

# SP-5105KC

**1x4 HDMI & Full 3D support over Single CAT5  
Distribution Amplifier with Local Output**

## User Manual



To avoid EMI issue, complete STP Cat6 cable is strongly recommended!



rev: 131028  
Made in Taiwan



## **Safety and Notice**

The **SP-5105KC 1x4 HDMI & Full 3D support over Single CAT5 Distribution Amplifier with Local Output** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **SP-5105KC** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



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# INTRODUCTION

The **SP-5105KC 1x4 HDMI & Full 3D support over Single CAT5 Distribution Amplifier with Local Output** provides the most flexible solution by which the high definition video and high quality audio can be transmitted to different locations over a long distance. The devices are cascadable, allowing you to extend HDMI compliant displays almost anywhere. The input HDMI source can be duplicated and distributed to up to 4 HDMI enable displays through cost effective Cat-5/5e/6 cables with HDMI over CAT5 receivers (CV-735 and/or CV-715s). For convenience, SP-5105KC is also equipped a local HDMI output for monitoring. With the built in equalization, the input HDMI cable can be extended up to 20 meters (66 feet) long under Full HD, and make the overall transmission distance superior than regular HDMI splitters or matrix switches in the market.

## FEATURES

- Support HDMI Deep Color & full 3D
- HDCP compliant
- Regenerates the HDMI signal
- HDMI local output for monitoring
- Supports default HDMI EDID and has the ability to learn the EDID of displays
- Extends up to 20m (66ft) of input HDMI cable
- Extends up to 60m (200ft) of output Cat-5/5e/6 solid UTP cable under HD (720p / 1080i)
- Extends up to 40m (130ft) of output CAT-5/5e/6 solid UTP cable under Full HD (1080p)
- Pure unaltered uncompressed 7.1ch digital HDMI over CAT5e/6 cable transmission
- Allows cascading
- Perfectly integrated with other HDMI over CAT5 series products



The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

## PACKAGE CONTENTS

- 1x SP-5105KC
- 1x DC 5V 4A wall wart
- 1x User Manual

# SPECIFICATIONS

Model Name		SP-5105KC
<b>Technical</b>		
Role of usage	1x4 Distribution Amplifier Transmitter [TX]	
HDMI compliance	HDMI Deep Color & full 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color	
Transmission over UTP [24-bit color]	Full HD (1080p)-40m (130ft) [CAT.X] HD (720p/1080i)-50m (165ft) [CAT.X]	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
Equalization	Built-in	
Input TMDs signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x HDMI	
Output	4x RJ-45 + 1x HDMI	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C	
Rotary control switch	None	
<b>Mechanical</b>		
Housing	Metal enclosure	
Dimensions [L x W x H]	Model	194 x 110 x 27mm [7.6" x 4.3" x 1.1"]
	Package	270 x 175 x 80mm [10.6" x 6.9" x 3.1"]
	Carton	450 x 370 x 300mm [1'6" x 1'3" x 11.8"]
Weight	Model	588g [1.3 lbs]
	Package	1000g [ 2.2 lbs]
Fixedness	1U rack-mounting with ears	
Power supply	5V 4A DC	
Power consumption	13 Watts [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	

