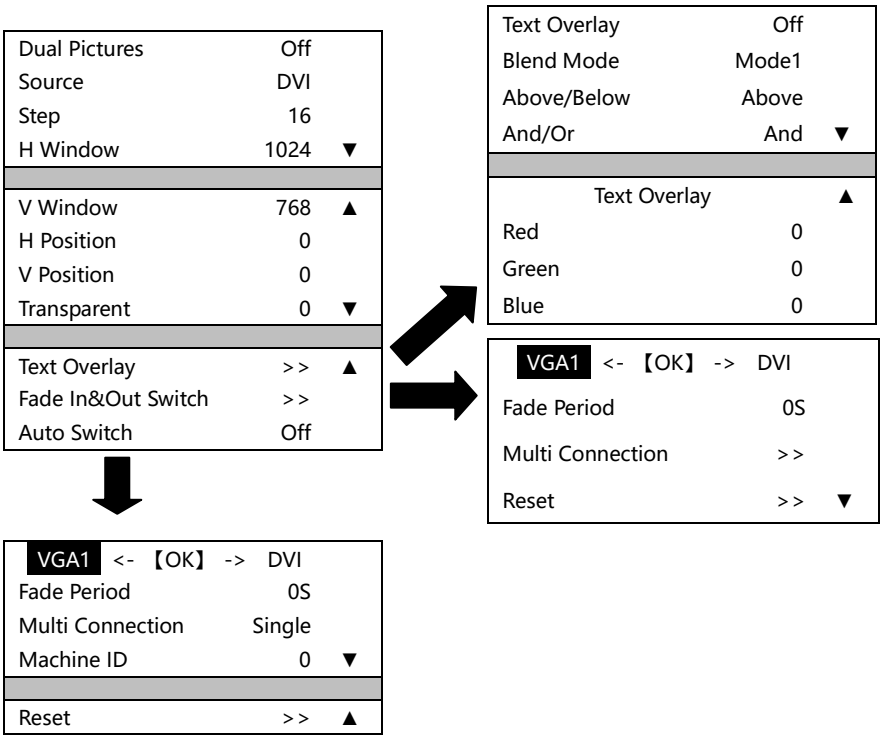
For example, input signal resolution specifications of signal input channel 1 is 1920 × 1080 60Hz , then, the input signal width is 1920, the height is 1080, 60Hz is refresh frequency.

Zoom sub Menu



Zoom	Zoom function "**On**" and "**Off**" . The default is Off.
H zoom level	In percentage form to enlarge the image in horizontal direction, step length **5%**, maximum is **1000%**, and the minimum is **100%**.
V zoom level	In percentage form to enlarge the image in vertical direction, step length of **5%**, maximum is **1000%** and the minimum is **100%**.
Pan	**H Pan** : In percentage form to move the horizontal position of enlarged image, step length 1%, maximum is 100%. When set to 50%, the amplification window horizontal position is in the center of the horizontal position of original image.
	V Pan : In percentage form to move the vertical position of enlarged image, step length 1%, maximum is 100%. When set to 50%, the amplification window vertical position is in the center of the vertical position of original image.
Reset	Reset the current amplification function submenu parameter, after finishing reset, display full image.

Dual Pictures sub Menu



Dual Pictures	Dual Pictures function "**On**" and "**Off**". The default is Off.
Source	Switching input port of channel 2 (vice channel). This will be restricted by the input port of channel 1, details in the "Dual pictures input source conflict list"。
Step	When adjust the following four items, the step length value selection can be set to "**1**", "**16**" and "**128**". Default for 16.
H Window	The horizontal width of the vice channel image, and the minimum value is **64**, maximum value is "**the current output resolution width**".
V Window	The vertical height of the vice channel image, and the minimum value is **48**, maximum value is "**the current output resolution height**".
H Position	The top-left corner of Vice channel image levels of coordinates in "output

	resolution window" .
V Position	The top-left corner of Vice channel image vertical coordinates in "output resolution window" .
Transparent	The transparency of vice channel image, range is **0~3**, when the value is 0, completely opaque, 3 the transparency is the highest.
Text Overlay	Text overlay, cutout synthesis menu, check details in the text overlay specification.
Fade In&Out Switch	Fade in and fade out, multi units combined switch menu entrance; see details in the fade in fade out function specification.
Auto Switch	**Off** : automatic switching function closed.
	Window1 : if channel1 signal is effective, then channel1 image is located in the top floor.
	Window2 : if channel2 signal is effective, then channel2 image is located in the top floor.
	Signal : Between the two signal input channels, the input signal effective channel image is located in the top.

