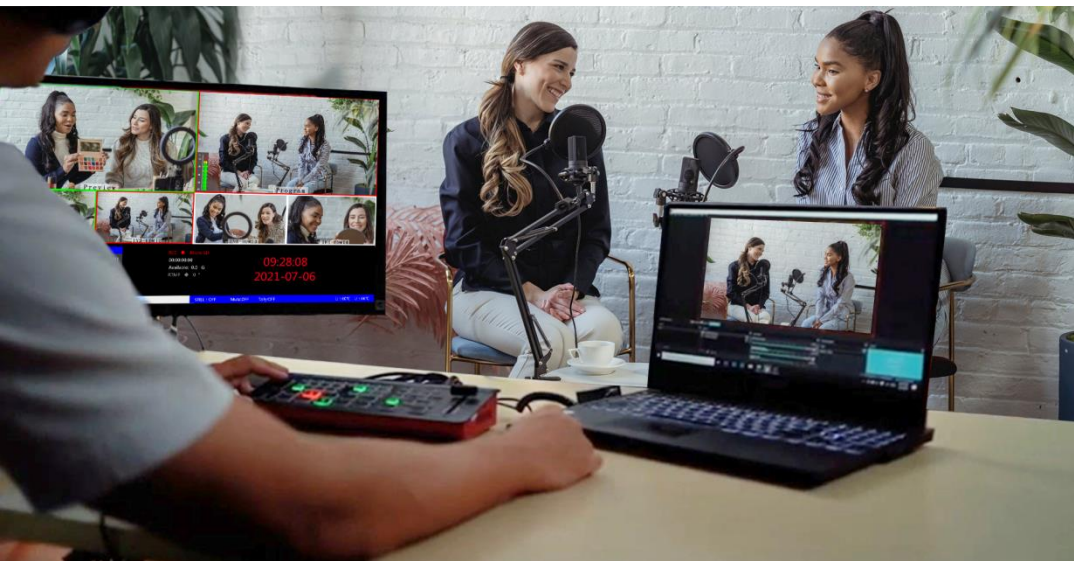


DeviceWell®
中帝威科技

使用手册

Users' Manual

VER 2.0



五通道高清视频切换台 5-CH HD SWITCHER

语言 LANGUAGES

中文.....01

English.....20

安全须知

如果忽视这些注意事项，可能导致人员伤害或伤亡，可能导致设备损坏、数据丢失、设备性能降低或不可预知的结果。

**电器安全特性**

- 为避免可能的电击造成严重损害，在搬动产品之前，请先将电源线暂时从产品电源接口处移除。
- 当您需要加入新的硬件到产品中或移除产品中现有硬件时，请务必先关闭产品电源。条件允许的情况下，建议将电源线暂时从产品接口处移除。
- 使用前应确认产品是否已接地，电源电压是否已调整到产品适用的范围内。否则将可能导致产品以外损坏、性能降低或不可预知的结果。
- 请勿使用松动或损坏的电源插座或在手潮湿的时候接触电源插座，否则将有触电和起火的危险。
- 若听到电源线和电源接口处有噪音，请立即拔下电源线，并向您的销售代表寻求帮助，否则将有起火或触电的危险。
- 若如有异物或液体进入产品或需要清洁产品时，请从产品上移开电源线以及其他的任何电缆线，否则将有触电、起火和损坏产品的危险。
- 若电源已损坏，请不要尝试自行修复。请联系专业技术服务人员或经销商来处理。

**Caution**

- During transportation, handling, and installation of switchboard equipment, avoid collisions between the switchgear equipment and doors, walls, shelves, etc.
- When the equipment is unpacked and transported, it is strictly forbidden to put it down and drag it gently to avoid damage to the switchboard equipment.
- Do not place the switcher equipment in a flammable, explosive atmosphere or smoke environment. Do not perform any operation in this environment.
- Operating equipment should be kept away from water and moisture. The water in the switchgear or moisture will cause damage to the circuit of the switchgear equipment.
- A certain amount of heat will be generated during the operation of the switcher. Ensure that the switchgear equipment is ventilated and the switcher device can operate normally.

**Danger**

- It is a fatal hazard that indirect contact with the power supply by wet objects is prohibited. Unregulated, incorrect high-voltage operation can cause accidents such as fire or electric shock.
- It is forbidden to install and remove the switchgear equipment and power cord. When the power cord is in contact with the conductor, an arc or spark may be generated, which may result in fire or electric shock.

由于产品功能的不断更新，您手中的用户手册可能会与实际应用有所出入，最新用户手册请从 Devicewell 官方网站下载，此用户手册更新日期为 2022 年 9 月 18 日。

Due to the continuous update of product functions, the user manual in your hand may differ from the actual application. Please download the user manual from the official website of Devicewell recently. The update date of this user manual is Sep. 18, 2022.

注意：不同型号对应不同的产品功能，请根据您所购买型号按用户手册内型号对照表匹配所购买型号的参数，本说明书以 HDS7305 的功能参数为例展开说明。

Note: Different models correspond to different product functions. Please match the parameters of the purchased model according to the model comparison table in the user manual according to the model you purchased. This manual takes the function parameters of HDS7305 as an example to expand the description.

未来如有技术变动，恕不另行通知。

In the future, there will be technical changes without notice.

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1.概述

1.1 产品介绍

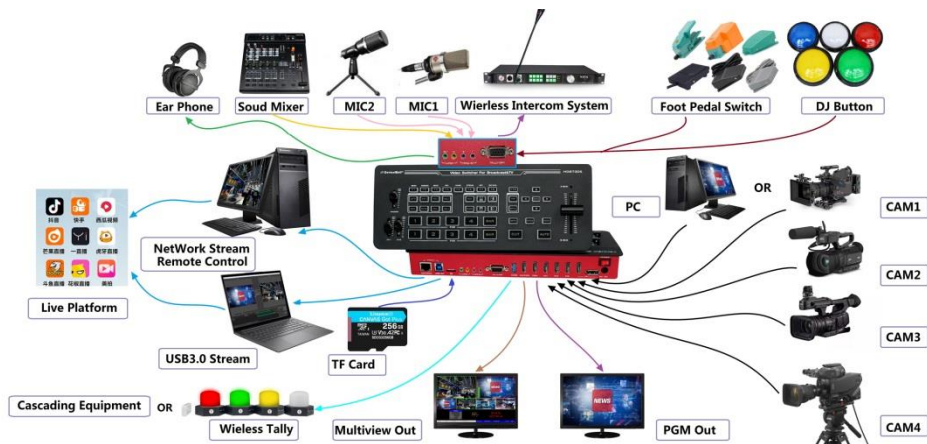
中帝威(DeviceWell)高清视频切换台 HDS7105/HDS7105S/HDS7105P/HDS7305, 采用便携式一体化设计, 金属外壳, 体积小重量轻, HDS7305 标准尺寸: 280mm*110mm*36mm, HDS7105P 标准尺寸: 280mm*110mm*47.5mm, HDS7105/HDS7105S 标准尺寸: 236mm*105mm*47.5mm 适用于小型外出场景的视频特效切换需求。设备集成多画面预览处理器、特效发生器、音频处理器、控制键盘等切换台常用组件。

设备支持 4 路 HDMI+1 路 DP 信号输入, 共计 5 路视频信号。可同步输出外部预览信号。设备支持 HDMI 内嵌音频+外部模拟音频, 混合处理后, 可嵌入到输出的 HDMI 信号中, 也可从模拟端口输出。所有输入信号的分辨率自动适应, 输出信号分辨率可按需求选择, 相当灵活。5 通道切换台适用于现场演出、课程录制与棚内导播等, 该切换台具备多种功能, 如多种格式视频输入且输入分辨率自适应, 模拟音频输入输出, 音频加嵌解嵌, 混音, 抠像, 画面开窗, TF 卡录制, RJ45 网口推流, 具备远程升级能力。

2.功能特性

中帝威五通道高清视频切换台是一款多功能切换台, 无需专业知识, 只需通过简单操作即可进行视频切换和音频混合。本机可在广电、直播和各种活动场所中使用。

- ◆ 便携式一体化设计
- ◆ 金属机身, 强度高, 重量轻
- ◆ 最多支持 4 路 HDMI+1 路 DP 输入
- ◆ 支持 TF 卡录制 PGM 画面
- ◆ 支持网络 RTMP 推流
- ◆ 支持 USB3.0 推流
- ◆ 支持 DCB2 控制, 视频拓展
- ◆ 支持 GPI 控制, 支持脚踏板, 控制手等
- ◆ 支持 MIC 及 LINE 音频输入
- ◆ 支持模拟 LINE 音频输出
- ◆ 支持色度键、亮度键功能
- ◆ 支持音频跟随、混音功能
- ◆ 支持一键画面冻结功能
- ◆ 多画面输出: 1路HDMI
- ◆ PGM输出: 1路HDMI
- ◆ 支持MIX /FADE等特效切换
- ◆ 支持CUT硬切, AUTO特效切换
- ◆ 支持中帝威无线TALLY灯
- ◆ 支持Tally/网络控制
- ◆ 内置机箱温度检测及风扇智能控制系统
- ◆ 支持软件在线升级



2.1 HDS7 系列 MINI 高清视频导播切换台型号功能对照表



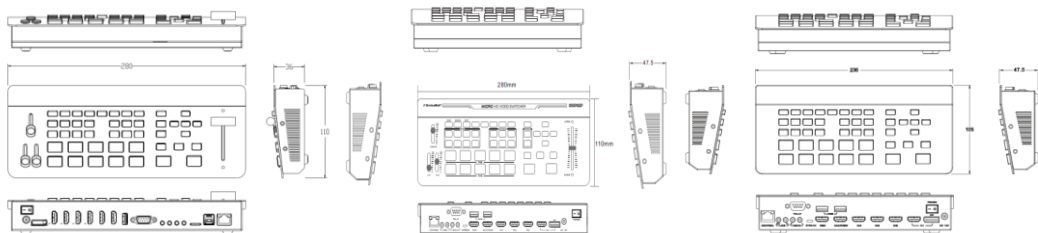
功能分区	功能介绍	HDS7105S	HDS7105	HDS7105P	HDS7305
产品接口	输入通道	4*HDMI+1*DP	4*HDMI+1*DP	4*HDMI+1*DP	4*HDMI+1*DP
	PGM 输出	HDMI*1	HDMI*1	HDMI*1	HDMI*1
	多画面预览输出	HDMI*1	HDMI*1	HDMI*1	HDMI*1
	Type-C/ UVC 输出	X	√	√	X
	DCB 控制	√	√	√	√
	USB3.0 推流	X	X	X	√
	2 路 MIC 输入	√	√	√	√
	1 路 LINE IN 输入	√	√	√	√
	1 路 LINE OUT 输出	√	√	√	√
	TF 卡录制 PGM 画面	X	X	X	√
	网口 RTMP 推流	X	X	X	√
	T-bar 一键切换	X	X	√	√
	Tally/网络控制	√	√	√	√
	网口在线升级	√	√	√	√
	3 组音频控制推子	X	X	√	X
特效处理	色度键 Chroma Key	X	X	X	√
	亮度键 Luma Key	X	X	X	√
	音频跟随	√	√	√	√
	音频混音	√	√	√	√
	一键画面冻结	√	√	√	√
	风扇智能温控速率调节	√	√	√	√
	PC 软件控制	√	√	√	√
	MIX /FADE 特效切换	√	√	√	√
	3 种转场速率调节	√	√	√	√
	画中画 (PIP)	√	√	√	√
	彩条信号输出	√	√	√	√
	分辨率支持	1080P	1080P	1080P	1080P
	输入分辨率自适应	√	√	√	√
	色域	RGB	RGB	RGB	RGB
	输出分辨率可调	√	√	√	√
FTB 应急黑场	√	√	√	√	

