

CATS-VGA-12B/CATS-VGA-16B CATS-VGA-RX1/CATS-VGA-RX1D

VGA & Audio over CAT5 Distribution Series

User Manual

CATS-VGA-12B



CATS-VGA-16B



CATS-VGA-RX1



CATS-VGA-RX1D





Safety and Notice

The VGA & Audio over CAT5 Distribution Series, including:

CATS-VGA-12B 1x12 VGA & Audio over CAT5 Distribution Amplifier,

CATS-VGA-16B 1x16 VGA & Audio over CAT5 Distribution Amplifier,

CATS-VGA-RX1 VGA & Audio over CAT5 Receiver, and

CATS-VGA-RX1D VGA & Audio over CAT5 Receiver with RGB Delay Control

has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the VGA & Audio over CAT5 Distribution Series 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 **VGA & Audio over CAT5 Distribution Series** provides the most flexible solution by which the high resolution PC video and high quality stereo audio can be transmitted to different locations over super long distances. Built with 2 VGA and digital/analog audio loop outs, local A/V receivers can provide extra video and audio fan-outs through typical VGA, SPDIF, and analog audio cables. The high bandwidth VGA can be transmitted up to 65 meters (210 feet) on the local ports. VGA & Audio over CAT5 Distribution Series also extends VGA and stereo audio source up to 330 meters (1000 feet) through cost effective CAT-5 LAN cables. Accompanying the receivers of CATS-VGA-RX1 and CATS-VGA-RX1D equipped with the equalization, gain control and de-skew functions, the video and audio quality can be further assured and make the quality of overall transmission superior than the other VGA splitters on the market.

Features

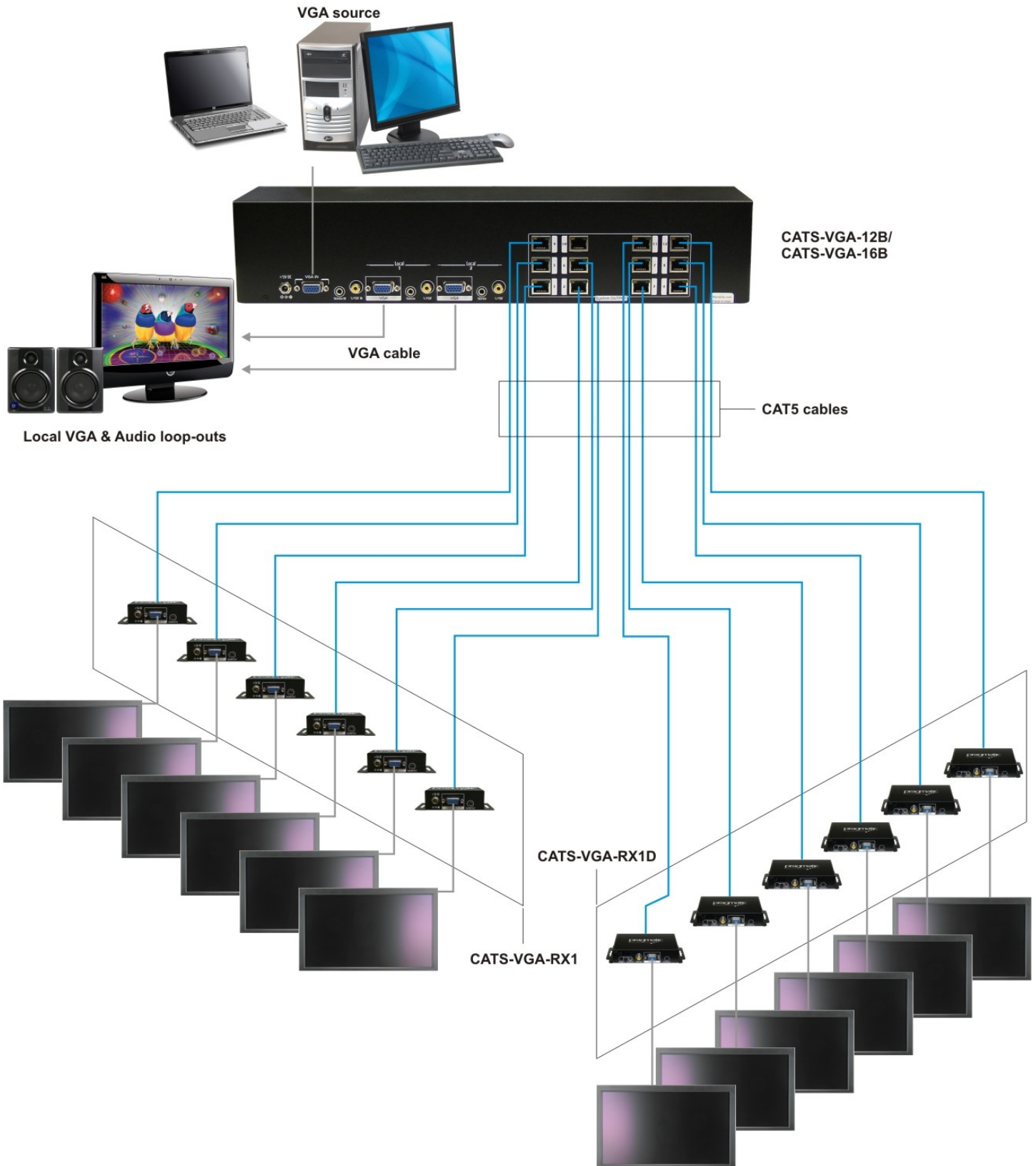
- CATS-VGA-12B & CATS-VGA-16B supports up to 1280x1024@60 to 330m (1,000ft)
- Supports analog stereo audio
- Supports digital S/PDIF stereo audio
- Adjustable equalization and gain control on RX unit
- De-skew compensation available for RGB delay control (with CATS-VGA-RX1D only)