Form4 : Dual pictures input source conflict list

CH1 / CH2	AV1	AV2	VGA1	VGA2	DVI	HDMI	E.M.
AV1	✓	×	✓ *	✓ *	✓ *	✓ *	✓ *
AV2	×	✓	✓ *	✓ *	✓ *	✓ *	✓ *
VGA1	✓	✓	✓	×	✓	✓	✓
VGA2	✓	✓	×	✓	✓	✓	✓
DVI	✓	✓	✓	✓	✓	×	✓
HDMI	✓	✓	✓	✓	×	✓	✓
E.M.	✓	✓	✓	✓	✓	✓	✓

Note 1: During the above graph with "*" combinations, because the channel 2 didn't go interlaced processing, there will be a slight shaking phenomenon in the picture, in this kind of circumstance, can consider exchange channel 1 and channel 2 input source.

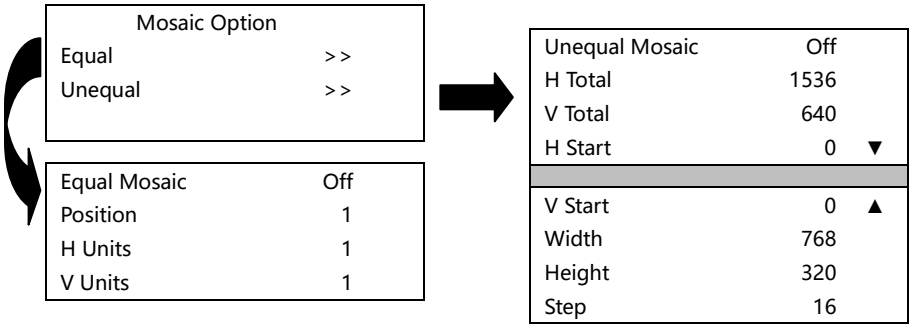
Note 2: During switch input port, the system to channel 1 for priority, if channel 2 port and channel 1 port conflict with each other, port 2 will be switched under the port 1 automatically.

Text Overlay	
Text Overlay	Text overlay function "open" and "closed". The default is closed.
Blend Mode	Divided into "mode 1" and "mode 2" two patterns.
	Mode 1 : in this mode the text pixels are on top and not blended. The non-text pixels are blended with the other channel using the Transparent setting in Dual Pictures sub Menu.
	Mode 2 : in this mode the text pixels are blended with the other channel using the Transparent setting in Dual Pictures sub Menu. The non-text pixels are completely transparent.
Above/Below	**Above** : The pixel that has any color value above the Red, Green and Blue level become tagged as TEXT PIXELS, the rest of the pixels become NON-TEXT pixels. The judgment should be combined with the "And/Or" conditions.
	Below : The pixel that has any color value below the Red, Green and Blue level become tagged as TEXT PIXELS, the rest of the pixels become NON-TEXT pixels. The judgment should be combined with the "And/Or" conditions.
And/Or	**And** : all three color must be used to trigger the above / below comparison
	Or : any color is enough to trigger the above / below comparison
Red	Red Threshold, Range: **0~255**
Green	Green Threshold, Range: **0~255**
Blue	Blue Threshold, Range: **0~255**

Fade In&Out Switch	
Fade In&Out Switch	" VGA1 × <- 【OK】 -> DVI" , as shown in the left example, "【OK】" the left side shows the name of the input port of channel 1, channel 2 on the right shows the input port name; sample The cursor is on the left, the port name is VGA1, next to the "×" that no valid signal under VGA1 input port; use the "OK" , "FADE" , "LEFT" or "RIGHT" key, between the two input ports Fade to switch; use the "input port selection key" could switch the under layer port to the appropriate port (Do not conflict with the top layer port, Please refer to Dual pictures input source conflict list. Please note, if "×" is shown beside the port name, there is no valid signal under the port, the actual display was a black screen.
Fade Period	The process of fade in fade out can experience for 0 second to 5 seconds. If set to 0 seconds, then switching process would be finished instantaneously.
Multi Connection	Multi machine combined setting, combination switching function setting machine
Reset	Press "RIGHT" or "OK" to reset the parameter in the fade in fade out function.