2.2 设备尺寸

HDS7305 尺寸: 280mm*110mm*36mm,

HDS7105P 尺寸: 280mm*110mm*47.5mm,

HDS7105/HDS7105S 尺寸: 236mm*105mm*47.5mm



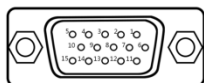
3.接口规格说明

3.1 接口介绍



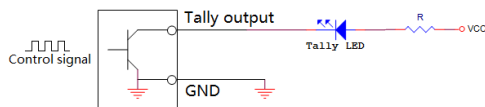
序号	接口定义	说明
1	Stream out	RTMP 网口推流
2	USB3.0 Stream	USB3.0, UVC 推流
3	TF 卡	TF 卡录制
4	LINE IN/OUT	3.5mm 立体声音频输入/输出
5	MIC IN	2 路麦克风输入
6	TALLY/GPI	接导播通话系统 (DB-15) /GPI 控制
7	DCB 2	DCB 控制(设备级联/无线 TALLY/外接键盘)+视频拓展
8	MULTIVIEW	HDMI 多画面导播输出
9	HDMI OUT	PGM 直播输出
10	HDMI IN/DP IN	4 路 HDMI+1 路 DP 输入, 第一路输入可以切换为 DP 输入
11	DC 12V	电源输入
12	电源开关	电源开关按键

3.2 TALLY-GPI 接口



PI	(Tally) 功能	PIN	(GPI) 功能
11	PGM-IN1	1	GPI-IN1
12	PGM-IN2	2	GPI-IN2
13	PGM-IN3	3	GPI-IN3
14	PGM-IN4	4	GPI-IN4
6	PVW-IN1	10	GPI-IN5
7	PVW-IN2	15	GPI-IN6
8	PVW-IN3	5	GND
9	PVW-IN4		

TALLY 联机示意图:



注: Tally LED: 为外接显示设备

Tally output : 低电平有效 (Tally LED 亮灯)

高电平无效 (Tally out 熄灯)

GPI 可选功能表:

GPI-Inx 可选功能		说明
1	PGM1	模拟 PGM1 按键消息
2	PGM2	模拟 PGM2 按键消息
3	PGM3	模拟 PGM3 按键消息
4	PGM4	模拟 PGM4 按键消息
5	PGM BAR	模拟 PGM BAR 按键消息
6	CUT	模拟 CUT 按键消息
7	AUTO	模拟 AUTO 按键消息
8	MUTE	模拟 MUTE 按键消息
9	FTB	模拟 FTB 按键消息
10	STILL	模拟 STILL 按键消息

GPI 控制示意图:



3.3 技术参数

产品名称	一体式HDS7系列 Mini 切换台 4路HDMI+1路DP 5通道	
产品型号	HDS7105/HDS7105S/HDS7105P/ HDS7305	
视频 信号 输入	输入信号	HDMI1.4/DP1.2 视频信号
	连接器	标准
	反射损耗	>15dB 5MHz~3GHz
	信号幅度	800mV±10%(HDMI)
	阻抗	100Ω (HDMI)
	均衡	自适应
	DVD 输入 HDMI 支持	480i/576i, 480p/576p, 720p, 1080i, 1080p
电脑 HDMI 输入支持	1920x1080, 1680x1050, 1600x900, 1440x1050, 1366x768, 1360x768, 1280x1024, 1280x960, 1280x800, 1280x768, 1280x720, 1280x600, 1152x864, 1024x768, 800x600	

视频 信号 输出	输出信号	HDMI 视频信号
	分辨率	1080P60Hz/1080P50Hz/1080P30Hz/1080P25Hz/ 1080P24Hz/1080I60Hz/1080I50Hz
	连接器	标准
	反射损耗	>15dB 5MHz~3GHz
	信号幅度	800mV±10% (HDMI)
	阻抗	100Ω (HDMI)
	直流偏移	0V±0.5V
	时钟恢复	支持
控制 参数	控制协议	CAN 总线
	连接端口	15 针 D 型口
	网络控制	RJ45, 100M
常规 参数	电源	DC 12V
	功率	<25W
	控制面板	支持现场制作, 集成多种按键
	工作温度	0℃~50℃无冷凝
	存储温度	-20℃~75℃
	工作湿度	20%~70%RH

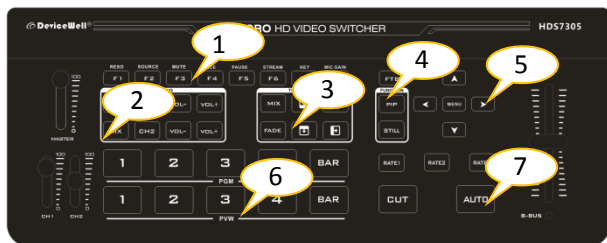
4. 控制面板及接口

在使用中帝威高清切换台设备前, 恳请您能花几分钟时间阅读本章节。本章节将为您详细介绍中帝威高清切换台的面板及接口, 以方便您后续的使用和操作。

中帝威高清切换台设备外壳使用新型金属材料制成, 新型金属外壳具备高强度特性提升了整机的抗摔、抗压、抗震能力, 有效保护了设备内部的元器件。超轻薄的特性使得设备在运输和维护过程中更加便捷, 无需借助其它设备; 同时也具有无可比拟的散热性能。

除了外壳的创新, 中帝威高清切换台对接口连接器也做了全新的优化。采用全新 RoHS 标准的环保材料, 在耐用程度和环境保护上要求更为苛刻, 为您提供更稳定, 更环保, 性价比更高的产品。

4.1 控制面板



4.1.1 分区说明

序号	名称	说明
1	功能区	一键启动特殊功能
2	音频控制区	对音频跟随、混音进行设置及音频音量、通道控制
3	转场特效控制区	选择转场特效
4	综合控制区	FTB、PIP 和 STILL 特效
5	菜单控制区	使用按键设置菜单信息
6	PGM 与 PVW 选择区	直播与预监选择
7	转场控制区	控制转场切换和转场速率调整

4.1.2 按键说明

4.1.2.1 功能区

●F1---RESO 切换输出分辨率

按下按键面板的 F1 可以调整 PGM 画面输出的分辨率，每按下一次调整一次输出分辨率，分辨率 1080P60Hz/1080P50Hz/1080P30Hz/1080P25Hz/1080P24Hz/1080I60Hz/1080I50Hz 可以选择。

●F2---SOURCE 通道切换控制

按下按键面板的 F2 可以对第一通道的输入源进行选择，当同时在设备背面的信号输入接口接入 HDMI 和 DP 信号时，按下 F2 后可以在 IN1-HDMI1 和 IN1-DP1 中选择切换。

●F3---MUTE 一键静音功能

按下 F3 按键灯亮，表示 PGM 输出音量关闭，在多画面菜单下可以看到 MUTE 的状态。

●F4---RCE 一键录制功能

按下 F4 按键灯亮，PGM 画面录制功能开启。

●F5---PAUSE 暂停录制

在录制的时候按下 F5 暂停录制，F5 按键灯亮，录制图标显示双竖线，在按下 F5 按键灯熄灭继续录制。

●F6---STREAM RTMP 网口一键推流功能

提前通过 STREAM 网口进入 WEB 后台界面，把平台的推流地址保存到切换台，然后按下 F6 一键推流，推流成功多画面状态页面显示 RTMP 后面的方块图标长亮红色，如果不成功会显示灰色和报错信息。

●F7---KEY 复用功能键

F7 是复用键，需要进入菜单的系统设置里面去设定这个键的功能，设定色度键就是抠像功能，设定亮度键就是叠加字幕功能，设定竖屏 OSD 需要配合中帝威 PM1005/PM1007 监视器才有效果。

4.1.2.2 音频控制区

● 音频跟随模式的使用方法：

1、按下操作面板的 AFV 按键，按键此时会亮绿色灯，对应多画面的菜单也会显示当前音频状态，菜单里面音频模式显示跟随，表示音频处于跟随模式；如右图所示

（注意：图片中显示的按键颜色与实际效果图片有所偏差，请见谅）



2、音频跟随模式的通道有 IN1、IN2、IN3、IN4，对应的操作面板的按键（此时按键面板中 PGM 的 2 亮起，表示正在操作 IN2 信号源）如下图所示



3、音频跟随模式的音量大小调整，通过操作面板的按键来控制；按下跟随模式的 AFV 按键（显示绿灯），会默认跟随 PGM 直播通道的音频，此时需要增加或是减少音量，只需要按 AFV 旁边的 VOL+（增加音量）和 VOL-（减少音量）来调整。或者不断上下调整 CH1 的音频推子的位置，对应的菜单部分也可以显示当前音量大小。



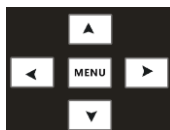
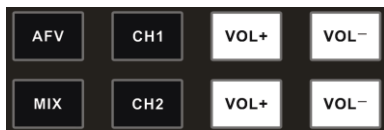
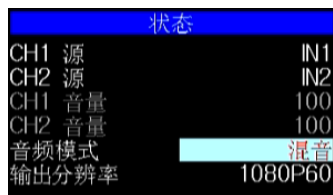
● 混音指派模式的使用方法：

1、按下操作面板的 MIX 按键，按键此时会亮绿色灯，如右图所示

对应多画面的菜单也会显示当前音频状态，菜单里面音频模式显示混音，表示音频处于混音指派模式，如右图所示

2、混音指派的通道有 IN1、IN2、IN3、IN4、PHONE_IN、MIC_IN1、MIC_IN2 在混音指派模式下，多了两种音频加嵌功能；PHONE_IN 表示 3.5 音频接口，MIC_IN 表示 3.5mm 麦克风音频接口；PGM 直播输出可以同时任意混音两路音频，两路音频的音量大小也可以分别调整。

3、混音指派的音频通道调整：是通过面板上面的按键来调整的，其中包括音频控制区和菜单控制区来调整的。如下图所示



按下按键面板中的 MIX（显示绿灯），再按下“MENU”按键，多画面的菜单会做出相应的变化，按下“MENU”进入第一路音频的通道选择，使用菜单中的“上下”按键进行通道选择，可以从 IN1、IN2、IN3、IN4、PHONE_IN、MIC_IN1、MIC_IN2 选择，确定选择后按下“MENU”退出；如右图所示第一通道的音频源从 IN1 变成了 IN4。

状态	
CH1 源	IN1
CH2 源	IN2
CH1 音量	100
CH2 音量	100
音频模式	混音
输出分辨率	1080P60

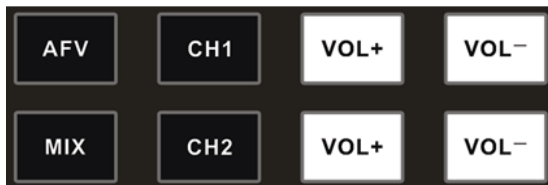
CH2 音频通道的选择跟 CH1 相同的操作方法；按下“MENU”按键后，调整第二路音频，再按下“MENU”按键进入第二路音频通道选择有 IN1、IN2、IN3、IN4、PHONE_IN、MIC_IN1、MIC_IN2，确定选择后按下“MENU”退出；如右图所示第二通道的音频源从 IN2 变成了 MIC_IN1。