Note: 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.

CATS-VGA

Application Diagram

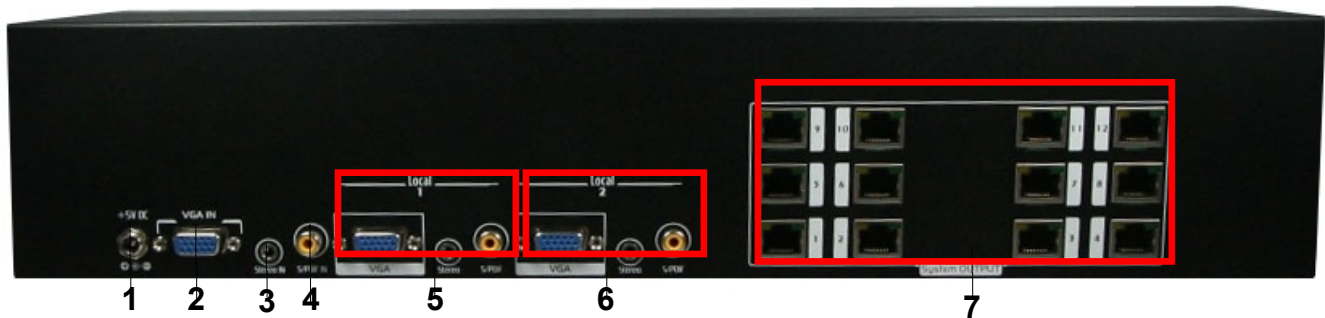


Technical Specifications and Package Contents

Model Name			CATS-VGA-12B	CATS-VGA-16B
Technical				
Role of usage			1x12 distribution amplifier	1x16 distribution amplifier
Transmitter [TX]				
Video bandwidth		350MHz		
Video support		VESA		
Transmission		1280x1024 — 330m (1,000ft) [CAT5e]		
Audio support		Stereo		
Equalization		Continuous analog control		
Input video signal		1.2 Volts [peak-to-peak]		
ESD protection		[1] Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge] [2] Core chipset — ±8kV		
PCB stack-up		4-layer board [impedance control — differential 100W; single 50W]		
Input		1x VGA 1x RCA 1x 3.5mm		
Output			2x VGA 2x RCA 2x 3.5mm 12x RJ-45	2x VGA 2x RCA 2x 3.5mm 16x RJ-45
VGA connector		HD-15 [15-pin D-sub female]		
RJ-45 connector		WE/SS 8P8C with 2 LED indicators		
RCA connector		S/PDIF digital audio		
3.5mm connector		Earphone jack for analog stereo audio		
Mechanical			CATS-VGA-12B	CATS-VGA-16B
Housing		Metal enclosure		
Dimensions [L x W x H]	Model		440mm x 96mm x 88mm [1'4" x 3.8" x 3.5"]	
	Packaging		540mm x 230mm x 115mm [1'8" x 9.1" x 4.5"]	
	Carton			
Weight	Model		1.7 kg [3.7 lbs]	1.8 kg [3.9 lbs]
	Packaging		2.8 kg [6.2 lbs]	2.9 kg [6.4 lbs]
Fixedness		2U rack-mount with ears		
Power supply		5V 4A DC		
Power consumption			20 Watts [max]	25 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]		
Package Contents		2x Rack-mounting ears 1x 5V power adapter 1x User Manual		