Multi-machine connection instruction	
Multi machine Fade In&Out Switch	" VGA2 <- 【OK】 -> × DVI ", as shown in the left example, the cursor is located in channel 2, port name is DVI, next to the "×" that no valid signal under DVI input port; when the cursor is located in the channel 2 (The cursor on the right), use the "input port selection key" to switch the input port of channel 1. Use "LEFT" and "OK" button to make the channel 1 of current processor as the multi-connection processor's output; use the "RIGHT" key to enable the channel 2 of current processor as the multi-connection processor's output.
Fade Period	Combination switch sets signal input port switching process can experience for 0 second to 5 seconds. If set to 0 seconds, then switching process would be finished instantaneously.
Multi Connection	Can be set to "single" and "multi machine connection".
	Single：Not in the state of the multi-machine connection, that is, not in the state of the combination switching.
	Multi：the state of multi machine connection, namely combination switching state.
Machine ID	Range is **0~7**，0 representing terminal machine, its previous level machine Numbers is 1, the level before the previous is 2, and so forth. Terminal, that is the video processor linking the LED sending card
Reset	Press "RIGHT" or "OK" to reset the parameter in the multi machine connection setting function.

Mosaic sub Menu



Equal	**Equal Mosaic**	The Equal Mosaic function "**On**" or "**Off**", default is off.
	Position	Choose the current video processor display position in the whole splicing image, range is 1~64.
	H Units	The total number of the video processor in the horizontal direction, range is 1~8.
	V Units	The total number of the video processor in the vertical direction, range is 1~8.
Unequal	**Unequal Mosaic**	The Unequal Mosaic function "On" or "Off", default is off.
	H Total	The physical pixel points of the LED screen in horizontal direction.
	V Total	The physical pixel points of the LED screen in vertical direction.
	H Start	The level starting position of the display area that controlled by the current video processor. The LED screen top-left corner is viewed as the original point (horizontal starting point 0).
	V Start	The vertical starting position of the display area that controlled by the current video processor. The LED screen top-left corner is viewed as the original point (vertical starting point 0).
	Width	The pixel points that the display area of the current video processor shown in the horizontal direction.
	Height	The pixel points that the display area of the current video processor shown in the vertical direction.
	Setp	The step length value that adjust the parameters of the unequal splicing can be set to "1", "and" and "128", The default is "16".

Shortcuts menu

LED-500C sets up total nine input shortcuts and six function shortcut keys. Input shortcuts are: "**AV1**", "**AV2**", "**VGA1**", "**VGA2**", "**DVI**", "**HDMI**" and "**E.M.**" respectively; Function shortcuts are: "**PIP**", "**CROP**", "**PART**", "**AUTO**", "**MODE**" and "**FADE**".

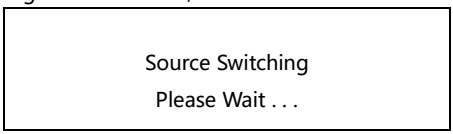
All the name of the keys and its position of the machine, please refer to the "Front panel graphical representation"

Note: Unless specifically mentioned otherwise, all shortcut keys must be in "non-menu state" under to be effective.

Input shortcuts

In the non-menu state, press any input shortcuts, no.1 signal input channel port will switch directly to the input port which is corresponding with the input shortcuts. Moments later, the menu system will show the input channel state, including port name, whether the input signal is effective or not, also will show signal resolution specifications in effective case. About this content, please refer to the "Non-menu state introduction".

Additional remarks: in "seamless switching" function open state, press any input shortcuts, the system will be preparation for signal and automatic switching in the next around 1 seconds time, the whole switching will delay about 1 second, at that time, the LED-500C menu system will display waiting for information, as below:



When the seamless switching completed, the menu system will be into "non-menu state" automatically.

If users need to switch Channel 2 signal input port, please enter "PIP submenu", and adjust "input source" option.

Function shortcuts

PIP function shortcuts :

The shortcuts only can be available in "seamless switching" function closed. If in the PIP open state, "seamless switching" function open, then PIP function will be forced to close.