状态	
CH1 源	IN1
CH2 源	MIC_IN1
CH1 音量	100
CH2 音量	100
音频模式	混音
输出分辨率	1080P60

4、音频指派通道的音量调整：直接按下音频控制区 VOL+/VOL- 键来

控制音量大小，或者不断上下调整 CH1 和 CH2 的音频推子的位置，对应的菜单部分也可以显示当前音量大小。音量值在 0-100 范围，如右图所示第一路通道的音量从 44 增加到了 100。第二路混音音量大小调整的操作同第一路混音音量调整操作一致。

音量推子 MASTER:表示总音量推子，在混音跟随模式下都需要把此推子推到最顶上。



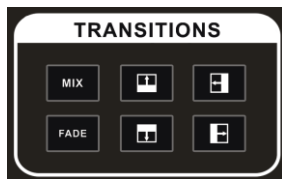
4.1.2.3 转场特效控制区

转场模式分为三种：

MIX 混合特效转场、FADE 淡入淡出转场、划像转场

其中划像转场包括：向上、向下、向左和向右划像转场方式。

● MIX 混合转场特效



MIX 特效为混合转场特效，设置后转场在主输出会有原直播画面逐渐减淡，然后直到完全过渡到新的直播画面。点击特效控制区的 MIX MIX（按下后显示绿灯），然后点击 AUTO 或推杆或 CUT 便可以进行切换。效果图如下



MIX 混合过渡特效，在 A 的画面中叠加逐渐叠加 B 画面，直至转场到最后，画面完全替换为 B 画面

● FADE 淡入淡出转场特效


点击特效控制区的 FADE  (按下后显示绿灯), 然后点击 AUTO 或推杆或 CUT 便可以进行切换。效果图如下



FADE 淡入淡出特效, A 逐渐画面变暗直至完全为黑色, 再逐渐由黑色变为 B 画面。

● 四种特效划像转场

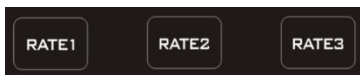
划像转场方式一共有四种转场方式, 分别是向上/向下/向左/向右四种转场方式。

向上转场: 点击特效控制区的  (按下后显示绿灯) 然后点击 AUTO 或推杆或 CUT 便可以进行切换。效果图如下, 其他三种转场操作相同。



向上划像转场特效, A 画面不变, B 画面通过向上方向逐渐划入, 直至画面完全变成 B 画面

● 转场速率调整



在操作转场特效控制区时, 还可以通过操作按键面板中的 RATE1、RATE2、RATE3 控制转场速率, (rate1: 640ms; rate2: 1280ms; rate3: 2560ms) 注: 只有使用 AUTO 转场时才有效果

4.1.2.4 综合控制区

● FTB 应急黑场

FTB 按键定义为应急黑场画面输出, 按下按键绿灯闪烁, 开启 FTB 应急黑场输出功能, 按下按键绿灯熄灭, FTB 应急黑场功能关闭;

● PIP 画中画特效

画中画特效: 按下控制面板的  (按下后显示绿灯),

然后点击 AUTO 或 CUT 便可以进行切换。效果图如下

此时的液晶屏上的信息会切换成 PIP 画中画设置, 按下菜单键后可根据需求设置。如右图所示



画中画大小与位置

可以使用菜单按键对 PIP 画中画的参数进行设置, 情况如下(水平位置/垂直位置大小是以最小显示图像为例的)

水平位置设置: 从最左上端到最右上端的值是 0-1440, 每按下按键一格数值增加/减少 10。

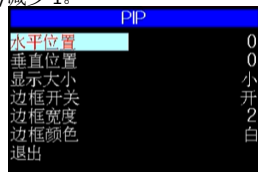
垂直位置设置: 从最左上端到最左下端的值是 0-810, 每按下按键一格数值增加/减少 10。

显示大小设置: 可以选择小/中/大设置。

边框开关设置: 可以选择开/关设置。

边框宽度设置: 边框宽度可以选择 2-7 厚度边框, 每按下按键一格数值增加/减少 1。

边框颜色设置: 可以选择白/红/绿/绿设置边框颜色。



● STILL 画面冻结特效

画面冻结特效：按下控制面板的 **STILL**（按下后显示绿灯），然后输出的 PGM 视频动画将会进入冻结现象，再次按键即可解冻画面，效果图如右图所示。



4.1.2.5 PGM 与 PVW 的选择

● 多画面输出窗口介绍

其中 Preview 和 Program 分别为预监和直播输出。如下图所示下方有 4 个窗口对应的是输入源查看，分别对应切换台控制面板上的 1-4 号按键。



预览

直播



● PGM 和 PVW 输出信号

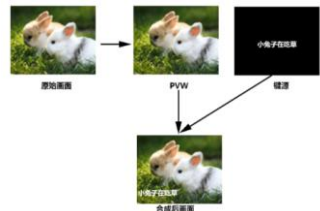
设备接入视频信号源后，按下按键面板中的 1 (PGM) 和 2 (PVW)，在输出的多画面监视器中的直播和预监信号源分别是 1 (PGM) 和 2 (PVW)，信号源分别是 HDMI IN1 和 HDMI IN2。效果图如右图。

● PGM 和 PVW 源切换

如果想让多画面中的直播与预监信号源切换（直播 \leftrightarrow 预监）

假设想要多画面中的直播信号源 1 (PGM) 和预监信号源 2 (PVW) 变换成 2 (PGM) 和 1 (PVW)，只需要按下按键面板中的 2 (PGM) 和 1 (PVW)，再点击 AUTO 或 CUT 切换即可。直播 PGM 信号源 1-4 可以和预监 PVW 信号源任意切换。

按下按键面板中的 BAR 按键后屏幕将输出彩条。



● Luma KEY 亮度键

开启本功能会扣去键源的黑色部分。然后与 PGM 画面重叠从而达到抠像和叠加背景的目的，此功能一般用于虚拟演播室叠加字幕等。

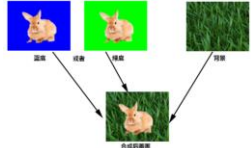
把黑色背景的白色字体视频或者图片切换到 PVW 预览窗口，开启 Luma KEY 亮度键功能，此时菜单栏会出现一个亮度键参数设置界面，然后用 CUT/AUTO/推杆切换都可以把字符叠加到 PGM 窗口。

按下 F7 亮度抠像后，显示菜单会显示当前亮度键抠像 Luma KEY 信息，如右图。



● Chroma KEY 色度键

色度键抠像支持动态视频源像与静态源抠像，切换机会抠去键源的蓝色或绿色部分，保留其它颜色，然后与 PGM 画面重叠从而达到抠像和叠加背景的目的，此功能一般用于虚拟演播室叠加背景墙等。



把蓝色背景或者绿色背景切换到 PVW 预览窗口，再开启 Chroma KEY 色度键功能。此时菜单栏会出现一个色度键的参数设置界面，通过按键选择你抠像的背景，选择完后可以通过 CUT/AUTO/推杆实现抠像，此时你要叠加的图像出现在 PGM 直播画面中。



当按下 F7 键时，显示菜单会显示当前色度键抠像 Chroma Key 信息，如右图。

视频源项可以选择键源，KEY 类型有色度键_绿和色度键_蓝，级别设置范围在 0-64。

5. USB 接口对接 OBS 软件说明

步骤 1: 通过 USB 数据线将单板与 WIN7 相连, WIN7 端识别后, 设备列表会出现 HDS7305 Audio 和 HDS7305 Video, 代表识别 ok.

如图 1 所示。图 1 设备管理器中 Audio 和 Video 节点。

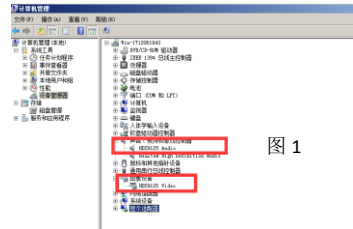


图 1

步骤 2: 添加视频捕获设备

打开 OBS 软件，点击界面左下角的来源框的“+”然后点击“视频捕获设备”，如图 2 所示。

点击“视频捕捉设备”后将出现一个可以修改名称的界面，可以自定义名称。如图 3 所示。



图 2



图 3

步骤 3: 设置视频捕获设备属性

① 设置视频属性。

设备选择: HDS7305 Video IN;

分辨率/帧率类型选择: 自定义; 分辨率: 必须选择与切换台的 PGM 输出分辨率一致的。除了分辨率以外, FPS 这一项, 也需要选择成跟输出分辨率的帧率一致。如图 4 所示。

② 下拉设置音频属性。

音频输出模式选择: 输出桌面音频 (WaveOut); 勾选使用自定义的音频设备

音频设备选择: Capture Input terminal(HDS7305 Audio), 如图 5 所示。



说明:

图 4

图 5

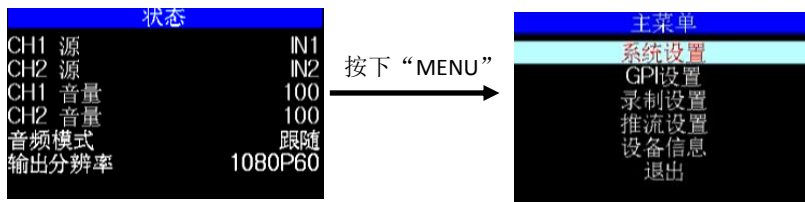
- 1.最新 OBS 版本 25.0.1 可以在视频格式选择 H264, 这样图像质量会有所提升。
- 2.每次使用前需要先将设备与电脑连接, 再打开 OBS 软件, 否则 OBS 软件无法识别 USB 设备。

6.系统菜单设置

● 菜单显示

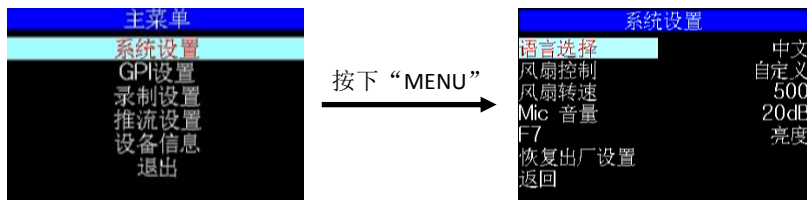
在菜单栏中, 您可以对设备进行 IP 设置、系统恢复出厂设置、更换语言等操作。

在开机默认状态下, 按下“MENU”, 进入主菜单。如下图所示



在状态栏下操作 MENU, 可对音频模式、输出分辨率进行设置: 音频模式; 菜单选择混音或者跟随; 输出分辨率: 菜单即可操作, 可选择 1080p60/1080p50/1080p30/1080p25/1080p24/1080i50/1080i60