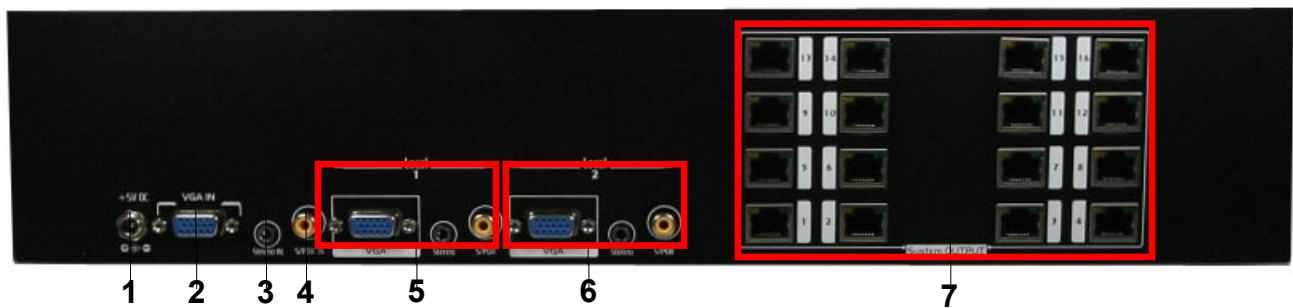
Model Name		CATS-VGA-RX1	CATS-VGA-RX1D
Technical			
Role of usage		Receiver [RX]	
Video bandwidth		350MHz	
Video support		VESA	
Transmission		WUXGA [1920x1200] — 330m (1,000ft) [CAT5e]	
Audio support		Stereo	
Equalization		Continuous analog control	
RGB delay control		No	Yes
Input video signal		1.2 Volts [peak-to-peak]	
ESD protection [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 100W; single 50W]	
Input		1xRJ-45	
Output		1x VGA 1x 3.5mm	1x VGA 1x RCA 1x 3.5mm
VGA connector		HD-15 [15-pin D-sub female]	
RJ-45 connector		WE/SS 8P8C with 2 LED indicators	
RCA connector		S/PDIF digital audio	
3.5mm connector		Earphone jack for analog stereo audio	
Mechanical			
Housing		Metal enclosure	
Dimensions [L x W x H]	Model	110mm x 57mm x 25mm [4.3" x 2.2" x 1"]	150mm x 90mm x 25mm [5.9" x 3.5" x 1"]
	Package	200mm x 140mm x 75mm [7.9" x 5.5" x 3"]	
	Carton	420mm x 400mm x 300mm [1'5" x 1'4" x 1"]	
Weight	Model	172g [6oz]	329g [12oz]
	Package	425g [15oz]	582g [1.3 lbs]
Fixedness		Wall-mount case with screws	
Power supply		5V 2A DC	
Power consumption		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]	
Package Contents		1x CATS-VGA-RX1 1x 5V power adapter 1x User Manual	1x CATS-VGA-RX1D 1x 5V power adapter 1x User Manual

CATS-VGA-12B



1. **+5V DC:** Connect to 5V 4A DC power supply
2. **VGA Input:** Connect to a VGA source with a VGA male-male cable here
3. **Stereo audio Input:** Connect to an earphone audio source here
4. **S/PDIF audio Input:** Connect to a S/PDIF audio source here
5. **Local Video & Audio #1:** Link to a VGA & Audio output
6. **Local Video & Audio #2:** Link to a VGA & Audio output
7. **RJ-45 Out:** Link to CATS-VGA-RX1 or CATS-VGA-RX1D to another PC display with a Cat-5e/6 LAN cable