Icon	Explanation
	PIP function closed, channel 1 signal display normally.
	PIP function open, channel 1 is on top, namely channel 1 display area covers channel 2 image.
	PIP function open, channel 2 is on top, namely channel 2 display area covers channel 2 image.

CROP function shortcuts :

CROP function, namely "image intercepting" function, is only available on the condition of "Splicing function" and "amplification function" closed, and the current input signal effective. If the image intercepting function is not available, "CROP" button will not be response.

Icon	Explanation
	CROP function closed.
	CROP function open.

PART function shortcuts :

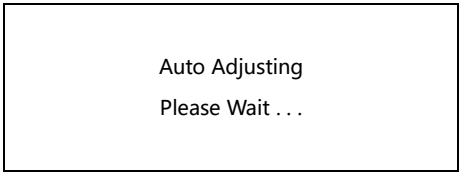
PART function, namely PART or full-screen display image fast switching function.

In the state of LED display normally, PART function should be closed; When in the circumstance of the monitor to setup broadcast, can use PART function open, image full resolution display characteristics, to make the process convenient and fast.

Icon	Explanation
	PART function closed. LED screen display the complete program picture, the program picture is shrinking in the monitor.
	PART function open. LED screen display part program picture, the programs' picture is full screen in the monitor.

AUTO function shortcuts :

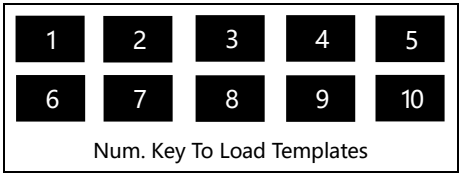
In the"non-menu state", press"AUTO"button, the menu system will display the following tips :



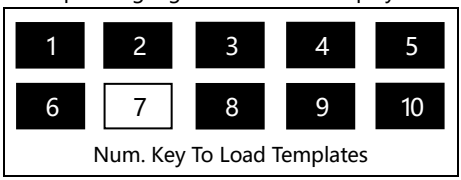
At this moment, system is to adjust the display position of the image automatically, after this process completed, the menu system returns to "non-menu state"。

MODE function shortcuts :

In the "non-menu state" , press "MODE" button, the menu system will enter the template loading shortcut menu state as below :



Press a number key, then the corresponding template will be loaded into the system instantly, and the corresponding digital will also be displayed in highlight. For example :

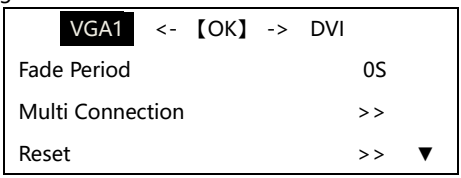


In the multi-machine connection state, any one unit LED-500C can be as the controller of "MODE" function. Ensure all the machines in the "non-menu state" , press the "MODE" shortcuts on any machine, all the machines will enter the template loading shortcut menu state, in this shortcut menu state, press any numeric key on any machine, then all the machine will load the corresponding template of their respective system, it is convenient for you to switch the working state in various application occasions rapidly.

FADE function shortcuts :

In the "non-menu state" , press "FADE" button, the menu system will enter the fade in

fade out switching state as below :



Tips :

1、In the shortcut menu, you can switch input port for the bottom layer, but it is not safe behavior, because in the absence of pre-monitoring situation, you can not accurately grasp the switching time. So please determine in advance which of the two inputs would get into the fade switch process.

2、In non-menu state, press "FADE" key to perform fade in & out operation, after the menu enter to fade menu state, in the first line by using "FADE"、"OK"、"LEFT" and "RIGHT" key to perform fade in and out process; High light characters is now display signal port, channel 1 input port name is on the left, channel 2 input port name is on the right. If there is "×" beside the port name, means that there is no valid signal under the port.

3、The limitation of the fade in fade out function port, please check the Dual pictures input source conflict list.

Using Mosaic

Mosaic summarize

LED-500C single has two send card slots, two cards can convey the same image for the two LED display at the same time, also can use two cards cascading, and increase the load area for conveying HD image to a high resolution LED display.

If the actual pixel of the LED display beyond of the sending cards loading ability, for this kind of circumstance, need to use more than one sending cards and use video processor splicing function to solve. Adopt processor splicing, namely can use multi machine combing to display the complete image, also can display independent image separately.