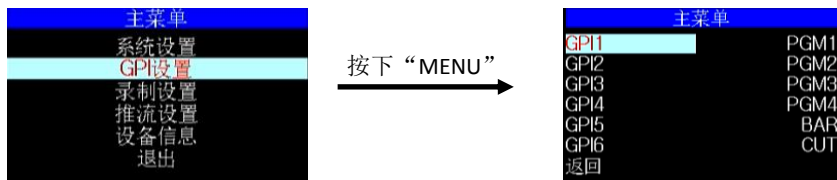
● 系统设置



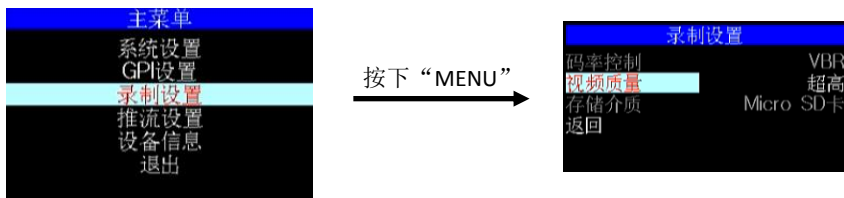
在系统设置菜单内，您可以在语言选择中：选择中文或英文两种不同语言；风扇转速也可进行手动控制，设备出厂默认智能温控状态，也可以进入下一阶菜单进行手动选择 10 种转速；F7 是复用键，需要去菜单的系统设置里面去设定这个键的功能，设定色度键就是抠像功能，设定亮度键就是叠加字幕功能，设定竖屏 OSD 需要配合中帝威 PM1005/PM1007 监视器才有效果。MIC 音量可调节。

在使用过程中若遇到未知的错误，您可以选择恢复出厂设置，进行重置。

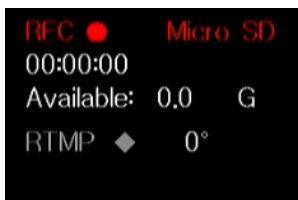
● GPI 设置



● 录制设置



录制设置中可以设置录制级别，有低、中、高和超高可设置，对应码率就是 6M/12M/18M/24M；存储的方式可以选择 TF 卡，在录制时 LED 会闪烁，在切换台的状态显示栏会实时显示录制的状态。



- 1.在录制时 LED 会闪烁，在切换台的状态显示栏会实时显示录制的状态。REC 显示红色，录制正在进行。
- 2.录制时长。
- 3.TF 卡录制剩余空间。
- 4.推流画面：按下 F6 按键灯亮，TRMP 显示红色，录制和推流画面同时旋转 90 度，多画面状态栏 RTMP 后面可以看到显示度数，正常 16: 9 的画面显示 0 度，竖屏显示 90 度。竖屏需要配合中帝威 PM1005/PM1007 监视器才有效果。

● 推流设置



按下“MENU”



推流设置界面的 Stream IP 是进入 WEB 界面添加推流地址的唯一途径，插上推流网口，设备会自动获取 IP 地址显示到推流设置菜单里面，将此 IP 地址填写到浏览器进行搜索进入 WEB 界面。注意：USB 推流时，OBS 软件在选择帧率时需要与 PGM Out 的输出帧率一致，否则会影响录制和 RTMP 推流，导致录制和 RTMP 推流异常。

● 设备信息



按下“MENU”



在设备信息菜单内，您可以看到设备的版本信息，此处不可以修改。

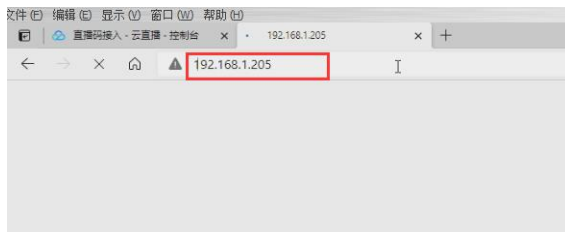
7.推流的使用说明

1、HDS7305 是硬件推流设备，需要通过设备侧面的 STREAM 接口连接到局域网；然后进入设备菜单里面的推流设置，有一项 Stream IP 对应后面的 IP 地址，这个 IP 地址是连接到局域网自动获取的 IP 地址，你需要通过这个 IP 地址进入 WEB 界面；

如下图自动获取 IP 地址是 192.168.1.205

2.首先我们需要一台电脑，打开浏览器输入我们设备推流设置菜单里面的 IP 地址；

例如下图，我们把自动获取的 192.168.1.205 IP 地址填写到浏览器进行搜索，就会进入 WEB 界面；



WEB 界面的使用方法:

1、用户设置

画面旋转顺时针 0/90/180/270 度，下拉框选择即刻生效，录制视频和推流视频同时旋转。

录制码率对应菜单里面设置的一样，低、中、高、超高等级。

推流码率设置范围 1-10Mbps,下拉框选择即刻生效;

2、推流设置

索引 1-8 组，表示可以保存 8 组推流地址在设备内部;

用户名是表示每组推流地址可以自己命名，命名只对字母和数字有效；在菜单里面的推流设置可以看到你在 WEB 界面保存的推流名称;



WEB 界面功能解析

- 1) 开启录制功能的时候，WEB 界面的画面旋转、录制码率等功能是禁止设置的，所以在开启录制功能之前请设置好参数。
- 2) 开启推流功能的时候，可以随时更改推流码率、画面旋转功能。
- 3) 如果更改了画面旋转参数，录制、推流功能都会对应生效，所以录制的视频和推流的视频都是旋转过后的画面，设置之前请确认自己想要的参数。
- 4) 单方面在设备端更改了推流码率、录制等级，WEB 界面的状态不会自动刷新，需要手动按下键盘的 F6(Stream)键刷新界面。
- 5) 连接上 WEB 界面过后，可以在界面里面更改 IP 地址，如果时间久了记不住 WEB 界面的 IP 地址，可以去菜单推流设置里面查看 WEB 界面 IP 地址。
- 6) 更改 IP 地址、推流设置，需要在参数设置模块下面进行保存设置。
- 7) 推流设置里面的索引可以保存 8 组推流，用户名只显示英文字符和数字，推流地址就是直播平台的地址。
- 8) 可以提前把推流地址通过 WEB 界面连接设备，把直播平台地址提前保存到设备里面，设备在现场可以随时选择之前保存好的直播平台地址进行推流。
- 9) WEB 界面里面，推流设置下面的读取设置可以读取设备里面保存的推流地址；比如设备里面保存了很多组推流地址，先选择索引，然后点击读取，就可以读取到设备里面之前保存的推流地址。
- 10) 设备断电过后，录制推流的画面旋转功能不保存。

8. 切换台软件控制

HDS7305 支持对接软件控制，软件操作面板和切换台按键面板对应使用（软件可从中帝威官网（www.devicewell.com）下载 HDS7305_2023 款 PC 控制软件）。



(二)搜索到设备之后，可以在控制界面对切换台的：功能区、黑场控制区、音频控制区、转场特效控制区、综合控制区、PGM 与 PVW 选择区和转场控制区进行设置。如右图所示。

● 功能区

F1--- 分辨率控制

点击按键面板的 F1 后可以调整画面输出的分辨率，每按下一次调整一次输出分辨率，分辨率有

1080P60Hz/1080P50Hz/1080P30Hz/1080P25Hz/1080P24Hz/1080I60Hz/1080I50Hz 可以选择；在右侧下拉菜单单里面选择，如右图所示。

● 黑场控制区

FTB---黑场控制区

在直播过程中，如果遇到突发情况可以按下 FTB 黑场键，此时 PGM 直播画面将输出黑屏，软件控制面板中的 FTB 将显示红灯闪烁，再次按下 FTB 取消黑场设置。如右图所示。

● 音频控制区（默认为 AFV 跟随模式）

(一) AFV 跟随模式

按下 AFV 跟随模式（显示绿灯），音频跟随模式的通道有 IN1-HDMI1、IN2-HDMI 2、IN3-HDMI 3、IN4-HDMI4，默认跟随 PGM 直播通道的音频，此时只可以调整音频的音量大小，需要增加或是减少音量可以通过滑动块进行 0-100 音量的设置。如右图所示。



(二) MIX 混音模式

按下 MIX 混音模式（显示绿灯），支持两通道混音模式，混音指派的通道有 IN1-HDMI1、IN2- HDMI 2、IN3- HDMI 3、IN4- HDMI4、PHONE_IN、MIC_IN1、MIC_IN2，可以通过按下控制面板上的 CH1 和 CH2 来选择音频通道。需要增加或是减少音量可以通过滑动块进行 0-100 音量的设置。如右图所示。

● 转场特效控制区

在转场特效控制区域中，可以通过按下 MIX（混合转场）、FADE（淡入淡出转场）和上下左右共六种特效转场控制设置，如右图所示。

在转场控制区中，可以对转场的速率进行设置，按下面板的 RATE1、RATE2、RATE3 控制转场速率定义，（rate1: 640ms; rate2: 1280ms; rate3: 2560ms）注：只有使用 AUTO 转场时才有效果。

● 综合控制区

(一) PIP 画中画设置

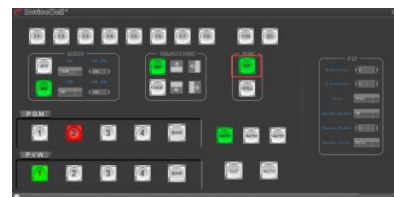
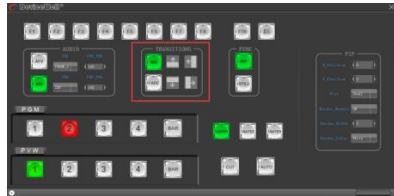
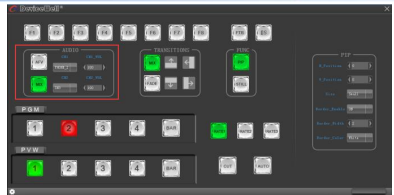
按下软件控制面板中的 PIP（显示绿灯）进入画中画设置，此时可以对画面进行水平位置、垂直位置、显示大小、边框开关、边框宽度、边框颜色进行设置。如右图所示。

(二) STILL 画面冻结设置

按下软件控制面板中的 STILL（显示绿灯）进入画面冻结设置，此时可以对直播输出的画面进行冻结，再次点击 STILL 可以解除冻结效果。如右图所示。

● PGM 与 PVW 选择区

PGM 和 PVW 分别为预览和直播输出，可以通过点击软件控制面板上的 1-4 号按钮切换台输入源。其中 BAR 为彩条输出。如右图所示注意：如果在设备端操作切换台，PC 端界面是不能同步显示的，必须点击同步按钮控制界面才会同步显示。



9. 同步地区时间操作说明

1. 到中帝威官网下载时间同步软件，www.devicewell.com 搜索关键词时间同步；
2. 双击打开时间同步软件；
3. 软件功能介绍，打开软件默认自动设置功能；

设备插上网线，跟电脑在同一个局域网内，点击自动同步，电脑会自动去同步你的设备时间，下图中红框标记是你设备连接正常的 IP 地址。

4. 手动设置，如果自行更改时间，需要勾选手动设置功能；填写你需要设置的时间过后，点击手动确定。





10. 故障及维修

(1) 输出图像受干扰会闪烁，可能是使用的线材质量较差，线材的屏蔽层没有做好。当使用环境附近有强烈的无线电的时候，无线电波会干扰到信号的传输，导致信号闪烁不稳定。请使用正规厂家生产的线材，例如百通，佳耐美。