CATS-VGA-16B



1. **+5V DC:** Connect to 5V 4A DC power supply
2. **VGA Input:** Connect to a VGA source with a VGA male-male cable here
3. **Stereo audio Input:** Connect to an earphone audio source here
4. **S/PDIF audio Input:** Connect to a S/PDIF audio source here
5. **Local Video & Audio #1:** Link to a VGA & Audio output
6. **Local Video & Audio #2:** Link to a VGA & Audio output

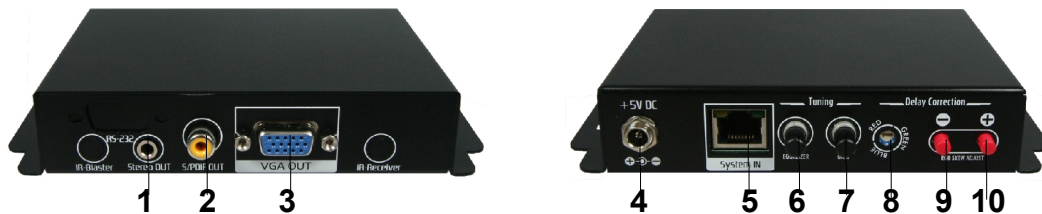
- RJ-45 Out:** Link to CATS-VGA-RX1 or CATS-VGA-RX1D to another PC display with a Cat-5e/6 LAN cable

CATS-VGA-RX1



- +5V DC** power jack: Connect to 5V DC power supply
- VGA OUT:** VGA output to a monitor
- Audio OUT:** Connect to an analog audio output
- RJ-45 IN:** Plug in a Cat-5/5e/6 cable that needs to be linked to the RJ-45 connector of the transmitter.
- EQ:** Rotary control for equalization of red (R), green (G), and blue (B) color channel respectively
- GAIN:** Rotary control for gain control of red (R), green (G), and blue (B) color channel respectively

CATS-VGA-RX1D



- Audio OUT:** Connect to an analog audio output
- S/PDIF OUT:** Connect to a S/PDIF digital audio output
- VGA OUT:** VGA output to a remote video display
- +5V DC** power jack: connect to 5V DC power supply
- RJ-45 IN:** Plug in a Cat-5/5e/6 cable that needs to be linked to the RJ-45 connector of the transmitter.
- EQ:** Rotary control for equalization of red (R), green (G), and blue (B) color channel respectively
- GAIN:** Rotary control for gain control of red (R), green (G), and blue (B) color channel

respectively

8. **Rotary control:** For de-skew compensation on respective color channel (for RGB delay control)
9. **-:** Push-in button for decrease a 2ns level of de-skew compensation (for RGB delay control)
10. **+:** Push-in button for increase a 2ns level of de-skew compensation (for RGB delay control)

Broadcasts PC A/V signals to 4/8/12/16 remote displays and two local receivers

1. Switch off all devices, including monitors.
2. Connect a VGA and audio source (such as a PC) to the VGA and audio In.
3. Connect to the receivers (such as CATS-VGA-RX1 or CATS-VGA-RX1D) via RJ-45 connectors by a Cat-5/5e/6 cable.
4. Plug in 5V 4A DC power supply.
5. Power on the receiver's monitors and speakers.
6. Power on the PC source.

1. All the transmission distances are measured using Belden 1583A Cat-5e 125MHz Solid LAN cable and ASTRODESIGN Video Signal Generator VG-859C. The transmission distance is defined as the distance between the video source and the remote VGA display.
2. The transmission length is largely affected by the type of LAN cables, the type of VGA sources, and the type of VGA 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 suited than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission range than stranded STP CAT6 cable. For long extension users, solid LAN cables are the only viable choice.
3. EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.
4. 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.
5. Because the quality of the LAN 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 LAN cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.



Performance Guide for VGA 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 **VGA & Audio over CAT5 Distribution Series** 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 **VGA & Audio over CAT5 Distribution Series** features and specifications is subject to change without further notice.

