

SP-5105C

1x4 HDMI Deep Color & 3D over Single CAT5 Distribution Amplifier with Local Output

User Manual



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



Safety and Notice

The **SP-5105C 1x4 HDMI Deep Color & 3D 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-5105C** 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.



TABLE OF CONTENTS

INTRODUCTION	1
FEATURES	1
PACKAGE CONTENTS.....	1
SPECIFICATIONS.....	2
PANEL DESCRIPTIONS	3
SWITCH SETTING	4
EDID LEARNING.....	4
HARDWARE INSTALLATION	4
CONNECTION DIAGRAM.....	5
PIN DEFINITION	6
NOTICE	7
WARRANTY	8

INTRODUCTION

The **SP-5105C 1x4 HDMI Deep Color & 3D 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 8 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-5105C 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

- State-of-the-art Silicon Image (founder of HDMI) chipset embedded for upmost compatibility and reliability
- HDMI Deep Color & 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
- 1U rack mountable

1 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 RJ45 connectors is recommended.

PACKAGE CONTENTS

- 1x SP-5105C
- 1x 5V PSU with C7 cord
- 1x User Manual

SPECIFICATIONS

Model Name	SP-5105C	CV-735	CV-715S
Technical			
Role of usage	1x4 Distribution Amplifier Transmitter [TX]	Receiver [long range RX]	Receiver [short range RX]
HDMI compliance	HDMI Deep Color & 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 cable (24-bit)	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	Adjustable 8-level digital	None
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	1x RJ-45	1x RJ-45
Output	4x RJ-45, 1x HDMI	1x HDMI	1x HDMI
HDMI connector	Type A [19-pin female]	Type A [19-pin female]	Type A [19-pin male]
RJ-45 connector	WE/SS 8P8C with 2 LED indicators		
Rotary control switch	None	8-level signal equalization	None
Mechanical			
Housing	Metal enclosure	Metal enclosure	Plastic molding
Dimensions [L x W x H]	Model	195 x 110 x 2.7mm [7.7" x 4.3" x 1"]	93 x 90 x 25mm [3.7" x 3.5" x 1"]
	Package	264 x 170 x 77mm [10.3" x 6.7" x 3"]	175 x 270 x 80mm [6.9" x 10.6" x 3.2"]
	Carton	430 x 358 x 291mm [1'4" x 1'2" x 11.5"]	450 x 370 x 300mm [1'6" x 1'3" x 11.8"]
Weight	Model	1.4kg [3.1 lbs]	175g [6.2 oz]
	Package	2.2kg [4.8 lbs]	475g [1 lbs]
Fixedness	1RU rack-mount with ears	Wall-mounting case with screws	Direct plug-in
Power supply	5V 4A DC	5V 2A DC	None
Power consumption	13 Watts [max]	1 Watt [max]	0.5 Watt [max]
Operation temperature	0~40°C [32~104°F]		
Storage temperature	-20~60°C [-4~140°F]		
Relative humidity	20~90% RH [no condensation]		

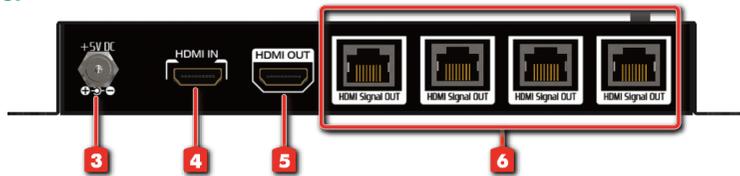
PANEL DESCRIPTIONS

Front Panel



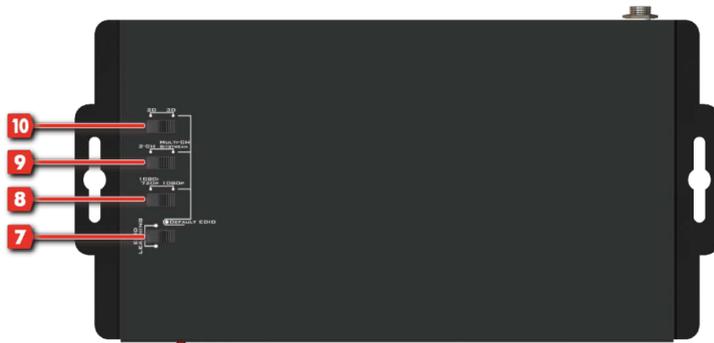
- 1. **SIGNAL:** bright - HDMI source signal is detected; dark - no HDMI signal.
- 2. **POWER:** bright - power on; dark - power off.