(2) 当拔插音视频接口时，如果感觉到有明显的静电，有可能设备电源线没有良好接地。请按正确方法接地，否则容易损坏主机，缩短主机寿命。

(3) 当 RJ45 控制不了切换台时，检查控制软件所设定的通信口是否与所接设备的串口相对应；检查电脑的通信口是否良好。

● 维护

请用柔软、干燥的抹布来清洁本设备。禁止用酒精、油漆稀释剂或汽油来清洁。确保本设备保存和工作在远离液体和污渍的环境中。用户没有自己处理的部件，所有服务和维修事项请联络本公司或者其它授权的分销商。

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2. 对因使用不当或连接到不兼容设备所造成的损坏进行维修；
3. 对因使用了非 DeviceWell 生产或提供的零部件所导致的损坏或故障进行维修；
4. 对经过改装或和其他产品进行组装的产品进行保养维修（产品经改装或组装后会增加保养维修所需时间或保养难度）。本保修条款由 DeviceWell 提供，它可取代所有其他明示或隐含的保修。DeviceWell 及其供应商对任何有关适销性及就特定用途的适用性等隐含保证不作任何担保。DeviceWell 负责为用户提供缺陷产品的维修或更换服务是完整和排他性补救措施，不论 DeviceWell 或其供应商是否事先获悉发生间接、特殊、偶然或必然损坏等损坏的可能性。若用户对本设备进行非法使用，DeviceWell 概不负责。对因使用本产品造成的一切损失，DeviceWell 概不负责。本产品的操作风险由用户自行承担。以上所有内容，DeviceWell 保留一切权利，并拥有最终解释权。

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1. Overview

1.1 Introduction

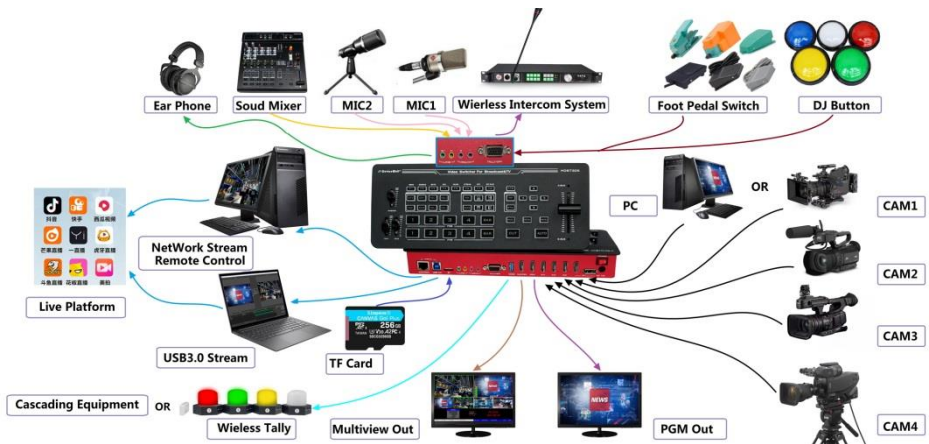
High-definition video switcher adopts a portable integrated design, metal casing, small size and light weight. HDS7305size:280mm*110mm*36mm,HDS7105Psize:280mm*110mm*47.5mm,HDS7105/HDS7105Ssize:236mm*105mm*47.5mm, which can be used for small-scale out-of-field video effects switching requirements. The device integrates multiview processor, special effect generator, audio processor, control keyboard and other common components of the switcher.

Switcher supports 4 HDMI + 1 DP signal inputs, a total of 5 video signals. The external preview signal can be output simultaneously. The switcher supports HDMI embedded audio + external analog audio. After mixed processing, it can be embedded in the output HDMI signal or output from the analog port. The resolution of all input signals is automatically adapted, and the output signal resolution can be selected according to requirements, which is quite flexible. For the needs of video switching such as radio and television, program production, live production of interviews and lectures, outdoor sports events, and school courseware production, the functions of the switcher can be fully met.

2. Functional characteristics

DeviceWell 5-CH HD video switcher is a multi-functional switcher, no professional knowledge is required, and video switching and audio mixing can be performed by simple operations. This machine can be used in broadcasting, live broadcast and various event venues.

- ◆ Portable integrated design
- ◆ Aluminum alloy body, high strength and light weight
- ◆ Integrated control keyboard audio fader and video fader
- ◆ Support up to 4 HDMI+1 DP inputs
- ◆ 2 MIC inputs
- ◆ 3.5mm analog audio input and output
- ◆ USB3.0 streaming
- ◆ DCB2 control + video expansion
- ◆ GPI control, support foot pedal, control handle, etc
- ◆ Support audio following and mixing functions
- ◆ Support HDMI audio de-embedding
- ◆ PGM output: 1 HDMI
- ◆ Multiview output: 1 HDMI
- ◆ Support MIX /FADE/WIPE and other special effects switching
- ◆ Support CUT hard cut and AUTO special effect switch
- ◆ Support supporting DEVICEWELL TALLY lamp system
- ◆ Support TF card to record PGM screen
- ◆ Support network RTMP streaming

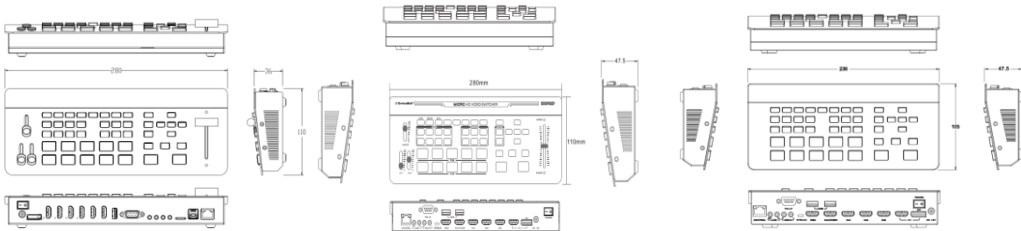


2.1 HDS7 Series MINI HD Video Switcher Function Comparison

Function	Function Introduction	HDS7105S	HDS7105	HDS7105P	HDS7305
Interfaces	Input	4*HDMI+1*DP	4*HDMI+1*DP	4*HDMI+1*DP	4*HDMI+1*DP
	PGM Output	HDMI*1	HDMI*1	HDMI*1	HDMI*1
	Multiview Output	HDMI*1	HDMI*1	HDMI*1	HDMI*1
	Type-C/ UVC Output	X	√	√	X
	DCB Control	√	√	√	√
	USB3.0 Stream	X	X	X	√
	2 LINES MIC Input	√	√	√	√
	1 LINE IN Input	√	√	√	√
	1 LINE OUT Output	√	√	√	√
	TF Card Recording PGM Screen	X	X	X	√
	Network Port RTMP Streaming	X	X	X	√
	T-bar One Click Switch	X	X	√	√
	Tally/Network Control	√	√	√	√
	Network Port Online Upgrade	√	√	√	√
	Three Groups Of Audio Faders	X	X	√	√
Special Effects	Chroma Key	X	X	X	√
	Luma Key	X	X	X	√
	Audio Follow	√	√	√	√
	Audio Mixing	√	√	√	√
	One Click Screen Freezing(STILL)	√	√	√	√
	Fan Intelligent Temperature Control Speed Regulation	√	√	√	√
	PC Software Control	√	√	√	√
	MIX /FADE Special Effects	√	√	√	√
	Three Kinds Of Transition Rate Adjustment	√	√	√	√
	Picture In Picture (PIP)	√	√	√	√
	Color Bar	√	√	√	√
	Resolution Support	1080P	1080P	1080P	1080P
	Input Resolution Adaptive	√	√	√	√
	Gamut	RGB	RGB	RGB	RGB
	Output Resolution Adjustable	√	√	√	√
FTB Emergency Black Field	√	√	√	√	

2.2 Size

HDS7305 Size: 280mm*110mm*36mm, HDS7105P Size: 280mm*110mm*47.5mm, HDS7105/HDS7105S Size: 236mm*105mm*47.5mm



3. Interface Specification

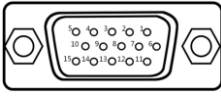
3.1 Interface Introduction



The Switcher interface is shown below.

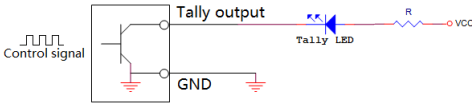
NO.	Definition	Description
1	Stream out	RTMP network port push stream
2	USB3.0 Stream	USB3.0, UVC stream
3	TF card	TF card recording
4	LINE IN/OUT	3.5mm Stereo audio in/out
5	MIC IN	2-CH microphone input
6	TALLY/GPI	wireless intercom system (DB-15) /GPI control
7	DCB2	DCB 2control (device cascade/wireless tally/external keyboard) + video expansion
8	MULTIVIEW	HDMI Multiview output
9	HDMI OUT	PGM live output
10	HDMI IN/DP IN	4-CH HDMI+1-CH DP input. The first input can be switched to DP input
11	DC 12V	Power input
12	Power switch	Power switch button

3.2 TALLY /GPI Interface



PI	Function(TALLY)	PIN	Function(GPI)
11	PGM-IN1	1	GPI-IN1
12	PGM-IN2	2	GPI-IN2
13	PGM-IN3	3	GPI-IN3
14	PGM-IN4	4	GPI-IN4
6	PVW-IN1	10	GPI-IN5
7	PVW-IN2	15	GPI-IN6
8	PVW-IN3	5	GND
9	PVW-IN4		

TALLY connection diagram:



Note: Tally LED: for external display device

Tally output: Active low (Tally LED is lit) High level is invalid (Tally out is off)

GPI Optional feature list

GPI-Inx Optional feature		Description
1	PGM1	Simulate PGM1 button messages
2	PGM2	Simulate PGM2 button messages
3	PGM3	Simulate PGM3 button messages
4	PGM4	Simulate PGM4 button messages
5	PGM_BA	Simulate PGM_BAR button messages
6	CUT	Simulate CUT button messages
7	AUTO	Simulate AUTO button messages
8	MUTE	Simulate MUTE button messages
9	FTB	Simulate FTB button messages
10	STILL	Simulate STILL button messages

GPI Control Schematic:



Foot Switch

DJ Button

3.3 Parameters

Name	4*HDMI+1*DP Switcher	
Video Signal Input	Input signal	HDMI1.4/DP1.2 video signal
	Connector	Standard
	Reflection loss	>15dB 5MHz~3GHz
	Signal amplitude	800mV ±10% (HDMI)
	Impedance	100Ω (HDMI)
	Balance	Adaptive
	DVD input HDMI support	480i/576i,480p/576p,720p,1080i,1080p,
	Computer HDMI input support	1920x1080,1680x1050,1600x900,1440x1050,1366x768,1360x768,1360x768,1280x1024, 1280x960,1280x800,1280x768,1280x720,1280x600,1152x864,1024x768,800x600,

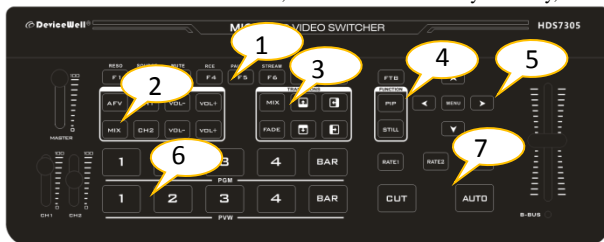
Video Signal Output	output signal	HDMI video output
	Resolution	1080P60Hz / 1080P50Hz / 1080P30Hz / 1080P25Hz / 1080P24Hz / 1080I60Hz / 1080I50Hz
	Connector	Standard
	Return Loss	>15dB 5MHz~3GHz
	Signal amplitude	800mV ±10%(HDMI)
	impedance	100Ω (HDMI)
	DC offset	0V ±0.5V
	Clock recovery	Support
Control Parameter	Control	9600 baud, 8 bits, 1 stop bit, no parity
	Connection	15-pin D-port, 2-RX, 3-TX, 5-GND
	Network control	RJ45,100M
General Parameter	power supply	12V/DC
	Power rate	<25w
	control panel	Support on-site production, integration of a variety of buttons.
	Operating temperature	0℃~50℃, No condensation
	Storage temperature	-20℃~75℃
	Working humidity	20%~70%RH
	Storage humidity	0%~90%RH, No condensation

4. Control Panel and Interface

Before using the HD Mini Switcher, please take a few minutes to read this section. This chapter will introduce you the panel and interface of the HD switcher to facilitate your subsequent use and operation.

