ACE PLUS CORP.

VGA over Single CAT5 Series

EX-G073A

VGA & RS-232 over CAT5 Extender

User Manual

EX-G073A-TX   **EX-G073A-RX**

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![warning triangle icon]

Safety and Notice

The **EX-G073A VGA & RS-232 over CAT5 Extender** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the EX-G073A 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

With only one cost effective CAT-5e cable, the EX-G073A lets you extend VGA (WUXGA) to cover the distance up to 330m (1,000ft). The devices are composed of a transmitter and a receiver. The transmitter EX-G073A-TX is installed near the signal source, and the receiver EX-G073A-RX is placed near the desired display. With built-in EQ and GAIN control, the transmission path can be adjusted to adapt the cable quality and video bandwidth. In order to extend the control path, EX-G073A also built RS-232 half-duplex long range extender along with VGA video signals.

Features

- Supports up to WUXGA [1920x1200@60] or UXGA [1600x1200@60] to 330m (1,000ft)
- Support RS-232 half-duplex & baud rate
- Adjustable equalization and gain control on RX unit
- Wall mounting case for better fixedness
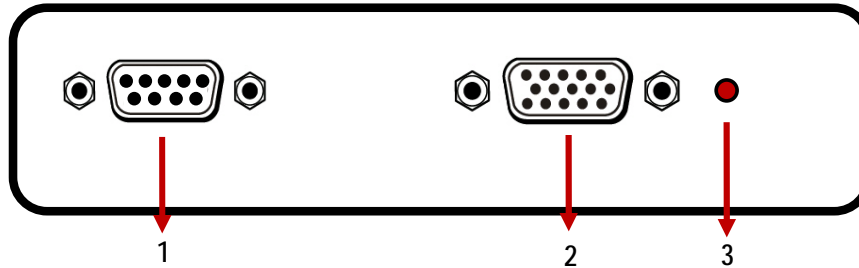
VGA over Single CAT5 Series Lineup

	EX-G028A	EX-G028B	EX-G029A	EX-G029B	EX-G073A	EX-G073B	EX-G075A	EX-G075B
VGA video	●	●	●	●	●	●	●	●
Stereo analog audio			●	●			●	●
RS-232 signals					●	●	●	●
IR signals							●	●
Equalization	●	●	●	●	●	●	●	●
Gain control	●	●	●	●	●	●	●	●
RGB delay control		●		●		●		●
Transmission length	330m [1,000ft] at WUXGA [1920x1200@60] or UXGA [1600x1200@60]							

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Specifications & Package Contents

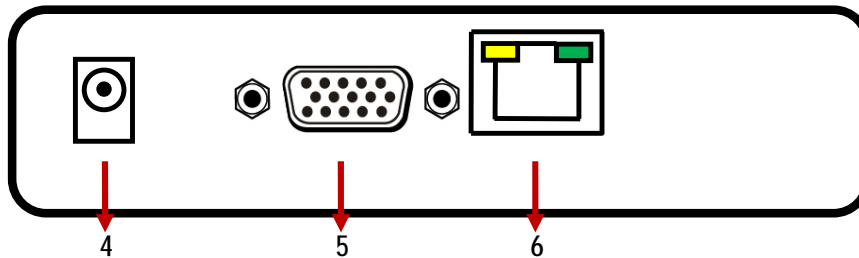| Model Name	EX-G073A		EX-G073B	
Technical	EX-G073A-TX	EX-G073A-RX	EX-G073B-TX aka EX-G073A-TX	EX-G073B-RX
Role of usage	Transmitter [TX]	Receiver [RX]	Transmitter [TX]	Receiver [RX]
Video bandwidth	350MHz			
Video support	VESA			
Transmission	WUXGA [1920x1200] — 330m (1,000ft) [CAT5e]			
Audio support	No			
RS-232 signal type	Half-duplex & baud rate			
Input video signal	1.2 Volts [peak-to-peak]			
Equalization	Continuous analog control			
RGB delay control	No		Yes	
Loop-out	1 VGA loop-out at TX			
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 100Ω; single 50Ω]			
Input	1x VGA 1x RS-232	1x RJ-45	1x VGA 1x RS-232	1x RJ-45
Output	1x RJ-45 1x VGA	1x VGA 1x RS-232	1x RJ-45 1x VGA	1x VGA 1x RS-232
VGA connector	HD-15 [15-pin D-sub female]			
RJ-45 connector	WE/SS 8P8C with 2 LED indicators			
RS-232 connector	DB-9 [9-pin D-sub female]			
Mechanical				
Housing	Metal case			
Dimensions [L x W x H] — Model	[TX/RX] – 123 x 95 x 25mm [4.8"x3.7"x1"]			
Dimensions [L x W x H] — Package	330 x 200 x 95mm [1'1"x7.9"x3.7"]			
Dimensions [L x W x H] — Carton	495 x 440 x 380mm [1'7.5"x1'5.3"x1'3"]			
Weight — Model			400g [14oz]	
Weight — Package				
Fixedness	Wall-mounting case with screws			
Power supply	5V 2A DC			
Power consumption	5 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	1x EX-G073A or EX-G073B [TX &RX] 2x 5V power adapter 1x User Manual			