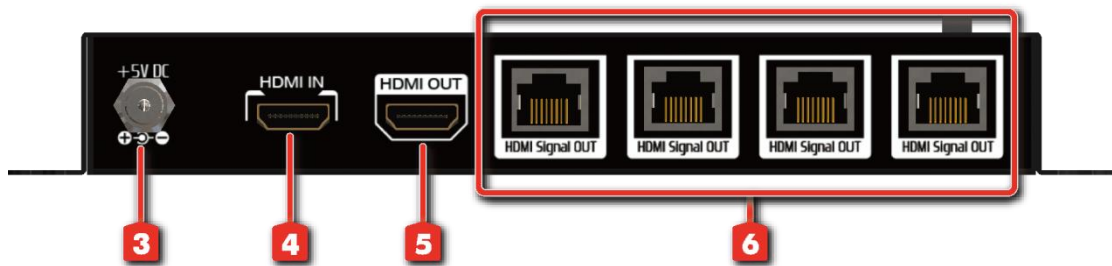
# PANEL DESCRIPTIONS

## Front Panel



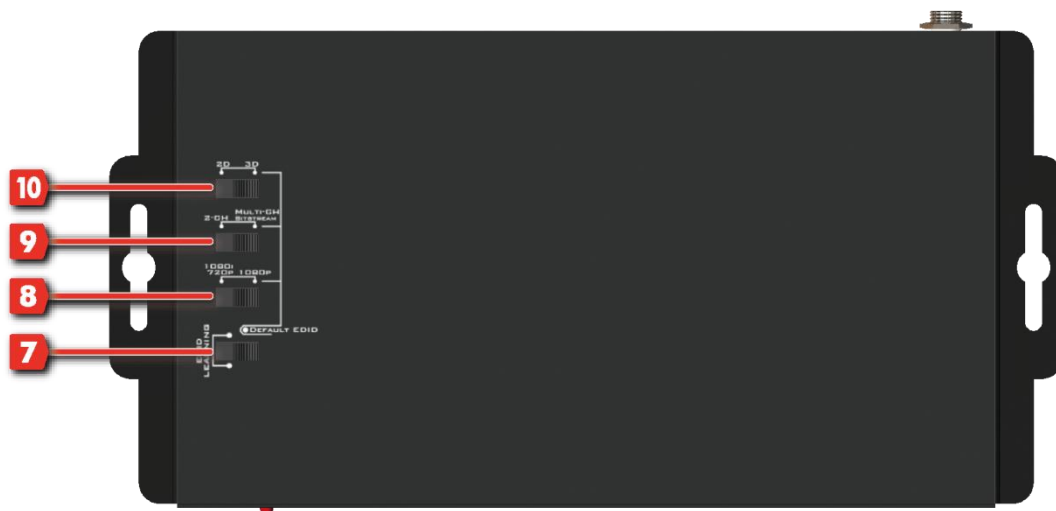
1. **POWER:** bright - power on; dark - power off.
2. **SIGNAL:** bright - HDMI source signal is detected; dark - no HDMI signal.

## Rear Panel



3. **+5V DC power:** connect to 5V 4A DC interlocking power adapter
4. **HDMI INPUT:** connected to HDMI source
5. **HDMI OUTPUT:** HDMI output for local monitor
6. **CAT.X OUTPUT 1~4:** CAT output

## Top Panel



7. **SW1:** EDID Mode
8. **SW2:** EDID - Full HD/HD Selection
9. **SW3:** EDID - Audio Selection
10. **SW4:** EDID - 3D/2D Selection

# SWITCH SETTING

	Left Position	Right Position
<b>SW1</b>	EDID Learning	Default EDID
<b>SW2</b>	HD	Full HD
<b>SW3</b>	Audio – 2 Channel	Audio - Multi Channel
<b>SW4</b>	2D	3D



The instant switching enables only when the video and audio setting of the source has been adjusted to "Auto" or "Pass-through"

## EDID LEARNING

1. Power up the SP-5105KC. Connect to **HDMI OUTPUT** with the display you want the SP-5105KC to learn its EDID.
2. To learn the display's EDID for source device connected to **HDMI OUTPUT**, Set **SW1** to left Position. Power on and wait for about 5 seconds to complete the EDID learning process.