The new high-strength characteristics of the new aluminum alloy with high-strength characteristics improve the anti-drop, anti-shock and shock-proof capabilities of the whole machine, and effectively protect the internal components of the equipment. Ultra-lightweight features make the unit easier to transport and maintain without the need for additional equipment; it also offers unparalleled thermal performance.

In addition to the innovation of the case, the HD switcher has also been completely optimized for the interface connector. Environmentally friendly materials with new RoHS standards are More demanding in terms of durability and environmental protection, to provide customers with more stable, more environmentally friendly, more cost-effective products.



4.1 Control Panel

4.1.1 Area Description

No.	Name	Description
1	Function area	Currently supports F1-F8 function
2	Audio control area	Mainly set the audio follow-up mix and audio volume control
3	Transition effect control area	Select transition effects
4	Integrated control area	FTB、 PIP and STILL effects
5	Menu control area	Setting menu information with keys
6	PGM and PVW selection	Program and preview selection
7	Transition control area	Control transition switching and transition rate adjustment

4.1.2 Key Description

4.1.2.1 Function area

●F1---Reso resolution control

Press F1 on the keypad to adjust the screen output resolution. Each time you press the button, you can adjust the output resolution. The resolutions are 1080P60Hz / 1080P50Hz / 1080P30Hz / 1080P25Hz / 1080P24Hz / 1080I60Hz / 1080I50Hz.

●F2--- Source channel switching control

Press F2 on the keypad to select the input source of the fourth channel. When the HDMI and DP signals are connected to the back interface of the switcher at the same time, you can choose between IN1-HDMI and IN1-DP after pressing F2.

●F3--- Mute one-key mute

Press F3 on the key panel to switch to the mute function, turn off all the audio volume output

●F4---RCE one-key recording function

Press the F4 button and the light is on

●F5--- PAUSE pause recording

When recording, press F5 to pause recording, the F5 button light is on, the recording icon shows a double vertical line, and the F5 button is pressed and the light is off to continue recording;

●F6---Stream RTMP network port one-click streaming function

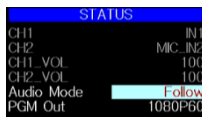
Enter the WEB background interface through the STREAM network port in advance, save the platform's push stream address to the switcher, and then press F6 to push the stream. The push stream is successful. The multi-screen status page displays the square icon behind RTMP. If it is unsuccessful Gray and error messages will be displayed;

●F7--- KEY Alternate function key

F7 is a multiplexing key. You need to enter the system settings of the menu to set the function of this key. Setting the chroma key is the keying function, setting the brightness key is the superimposing subtitle function, and setting the vertical screen OSD needs to cooperate with DeviceWell PM1005/PM1007 monitors are only effective.

4.1.2.2 Audio Control Area

- How to use the audio follow mode:



1. Press the AFV button on the operation panel, the button will light green at this time, and the corresponding multiview menu will also display the current audio status. The Audio Mode in the menu shows Follow, which indicates that the audio is in follow mode; as shown in the figure on the right.

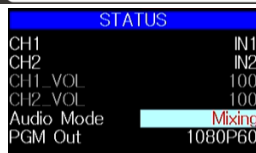
(Note: the color of the keys displayed in the picture is different from the actual effect picture.)

2. The channels of the audio follow mode are IN1、IN2、IN3、IN4 , and the corresponding operation panel keys .(the button panel 2 lights up at this time, indicating that Operate the IN2-HDMI2 signal source as shown below.)



3. The volume adjustment of the audio follow mode is controlled by the keys on the operation panel. Pressing the AFV button in the follow mode (green light is displayed) will follow the audio of the PGM live channel by default. At this time, you need to increase or decrease the volume. Next to VOL + (increase volume) and VOL- (decrease volume) to adjust.

Keep clicking the VOL + and VOL- buttons, the corresponding menu section can also display the current volume value.



● How to use mix assignment:

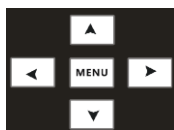
1、 Press the MIX button on the operation panel.

Lights up green as shown on the right.

The menu corresponding to the multiview will also display the current audio status. The Audio Mode in the menu displays Mixing, which indicates that the audio is in the mixing assignment mode, as shown in the right figure.

2. The mixing assigned channels are IN1、IN2、IN3、IN4、PHONE_IN、MIC_IN1、MIC_IN2. Under the mixing assignment mode, there are two more audio embedding functions; PHONE_IN means 3.5mm stereo audio interface, MIC_IN means 3.5mm microphone audio interface; PGM live output can mix two audio channels at any time, and the volume of the two audio channels can also be adjusted separately.

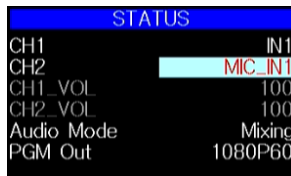
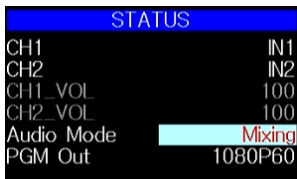
3. Audio channel adjustment for mixing assignment: It is adjusted through the buttons on the panel, including audio control area and menu control area. As shown below.



You can also press MIX (showing green light) in the key panel, then press the "up and down" buttons of the menu button to enter the audio channel selection, press the "down" button to enter the CH1 channel, click "MENU" to enter the audio source selection, audio The source can be selected from IN1、IN2、IN3、IN4、PHONE_IN、MIC_IN1、MIC_IN, after confirming the selection, press "MENU" to exit; as shown in the right figure, the audio source of the first channel is from IN1-HDMI1 becomes IN4-HDMI4.

The second audio selection operation is the same. As shown in the right figure, the audio source of the second channel has changed from IN2-HDMI2 to MIC_IN1.

Note: When there is a white bar displayed in the menu, you can only exit by pressing the "up" button on the key panel, and you can only operate the operating system menu after exiting.



4. Volume adjustment of the audio assigned channel: directly press the VOL+/VOL- button in the audio control area to control the volume, or adjust the position of the audio faders of CH1 and CH2 up and down, the corresponding menu part can also display the current volume. The volume value is in the range of 0-100. As shown in the figure on the right, the volume of the first channel has increased from 44 to 100. The operation of adjusting the volume of the second channel of mixing is the same as that of adjusting the volume of the first channel of mixing.

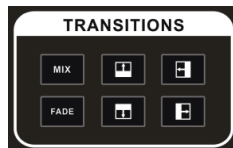
Volume fader MASTER: Represents the master volume fader, you need to push this fader to the top in the mix follow mode.



4.1.2.3 Transition Effect Control Area

There are 3 transition modes:

MIX transitions, FADE, and Wipes, where the Wipes include: up, down, left, and right.



● MIX Transition

MIX special effects are transition effects. After setting the transition, the main output will fade from the original live picture and then transition to the new live picture until it completely disappears.

Click **MIX** in the special effect control area (green light is displayed after pressing), and then click AUTO or CUT or T-bar to switch. The effect is shown below.



MIX transition effects, superimposed on the A picture and gradually superimposed the B picture, until the transition to the end, the picture is completely replaced by the B picture

● FADE Transition

Click **FADE** in the special effect control area (green light is displayed after pressing), and then click AUTO or CUT or T-bar to switch, the effect picture is below.



FADE in and fade out effects, A gradually darkens the picture until it is completely black, and then gradually changes from black to B picture.

● Four special effects wipe transitions

There are four types of transition modes in wipe, which are up / down / left / right.

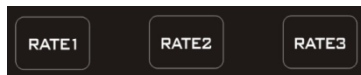
Transition up: Click **↑** in the special effect control area (green light is displayed after pressing), and then click AUTO or CUT or T-bar to switch. The other three transition operations are the same.



Wipe up the transition effect, the A picture is unchanged, and the B picture is gradually wiped in by the upward direction until the picture completely becomes B

● Transition rate adjustment

When operating the transition effect control area, you can also control the transition rate by operating the RATE1, RATE2, and RATE3 in the keypad (rate1: 640ms; rate2: 1280ms; rate3: 2560ms) Note: Only when using AUTO transition effective.



4.1.2.4 Integrated control area

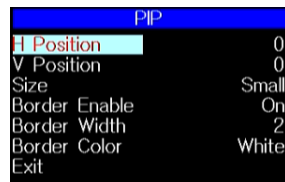
● FTB emergency black field

The FTB button is defined as the emergency black field screen output, press the button and the green light flashes to turn on the FTB emergency black field output function, press the button to turn off the green light, and the FTB emergency black field function is off.

● PIP picture-in-picture special effects

PIP special effects: Press **PIP** on the control panel (the green light is displayed after pressing), and then click AUTO or CUT to switch. The effect is shown below.

At this time, the information on the LCD screen will be switched to the PIP setting. The control menu can be set according to requirements, as shown below.



PIP size and position

You can use the knob to set the parameters of PIP picture-in-picture, the situation is as follows (the horizontal / vertical position size is based on the smallest display image as an example).

Horizontal position setting: The value from the upper left end to the upper right end is 0-1440, and the value increases / decreases by 10 each time the knob is rotated.

Vertical position setting: The value from the upper left end to the lower left end is 0-810, and the value increases / decreases by 10 each time the knob is rotated.

Display size setting: You can choose small / medium / large settings.

Bezel switch settings: You can choose on / off settings.

Border width setting: The border width can be selected from 2-7 thickness borders, and the value increases / decreases by 1 each time the knob is turned.

Border color setting: You can choose white / red / green / blue to set the border color.

● STILL screen freeze effects

Screen freeze special effect: Press **STILL** on the control panel (green light is displayed after pressing), and then the output PGM video animation will enter the freeze phenomenon. Press the button again to unfreeze the screen, the effect is shown below.

STILL

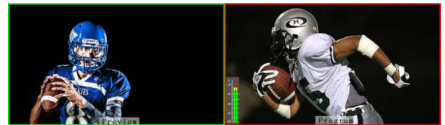


4.1.2.5 PGM and PVW selection

● Multiview output window introduction

Among them Preview and Program are preview and live broadcast output respectively, as shown below.

