

Meicheng[®]

SP-5018M

2x8 HDMI 1.3 over Single CAT5
Matrix Switcher

User Manual



Full HD
1080

HDMI[™]
HIGH-DEFINITION MULTIMEDIA INTERFACE
HDCP[™]
HIGH-DEFINITION CONTENT PROTECTION

7.1 CH
AUDIO

 **x.v.Color**

CAT5/6/7
SINGLE
PATENTED



Made in Taiwan



Safety and Notice

The **SP-5018M 2x8 HDMI 1.3 over Single CAT5 Matrix Switcher** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the SP-5018M 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.

The **SP-5018M 2x8 HDMI 1.3 over Single CAT5 Matrix Switcher** 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. Installed with a 2x1 HDMI 1.3 compliant switch, one of the input HDMI sources can be duplicated and distributed to up to 8 HDMI enable displays through cost effective Cat-5/5e cables and RJ-45 to HDMI mini-extenders (CV-715s). 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 1.3c compliant
- HDCP compliant
- Regenerates the HDMI signal
- Acts as a 2x1 HDMI switch plus a 1x8 HDMI over CAT5 splitter
- 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 LAN cable under HD (720p / 1080i)
- Extends up to 40m (130ft) of output CAT-5/5e/6 LAN cable under Full HD (1080p)
- Pure unaltered uncompressed 7.1ch digital HDMI over LAN cable transmission
- Allows cascading
- Perfectly integrated with other HDMI over CAT5 series products
- 1U rack mountable