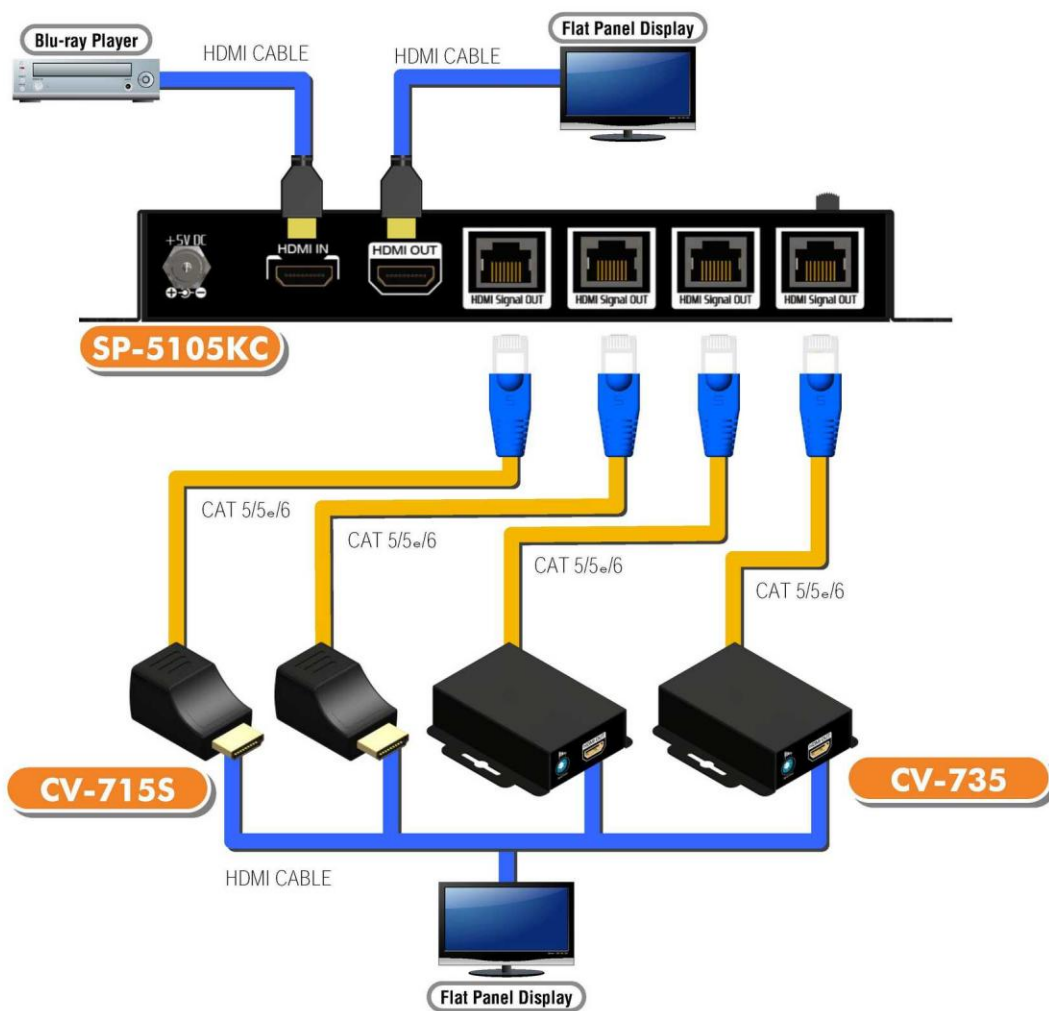
## HARDWARE INSTALLATION

### Broadcasts HDMI signals to four remote displays with a local port

1. Turn off all devices, including sources and displays.
2. Connect an HDMI source (such as a Blu-ray Disc player) to the **HDMI INPUT** port.
3. Connect the receivers (CV-735 or CV-715s) via Cat-5/5e/6 cables to each **HDMI Signal OUTPUT** port.
4. Connect the local HDMI equipped monitor.
5. Plug in 5V 4A DC power supply.
6. Power on the HDMI displays.
7. Power on the HDMI source device.

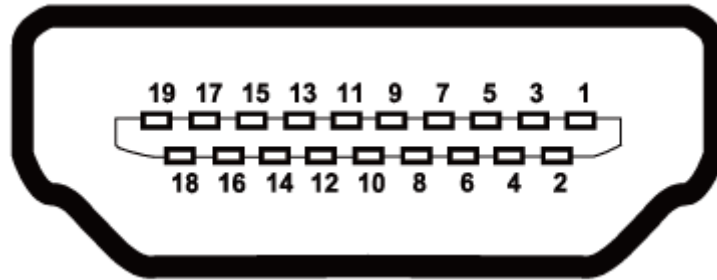
# CONNECTION DIAGRAM

- HDMI
- CAT5/5e/6



# PIN DEFINITION

## HDMI

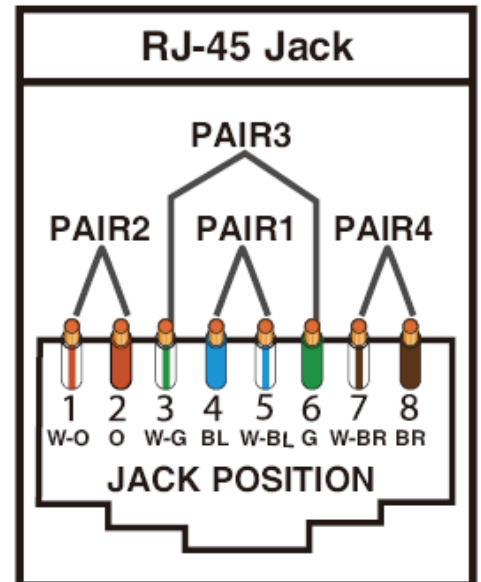


Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	Pin 11	TMDS Clock Shield
Pin 2	TMDS Data2 Shield	Pin 12	TMDS Clock-
Pin 3	TMDS Data2-	Pin 13	NC
Pin 4	TMDS Data1+	Pin 14	Reserved (N.C. on device)
Pin 5	TMDS Data1 Shield	Pin 15	SCL
Pin 6	TMDS Data1-	Pin 16	SDA
Pin 7	TMDS Data0+	Pin 17	DDC/CEC Ground
Pin 8	TMDS Data0 Shield	Pin 18	+5V Power
Pin 9	TMDS Data0-	Pin 19	Hot Plug Detect
Pin 10	TMDS Clock+		

## RJ45 / Cat.X

Data Link TIA/EIA-568-B		
PIN	Color	Function
1	W-O	TX0-
2	O	TX0+
3	W-G	TX1-
4	BL	TX2-
5	W-BL	TX2+
6	G	TX1+
7	W-BR	TXC-
8	BR	TXC+





# NOTICE

1. If the DVI or HDMI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI or HDMI display EDID information.
2. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C & VG-870B.
3. The transmission length is largely affected by the type of Cat-5/5e/6 cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m [1,000ft] bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat-5e cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
4. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended.
5. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use double shielded STP cables to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the category cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
7. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input 1] generally can produce better transmission performance among all HDMI inputs.



# WARRANTY

The SELLER warrants the **SP-5105KC 1x4 HDMI & Full 3D support over Single CAT5 Distribution Amplifier with Local Output** free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the **SP-5105KC** features and specifications is subject to change without further notice.