There are 4 windows below corresponding to the input source monitoring, which correspond to the No. 1 to No. 4 buttons on the switcher control panel.



PVW

PGM



● PGM and PVW output signals

After the device is connected to the video signal source, press 1 (PGM) and 2 (PVW) in the keypad. The live and preview signal sources in the output multiview monitor are 1 (PGM) and 2 (PVW), respectively. The signal sources are HDMI IN1 and HDMI IN2.

The effect diagram is as follows

● PGM and PVW source switching

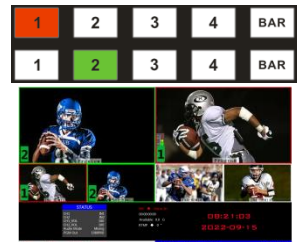
If you want to switch between PGM and PVW video sources in multiview (PGM ⇌ PVW) Suppose you want to convert live signal source 1 (PGM) and preview signal source 2 (PVW) into 2 (PGM) and 1 (PVW) in a multiview. You only need to press 2 (PGM) and 1 (PVW), and then use the CUT or AUTO to switch. The live PGM signal sources 1-4 can be switched arbitrarily with the preview PVW signal source.

The effect diagram is as follows:



30

After pressing the BAR button in the button panel, the screen will output color bars.

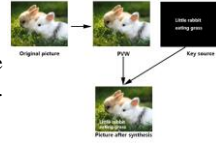


F7---KEY alternate function key

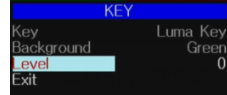
F7 is a multiplexing key. You need to enter the system settings of the menu to set the function of this key. Setting the chroma key is the keying function, setting the brightness key is the superimposing subtitle function, and setting the vertical screen OSD needs to cooperate with DeviceWell PM1005/PM1007 monitors are only effective.

● Luma Key

Turning on this function will deduct the black part of the key source. Then overlap with the background image to achieve the purpose of keying and superimposing the background. This function is generally used for superimposing subtitles in a virtual studio.

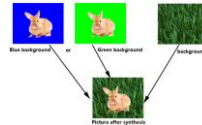


Switch the white font video or picture with black background to the PVW preview window, turn on the brightness key function of KEY1, at this time a brightness key parameter setting interface will appear on the LCD, and then use CUT/AUTO/T-Bar to switch to superimpose the characters on PGM, Luma key settings: After pressing luma Key, the display menu will display the current luma key information, as shown in the figure below.

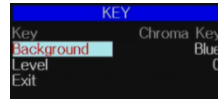


● Chroma Key

Chroma key keying supports dynamic video source image and static source keying. Switching the opportunity to key out the blue or green part of the key source, keep other colors, and then overlap with the background image to achieve the purpose of keying and superimposing the background. This function generally used for superimposing subtitles in virtual studios.



Switch the blue background or green background to the PVW preview window, and then turn on the Chroma KEY function. At this time, a chroma key parameter setting interface will appear on the LCD screen. Use the knob to select the background of your keying. After selection, you can use CUT/AUTO/fader to achieve keying. At this time, the image you want to superimpose appears on the PGM live broadcast. In the picture. When the key is pressed, the display menu will display the current chroma key keying information, as shown in the figure below.

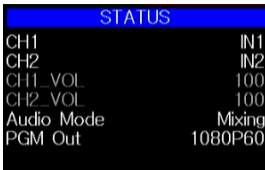


5. System menu settings

● Menu display

In the menu bar, you can perform IP settings on the device, restore the factory settings, and change the language.

In the default state of power on, press the menu to enter the main menu, as shown below.



Press the menu →



Press MENU under the status bar to set the audio mode and output resolution;

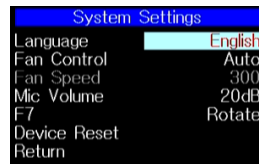
Audio mode; menu to select mix or follow;

Output resolution: menu can be operated, you can choose 1080p60 / 1080p50 / 1080p30 / 1080p25 / 1080p24 / 1080i50 / 1080i60

● System settings



Press the menu → 31



In the system setting menu, you can choose two different languages: Chinese or English; the fan speed can also be controlled manually, and the device defaults to the state of intelligent temperature control. You can also enter the next-level menu to manually select 10 kinds Speed: F7 is a multiplex key, you need to go to the system settings of the menu to set the function of this key, setting the chroma key is the keying function, setting the brightness key is the superimposed subtitle function, and setting the vertical OSD needs to be coordinated Only the Devicewell PM1005/PM1007 monitor is effective. MIC volume can be adjusted. If you encounter an unknown error during use, you can choose to restore the factory settings to reset.

● GPI settings



Press the menu →



● Record settings

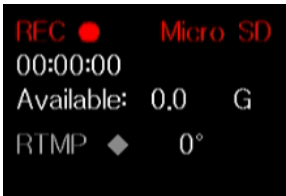


Press the menu →



The recording level can be set in the recording settings, there are low, medium, high and super high to be set, the corresponding bit rate is 6M/12M/18M/24M;The storage method can choose TF card.

The LED will flash during recording, and the recording status will be displayed in real time in the status display bar of the switcher.



1. The LED will flash during recording, and the recording status will be displayed in real time in the status display bar of the switcher. REC is red and recording is in progress.

2. Recording time.

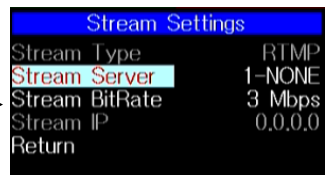
3. TF card recording free space.

4. Streaming screen: Press the F6 button and the light is on, TRMP displays red, the recording and streaming screens rotate 90 degrees at the same time, the display degree can be seen behind the multi-screen status bar RTMP, the normal 16:9 screen displays 0 degrees, vertical screen Show 90 degrees. Vertical screen needs to cooperate with Devicewell PM1005/PM1007 monitor to have effect.

● Stream settings



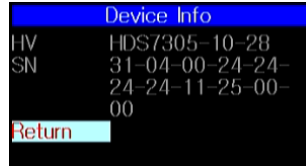
Press the menu →
32



● Device information



Press the menu →

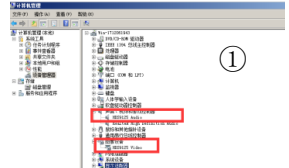


In the device information menu, you can read the serial number of the device. You cannot modify it here.

6. Instructions for UVC interface to OBS software

Step 1: Connect the board to WIN7 through the USB data cable. After the WIN7 end is identified, HDS7305 Audio will appear in the device list. Interface and HDS7305 Video represent ok.

As shown in Figure ①. Figure ① Audio and Video nodes in the device manager.

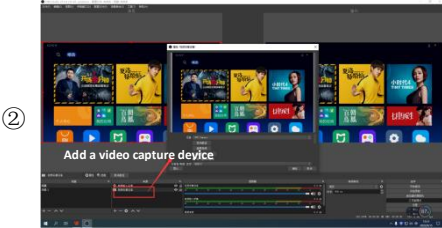


①

Step 2: Add a video capture device

Open the OBS software, click the "+" in the source box in the lower left corner of the interface, and then click "Video Capture Device", as shown in Figure ②.

After clicking "Video Capture Device", an interface for changing the name will appear, and you can customize the name. As shown in Figure ③



②



③

Step 3: Set video capture device properties

●Set the video attributes.

Device selection:HDS7305 Video IN;Resolution / needle rate type can be customized;

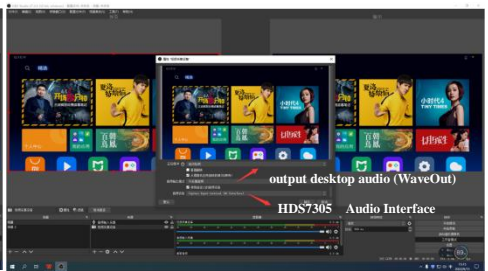
resolution can be selected: 1920 * 1080, 1280 * 720, 640 * 360, In addition to the resolution, the FPS item also needs to be selected to be consistent with the frame rate of the output resolution..as shown in Figure ④.

Pull down to set the audio properties.

Audio output mode selection: output desktop audio (WaveOut); tick Use custom audio



④



⑤

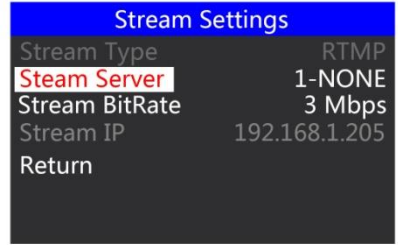
Description:

1.The resolution setting needs to be customized to display the video. If there is no image display after setting, you need to set the video format and modify it to MJPEG. (The latest OBS version 25.0.1 can choose H264 in the video format, so the image quality will be improved)

2. Before each use, you need to connect the device to the computer before opening the OBS software, otherwise the OBS software cannot recognize the USB device.

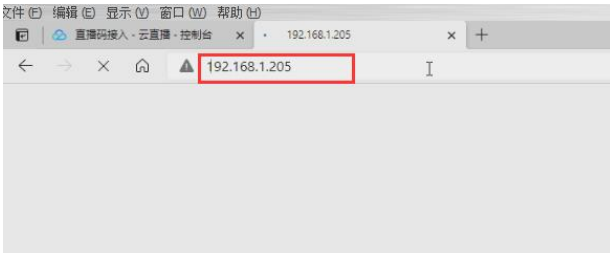
7. Stream instructions

1.HDS7305 is a hardware streaming device, which needs to be connected to the LAN through the STREAM interface on the side of the device; then enter the streaming settings in the device menu, there is a Stream ip corresponding to the IP address behind, this IP address is automatically obtained by connecting to the LAN IP address, you need to enter the WEB interface through this IP address.



2. First, we need a computer, open the browser and enter the IP address in the push streaming setting menu of our device.

For example, in the following figure, we fill in the automatically obtained 192.168.1.205 IP address into the browser to search, and then enter the WEB interface.



3.User setting

The screen rotates clockwise 0/90/180/270 degrees, the drop-down box selection takes effect immediately, and the recorded video and the streaming video rotate at the same time.

The recording bit rate corresponds to the same setting in the menu, low, medium, high, and super high levels.

The streaming code rate setting range is 1-10Mbps, and the drop-down box selection will take effect immediately;

4.Streaming settings

Index 1-8 groups means that 8 groups of stream addresses can be stored inside the device;

The user name means that each group of push addresses can be named by themselves, and the naming is only valid for letters and numbers; in the stream setting in the menu, you can see the stream name you saved on the WEB interface;

The streaming address is the streaming address of the live streaming platform, and the settings need to be saved after filling in; you can view the name of the streaming platform you saved in the device menu.