Rear Panel



- 3. **+5V DC:** Connect to a 5V 4A DC interlocking power adapter
- 4. **HDMI INPUT:** Connect to the HDMI source here
- 5. **HDMI OUTPUT:** HDMI output for local monitor
- 6. **CAT OUT1-CAT OUT4:** 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
SW1	Default EDID	EDID Learning
SW2	Full HD	HD
SW3	Audio - Multi Channel	Audio - 2 Channel
SW4	3D	2D



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

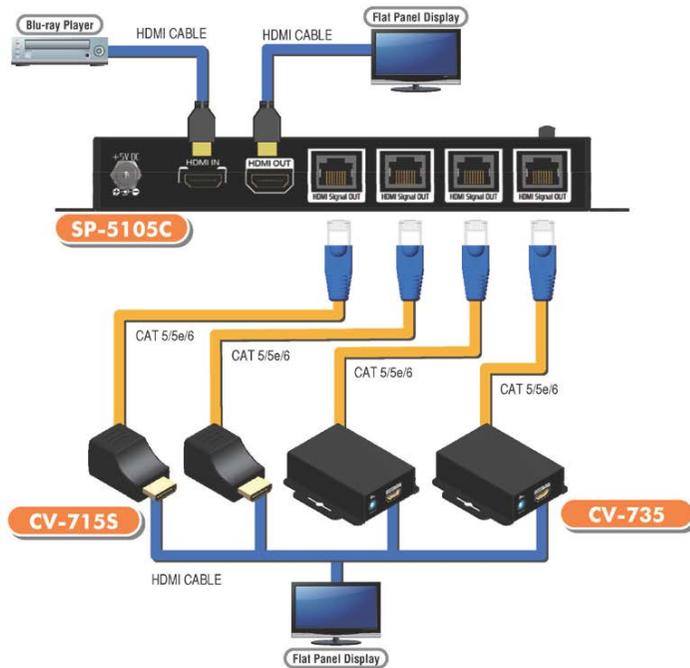
HARDWARE INSTALLATION

Broadcasts HDMI signals to eight 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.

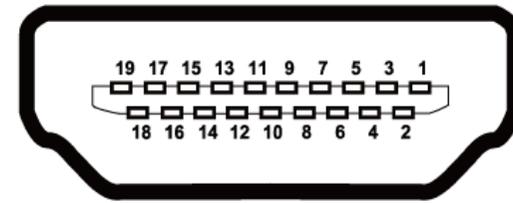
CONNECTION DIAGRAM

→ HDMI
→ CAT5/5e/6



PIN DEFINITION

HDMI

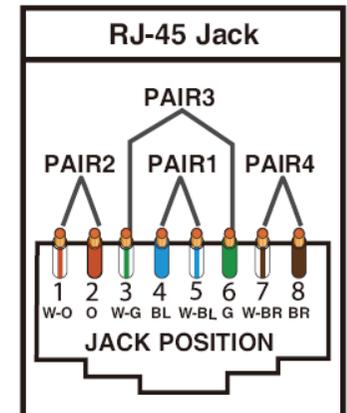


Type A (Receptacle) HDMI

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+



1. When adjusting the signal level on the receiver unit, please dial the rotary control switch from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!
2. 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.
3. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.
4. 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.
5. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended for better performance.
6. 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.
7. 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.
8. 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.



The SELLER warrants the **SP-5105C 1x4 HDMI Deep Color & 3D over Single CAT5 Distribution Amplifier with Local Output** to be 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 features and specifications of SP-5105C is subject to change without further notice.