Video processor LED-500C using "synchronous follow-up" technology, solved the difficult splicing problem: splicing image motion lacerate phenomenon, namely the phenomenon of the moving pictures dislocated in splicing crossing. "Synchronous follow-up" technology lets users easily use the LED video processor to realize the large LED screen splicing. "Synchronous follow-up" function will open in the state of splicing function open, the menu system will give the current video synchronism state tips, about this part of the content, please refer to the "State icons and meanings"

Video processor LED-500C provides two mosaic way, respectively is "equal" and "unequal", the former setting is extremely simple, but for its application occasions has certain restriction, the latter settings is slightly complex, can deal with all splicing occasion.

Following is the detailed LED-500C splicing function using introduction and the matters needing attention.

Equal Mosaic

Equal Mosaic can be applied to the circumstances of the each group LED splicing unit parameters are the same.

For example：there are 6 groups of identical LED screen, each group has a card or a group of cascade of sending cards to carry image, now will give this six groups screen spliced a screen to display according to the 3 level groups, 2 vertical groups as below：

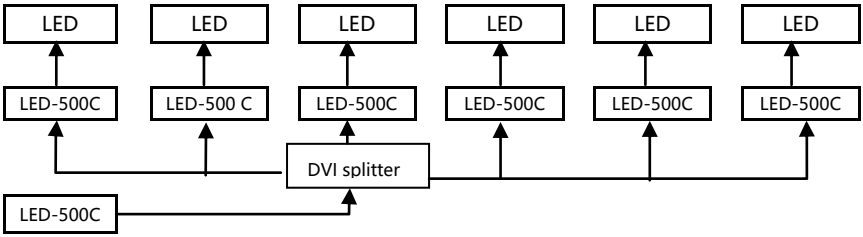
No. 1	No. 2	No. 3
No. 4	No. 5	No. 6

So this six groups LED display, each group needs one unit LED-500C. The six machines switching parameters must be set as the following table：

Processor / Parameter	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Position	1	2	3	4	5	6
H Units	3	3	3	3	3	3
V Units	2	2	2	2	2	2

After finished the system constructing, need to test the splicing effect, if "synchronous follow-up" function cannot be successfully launched (namely synchronous follow-up icon are not displayed for a long time), then need to add a LED-500c to do signal shaping, and the above 6 sets LED-500C share the reforming signal by DVI splitter output .

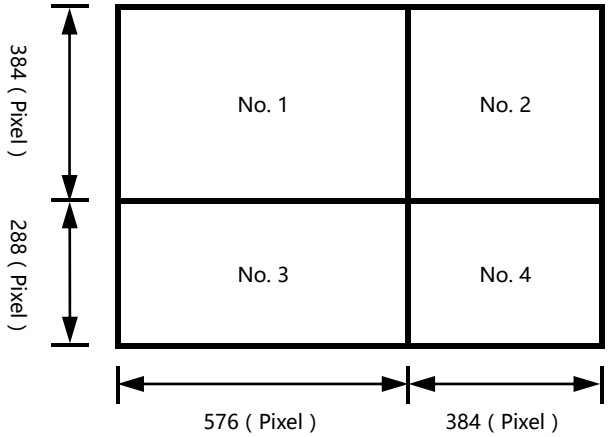
Following is the system diagram：



Unequal Mosaic

Unequal Mosaic is applicable to all need splicing occasions, equal splicing is the special case of the unequal splicing, namely is the special situation of all splicing unit parameters are the same. For all the occasions besides that, all can use unequal joining function.

Following is the example to illustrate how to set the unequal splicing parameters. Splicing form is as below：

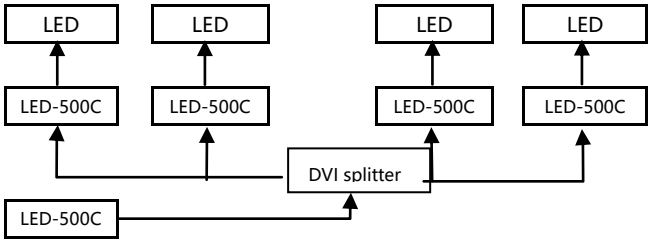


In this case there are four groups LED display screens, each group need a LED-500C The four machines unequal splicing parameters must be set as the following table：

Processor / Parameter	No. 1	No. 2	No. 3	No. 4
H Total	960	960	960	960
V Total	672	672	672	672
H Start	0	576	0	576
V Start	0	0	384	384
Width	576	384	576	384
Height	384	384	288	288

After finished the system constructing, need to test the splicing effect, if "synchronous follow-up" function cannot be successfully launched (namely synchronous follow-up icon are not displayed for a long time), then need to add a LED-500C to do signal shaping, and the above four sets LED can share the plastic signal by DVI splitter output.