The push streaming status will be displayed in the multi-screen status bar when the streaming is enabled. The icon behind RTMP is always bright red, indicating that the streaming is successful; the 0 degree behind indicates the degree of screen rotation at this time; (the unsuccessful streaming icon is gray or flashing). As shown below



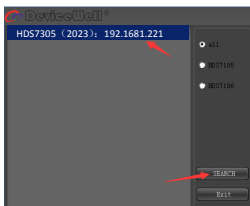
5. Analysis of WEB interface functions

- 1) When the recording function is turned on, the screen rotation, recording bit rate and other functions of the WEB interface are prohibited to be set, so please set the parameters before turning on the recording function.
- 2) When the push streaming function is enabled, the push streaming bit rate and screen rotation function can be changed at any time.
- 3) If the screen rotation parameters are changed, the recording and streaming functions will take effect accordingly. Therefore, the recorded video and the streaming video are all rotated images. Please confirm the parameters you want before setting.
- 4) The streaming code rate and recording level are unilaterally changed on the device side, and the state of the WEB interface will not be automatically refreshed. You need to manually press the F6(Stream) key of the keyboard to refresh the interface.
- 5) After connecting to the WEB interface, you can change the IP address in the interface. If you can't remember the IP address of the WEB interface for a long time, you can check the WEB interface IP address in the menu push settings.
- 6) To change the IP address and streaming settings, you need to save the settings under the parameter setting module.
- 7) The index in the stream settings can save 8 groups of streams, the user name only displays English characters and numbers, and the stream address is the address of the live broadcast platform.
- 8) You can connect the streaming address to the device through the WEB interface in advance, and save the live streaming platform address in the device in advance. The device can select the previously saved live streaming platform address to push streaming at any time on site.
- 9) In the WEB interface, the read settings under the push stream settings can read the push stream addresses saved in the device; for example, there are many groups of push stream addresses saved in the device, first select the index, and then click read, you can read it The streaming address previously saved in the device.
- 10) After the device is powered off, the screen rotation function of recording and streaming is not saved.

8. Switcher software control

The seitcher supports docking software control, software operation panel and switcher key panel are used correspondingly.(The software can be downloaded from DeviceWell official website)

- (1) Click “SCANNING” to search for the corresponding device, as shown in the figure below:



(1) After searching for the device, you can perform the following operations on the switcher: function area, black field control area, audio control area, transition effect control area, comprehensive control area, PGM and PVW selection area, and transition control area. Settings. As shown below:

- Functional area

F1 --- Resolution control

After clicking F1 on the key panel, you can adjust the resolution of the screen output. Each time you press the button, you can adjust the output resolution. The resolution is 1080P60Hz / 1080P50Hz / 1080P30Hz / 1080P25Hz / 1080P24Hz / 1080I60Hz / 1080I50Hz. Select as shown below

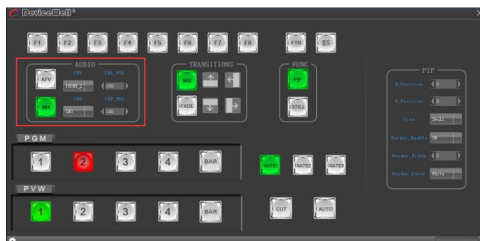
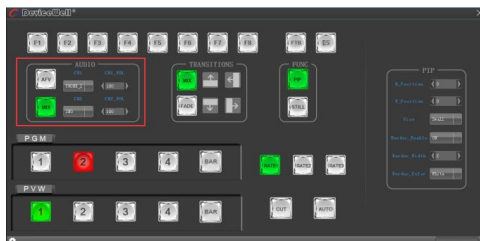
- Audio control area (default is AFV follow mode)

(A) AFV follow mode

Press AFV follow mode (green light is displayed). The channels of audio follow mode are IN1-HDMI1, IN2-HDMI 2, IN3- HDMI3, IN4-HDMI4. By default, it follows the audio of PGM live channel. At this time, you can only adjust the audio volume. Size, you need to increase or decrease the volume. You can set the volume from 0 to 100 through the slider. As shown below

1) MIX mixing mode

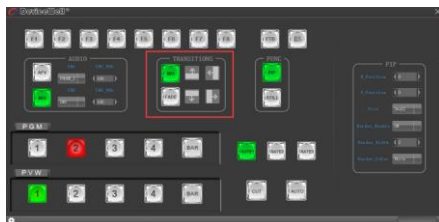
Press the MIX mixing mode (green light is displayed) to support the two-channel mixing mode. The assigned channels for the mix are IN1-HDMI1, IN2-HDMI 2, IN3- HDMI3, IN4- HDMI4, PHONE_IN, MIC_IN1, MIC_IN2, which can be accessed through Press CH1 and CH2 on the control panel to select the audio channel. If you need to increase or decrease the volume, you can set the volume from 0 to 100 through the slider. As shown below



- Transition effect control area

In the transition effect control area, you can press MIX (mixed transition), FADE (fade in and fade out transition) and up, down, left, right, up and down to six special effect transition settings. As shown below

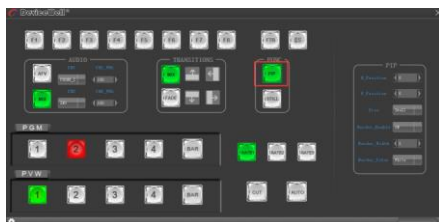
In the transition control area, you can set the transition rate. Press RATE1, RATE2, and RATE3 on the panel to control the transition rate definition. It's effective only when playing.



- Integrated control area

(1) PIP Picture-in-Picture Settings

Press PIP (display green light) in the software control panel to enter picture-in-picture settings. At this time, you can set the horizontal position, vertical position, display size, border switch, border width, and border color of the screen. As shown below



(2) STILL screen freeze setting

Press STILL (display green light) in the software control panel to enter the picture freeze setting. At this time, you can freeze the live output picture. Click STILL again to cancel the freeze effect. As shown below



- PGM and PVW selection area

PGM and PVW are preview output and live broadcast output respectively. You can switch the input source of the console by clicking the buttons 1-4 on the software control panel. Where BAR is the color bar output. As shown below



Note: If the switcher is operated on the device side, the PC-side interface cannot be displayed synchronously. You must click the synchronization button to control the interface to display synchronously:



9. Synchronize regional time

1.Go to Devicewell official website to download the time synchronization software, www.devicewell.com search keyword time synchronization;

2.Double-click to open the time synchronization software

3.Software function introduction, open the software default automatic setting function①

Connect the device to the internet cable and be in the same local area network as the computer. Click Auto Sync, and the computer will automatically synchronize your device time. The red box in the figure is the IP address of your device that is normally connected;

4.Manual setting, if you change the time by yourself, you need to check the manual setting function; after filling in the time you need to set, click manual confirmation; ②



①



②

10. Failure and Maintenance

● Common Faults and Solutions

(1) The output image may be flickered by interference. The quality of the wire used may be poor, and the shielding layer of the wire is not well prepared. When there is a strong radio near the use environment, radio waves may interfere with the transmission of the signal, resulting in unstable signal flicker. Please use the wire produced by regular manufacturers, such as Belden, Jia Nai Mei.

(2) When plugging in the audio and video interface, if there is obvious static electricity, the device power ground wire may not be good grounding, please ground in the correct way; otherwise it will easily damage the host and shorten the life of the mainframe.

(3)When RJ45 cannot control the Switcher, check whether the communication port set by the control software corresponds to the serial port of the connected device; check if the communication port of the computer is good.

● Maintenance

Use a soft, dry cloth to clean the device. Do not use alcohol, paint thinner or benzene to clean. Make sure that the device is stored and operated in an environment away from liquids and stains.

● Warranty information

The company guarantees that the process and materials of the product are not defective within 12 months after purchase from the company or its authorized distributors, under normal use and service support. We offer a one-year warranty after sale.

11. More switcher options

No.	Model	Description	No.	Model	Description
1	AVS7105	Audio and video switcher (4DMI+1DP)	18	HDS8102	Touch screen switcher (2*HDMI)
2	HDS9101	Portable switcher (4SDI+2HDMI)	19	HDS8101	Touch screen switcher (4*HDMI)
3	HDS9105	Portable switcher (4HDMI +1DP)	20	HDS8107	Touch screen switcher (4*HDMI)
4	HDS9105C	Portable switcher (4HDMI +1DP)	21	HDS8301	Touch screen switcher (4*HDMI)
5	HDS9125	Portable switcher (4HDMI+1DP)	22	HDS8307	Touch screen switcher (4*HDMI)
6	HDS9135	Portable switcher (4HDMI+1DP)	23	HDS8325	Touch screen switcher (2*HDMI)
7	HDS9325	Portable switcher (4HDMI+1DP)	24	HDS8345	Touch screen switcher (4*HDMI)
8	HDS9335	Portable switcher (4HDMI+1DP)	25	HDS8347	Touch screen switcher (4*HDMI)
9	HDS9226	Portable switcher (4SDI+2HDMI)	26	HDS7105S	Simple switcher (4HDMI+1DP)
10	HDS9236	Portable switcher (4SDI+2HDMI)	27	HDS7105	Simple switcher (4HDMI+1DP)
11	HDS9326	Portable switcher (4SDI+2HDMI)	28	HDS7105P	HDS7105 with T-Bar
12	HDS9336	Portable switcher (4SDI+2HDMI)	29	HDS7205S	Simple switcher (4HDMI+1DP)
13	HDS9108	Portable switcher (4HDMI+4SDI)	30	HDS7305	Simple switcher (4HDMI+1DP)
14	HDS9106	Simple switcher (4SDI+2HDMI)	31	HDS7106	Simple switcher (4SDI+2HDMI)
15	HDS9106MINI	MINI Portable switcher (4SDI+2HDMI)	32	HDS6506	All-in-one switcher(6-CH)
16	HDS9110	Portable switcher (8 SDI+2 HDMI)	33	HDS6110	All-in-one switcher(10-CH)
17	HDS9112	Portable switcher (12 SDI)	34	HDS6112	All-in-one switcher(12-CH)

产品保修卡 WARRANTY

保修须知:

Warranty Notice:

一: 凡购买本公司的产品用户, 凭本保修卡享受保修期内维修服务。

1.Customer who buys the product will be offered repair service during the warranty validity period.

二: 本公司所有产品自出货之日起保修一年。保修服务仅限正常使用下有效。

2.The warranty period is one year form the date of shipment,Guarantee service is subject to normally using.

三: 本保修卡不补发, 保修期内请妥善保管, 用户要求维修服务时, 应出示保修卡和保修卡对应的机器。

3. This warranty card is not reissued. Please keep it properly during the warranty period. When the user requests repair services, the warranty card and the machine corresponding to the warranty card should be presented.

四: 因以下情况损坏和出现故障的产品不能享受保修服务:

4.Damage and failures due to following conditions are not covered:

1).一切人为损坏、自行拆机、拆封标、使用不当的维修保管、意外或自然灾害所致之故障或损坏;

1) All man-made damage, self-dismantling, unsealing labels, improper use of maintenance and storage, failure or damage caused by accidents or natural disasters;

2).产品无保修卡或保修卡被涂改、内容无法辨认或内容与实物不符;

2) No product warranty card,warranty card has been alterd;content illegible or incompatible with the product.

3).产品超出保修期。

3) Validity period has expired.

保修单位(Warranty Party): _____ 地 址(Address): _____

联系电话(Tel): _____ 邮 编(Post Code): _____

产品型号(Mode): _____ 产品编号(Item No.): _____

型号选择:

Model Selection:

 HDS7105S HDS7105 HDS7105P HDS7305

产品合格证 CERTIFICATE

本合格证证明客户购买的产品是本公司生产，完全符合原厂服务要求。

This is to certify that the product in the package is manufactured by the manufacture and in full complian with the specifications of the original service.

检验员(QC): _____ 出厂日期(Date): _____

产品型号(Model): _____ 产品编号(Item No.): _____





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