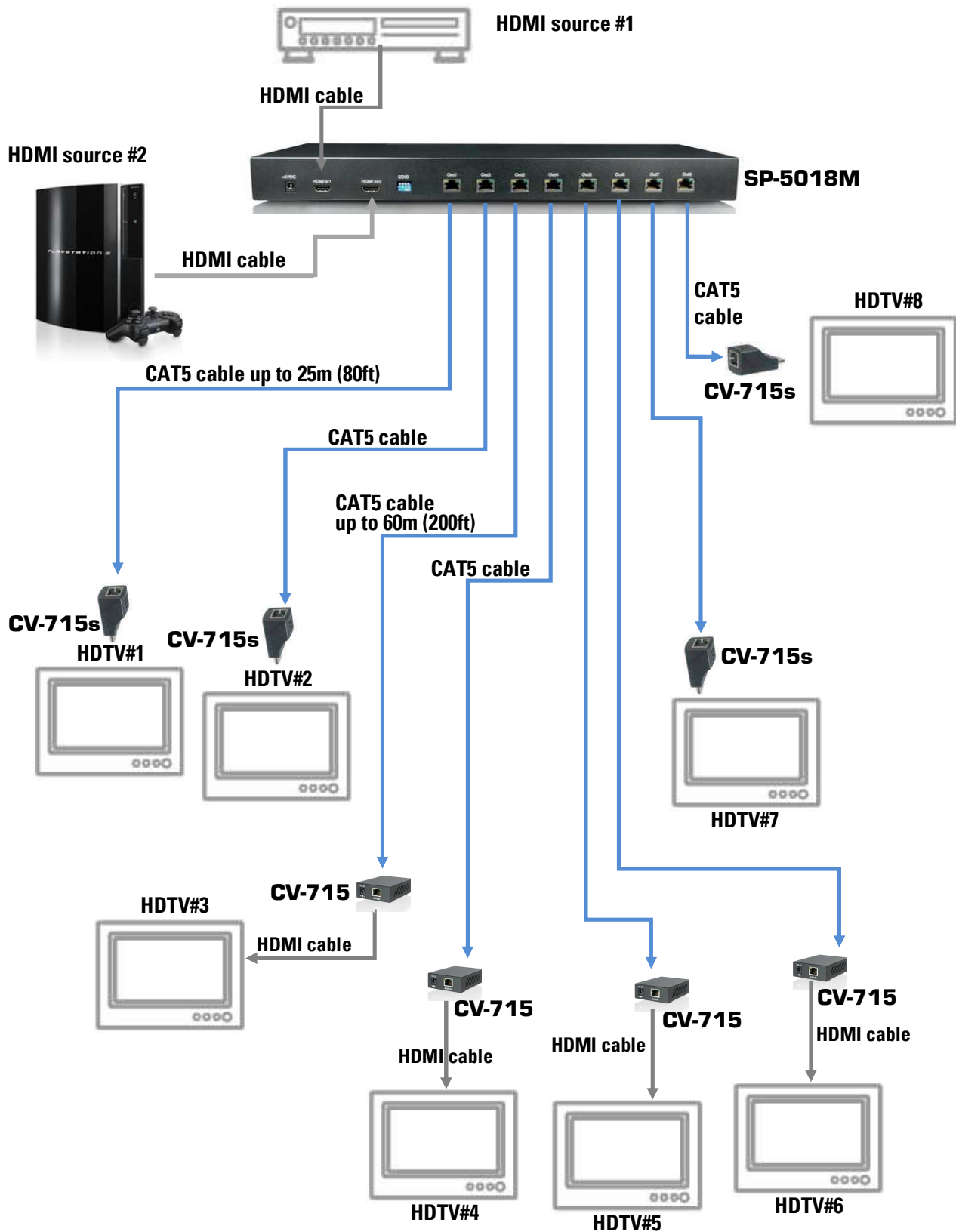


The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

Specifications & Package Contents

Model Name		SP-5018M	CV-715	CV-715s
Technical				
Role of usage		2x8 matrix switch Transmitter [TX]	Receiver [long range RX]	Receiver [short range RX]
HDMI compliance	HDMI 1.3c			
HDCP compliance	Yes			
Video bandwidth	Single-link 340MHz [10.2Gbps]			
Video support	480i / 480p / 720p / 1080i / 1080p60			
Transmission	Full HD (1080p): 40m (130ft) [CAT5e] / 50m (165ft) [CAT6] HD (720p/1080i): 50m (165ft) [CAT5e] / 60m (200ft) [CAT6]			
Audio support	Surround sound (up to 7.1ch) or stereo digital audio			
Equalization	N/A	8-level digital	None	
Input TMDS signal	1.2 Volts [peak-to-peak]			
Input DDC signal	5 Volts [peak-to-peak, TTL]			
ESD protection [SP-5018M / CV-715]	[1] Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge] [2] Core chipset — ±8kV			
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]			
Input	2x HDMI	1x RJ-45	1x RJ-45	
Output	8x RJ-45	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			
DIP switch	HDMI input selection / EDID learning / audio mode / HDMI 1.2/1.3 output selection			
Mechanical				
Housing	Metal case		Metal case	Plastic mold
Dimensions [L x W x H]	Model	438 x 158 x 44mm	80 x 60 x 25mm	45 x 25 x 20mm
	Package	545 x 230 x 110mm	270 x 175 x 80mm	170 x 115 x 40mm
	Carton	570 x 580 x 260mm	450 x 370 x 300mm	450 x 370 x 300mm
Weight	Model		154g	22g
	Package	1.9kg	453g	90g
Fixedness	1U rack-mount with ears	Wall-mount case upon request		N/A
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			
Storage temperature	-20~60°C			
Relative humidity	20~90% RH [no condensation]			
Package Contents	1x SP-5018M 2x Rack-mounting ears 1x 5V power adapter 1x User Manual	1x CV-715 1x 5V power adapter 1x User Manual	1x CV-715s 1x User Manual	

Application Diagram



Panel Descriptions

SP-5018M



1. **+5V DC:** Power jack for 5V4A DC
2. **HDMI In1:** HDMI Input1 for connecting to a HDMI source here
3. **HDMI In2:** HDMI Input2 for connecting to a HDMI source here
4. **EDID:** DIP Switch (see the definition in the next section)
5. **Out1 – Out8:** RJ-45 Output 1-8 to link to the HDTV through HDMI over CAT5 receiver CV-715 or CV-715s

DIP Switch

DIP Switch

Switch Position	OFF [↑]	ON [↓]
Pin#1	Input HDMI source #1	Input HDMI source #2
Pin#2	Source 1 use default EDID	Source 1 use learned EDID ¹
Pin#3	Source 2 use default EDID	Source 2 use learned EDID ²
Pin#4	7.1 Channel ³	2 Channel
Pin#5	HDMI 1.2 output	HDMI 1.3 output
Pin#6	HDMI mode output	DVI mode output

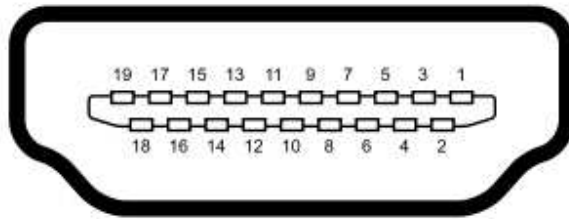


¹ Set pin#2-ON [↓] firstly and then connect the HDMI Input to HDMI display through HDMI cable. Waiting for 20 seconds, the learning procedure will be accomplished. When update the EDID content with another display, you must set pin#2-OFF[↑] and repeat this procedure again.

² Set pin#3-ON [↓] firstly and then connect the HDMI Input to HDMI display through HDMI cable. Waiting for 20 seconds, the learning procedure will be accomplished. When update the EDID content with another display, you must set pin 3 off and repeat this procedure again

³ While 7.1 channel option is selected for the HDMI signal with only stereo audio, the HDMI display may show video without audio. In this case, please set audio to stereo audio.

HDMI Pin Definition



Type A (Receptacle) HDMI

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

Hardware Installation

Broadcasts HDMI signals to 8 remote displays from either of 2 video sources

1. Switch off all devices, including monitors.
2. Connect HDMI sources (such as a Blu-ray Disc player) to the HDMI In.
3. Connect to the receivers (CV-715 or CV-715s) via RJ-45 connectors by a CAT5e cable.
4. Plug in 5V 4A DC power supply.
5. Power on the HDMI monitors.
6. Power on the HDMI sources.

Notice

1. If the DVI or HDMI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI/HDMI EDID information.
2. All HDMI over CAT5 transmission distances are measured using Belden CAT5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C.
3. The transmission length is largely affected by the type of LAN cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid LAN cables (usually in bulk cable 300m/1000ft form) can transmit a lot longer signals than stranded LAN cables (usually in patch cord form). Shielded STP cables are better suit than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid LAN cables are your only choice.
4. EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.
5. To reduce the interference among the unshielded twisted pairs of wires in LAN cable, you can use shielded LAN cables to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the LAN cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your LAN cables. For resolution greater than 1080i or 1280x1024, a CAT6 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.



Performance Guide for HDMI over LAN Cable Transmission

Performance rating		Type of LAN cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	★ ★ ★	★ ★ ★ ★	★ ★ ★ ★ ★
	Shielded (STP)	★ ★ ★	★ ★ ★	★ ★ ★ ★
Stranded	Unshielded (UTP)	★	★ ★	★ ★
	Shielded (STP)	★	★	★ ★
Termination		Please use EIA/TIA-568-B termination (T568B) at any time		

Limited Warranty

The SELLER warrants the **SP-5018M 2x8 HDMI 1.3 over Single CAT5 Cascading Matrix Switcher** 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 surges.

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 are limited to a 30 day warranty and cable 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-5018M** features and specifications is subject to change without further notice.

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