Following is the system diagram :



Note : The description for the pixel position of LED-500C, is starting from 0, namely the top-left corner pixels horizontal and vertical positions are both for 0, increasing from left to right on the horizontal direction, on vertical direction increasing from top to bottom.

Input signal hot backup

Summarize

Note that what the input signal warm backup is? What is the use of it?
In simple terms, warm backup is that when the input signal missed, using spare input signal automatically and rapidly to replace the original input signal, maximum ensure output image uninterrupted.
Hot backup is a powerful guarantee to the stability of the system, which makes the impact to be the lowest that made by signal input device failure.

How to use the hot backup?

Enter the "PIP submenu" and select "automatic switching function", you can set how to use LED-500C hot backup function here. Here are four options, for details please refer to the table below：

Item	Details
Off	Not to use the heat backup function
Window1	If channel 1 signal is effective, then output channel 1 image, otherwise, the output channel 2 image.
Window2	If channel 2 signal is effective, then output channel 2 image, otherwise, the output channel 1 image.
signal	In the case of two channels signal are invalid, the first effective of the two channels signal, then its image will be output, the behind signal does not affect the output image.

Note that when you use the hot backup function, location and size of channel 1 or channel 2 output image should be set in advance according to actual use. Recommend using "picture 1 priority" option, set the backup sources to the channel 2.

Hot backup is the operation based on the signal detection, when the signal source is unstable or lost moments, there will be instant black screen, but within the fastest time (around 0.2 seconds), backup channel image will be displayed, let picture interrupt time reduced to a minimum.

FAQ

LED-500C provides abundant function for the customers, some functions use requires users to have quite a bit of professional knowledge. When you have problems, can try to timing machines, if cannot solve it according the following step, please contact with the local agent, or contact our service department directly. For your safety, do not attempt to repair the product by yourself.

Phenomenon	Check list
Equipment without image, no display in the front panel.	● Check the power cord ● Check the power switch
The front panel of the screen is displaying information, but no image output or output image is not stable	● Check whether properly connected the input signal and have switched to the corresponding source (if no signal, the front panel LCD screen will display no signal, and the machine will have no image output at the moment) ● Check display terminals whether to support the output resolution and refresh rate of LED-500C. ● Check if the brightness and contrast set too low. ● Check whether the user color temperature set too low. ● check picture 1 and 2 input status, whether the top picture showed a signal ● Try to reset the machine to be the factory setting by "factory reset" of the "function Settings" sub menu.
Image display position deviation	● Enter " output Settings " submenu, adjust the "horizontal position" and "vertical position" , till the image display properly
VGA or DVI port images showed abnormal	● Check whether the input signal resolution is accordance with VESA standard.
VGA Image displayed in not full screen	● Press the front panel "AUTO" button until the image display correct (automatic adjustment, please use the full screen and not take black side signal)
PIP display abnormal	● Check if it is reasonable that the item numerical of "horizontal width" and "vertical height" , "horizontal position" and "vertical position" of "PIP" submenu.
Fade in fade out function is invalid	● Check whether automatically switch function is closed ● Whether the input signal of Picture 1 and picture 2 is effective.

Model introduction

LED-500CX

S	Expand SDI input/loop out
D	Expand external DVI input port
V	Expand external VGA input port

Warranty

The whole unit warranty

- One year (from the buying date);
- If the invoice is lost, the 60 days after the production date will be the warranty start date for the product.

The warranty provisions

- The machine soaking and collisions produced besmirch or surface scratches and other abnormal using causes of malfunction or damage;
- Demolition machine or modification, which is not to be agreed by our company;
- Using in the not specified used working conditions, resulting in fault or damage (such as high temperature, low voltage or unstable etc.);
- Force majeure (such as fire, earthquake, etc.) or natural disasters (like lightning, etc) caused the fault or damage;
- Beyond the product warranty.