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Panel Descriptions

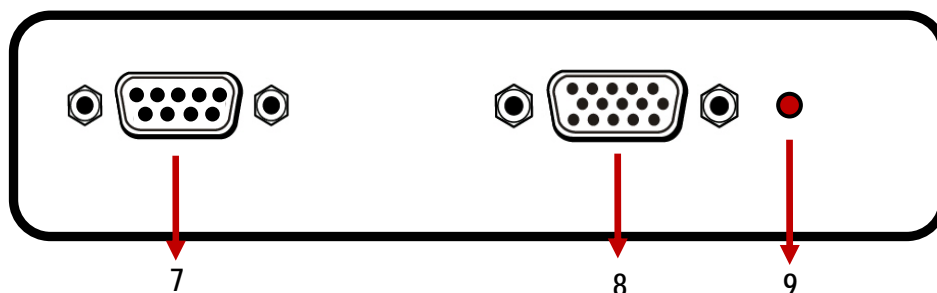## Front Panel — Transmitting unit (EX-G073A-TX)

1. **RS-232 IN**: Connect to a RS-232 signal source

2. **VGA OUT**: VGA output to a remote video display

3. LED power indicator

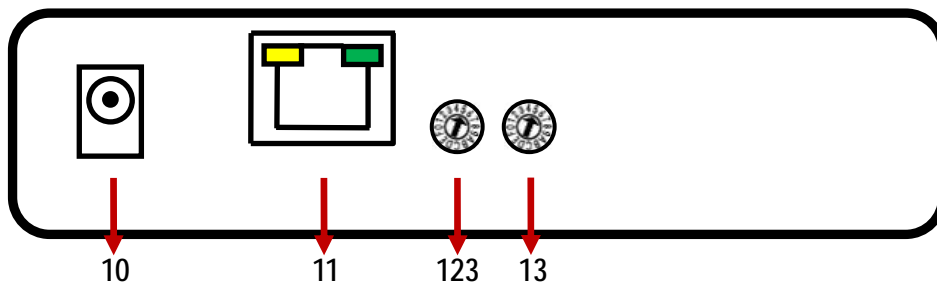## Rear Panel —Transmitting unit (EX-G073A-TX)

4. **+5V DC** power jack: connect to 5V DC power supply

5. **VGA OUT**: VGA loop-out to a local VGA display

6. **RJ-45 OUT**: Plug in a CAT-5/5e/6 cable that needs to be linked to the RJ-45 connector of the receiving unit EX-G073A-RX.

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Front Panel — Receiving unit (EX-G073B-RX)

7. **RS-232 OUT**: Connect to a RS-232 receiving device

8. **VGA OUT**: VGA output to a remote VGA display

9. LED power indicator

Rear Panel — Receiving unit (EX-G073B-RX)

10. **+5V DC** power jack: connect to 5V DC power supply

11. **RJ-45 IN**: Plug in a CAT-5/5e/6 cable that needs to be linked to the RJ-45 connector of the transmitting unit EX-G073B-TX.

12. **EQ**: Rotary control for equalization of R, G, B, respectively

13. **GAIN**: Rotary control for gain control of R, G, B, respectively

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Hardware Installation

1. Connect your VGA and RS-232 source to the transmitting unit.

2. Connect your display and RS-232 receiving device to the receiving unit.

3. Connect your CAT-5/5e/6 cable between the transmitting and receiving units.

4. Make sure your CAT-5/5e/6 cable is tightly connected and not loose.

5. Plug in 5V DC power cord to the power jack of the receiving unit.

6. Plug in 5V DC power cord to the power jack of the transmitting unit.

7. **If a blurred video is seen or even worse, not displayed at all, try to adjust the EQ and Gain rotary controls to improve the cable skew. GAIN rotary controls are designed for gain control, and EQ rotary controls are designed for equalizing the wave form of the receiving video signal. It is suggested to begin with adjusting the rotary control of EQ to get the input video displayed first, and then the GAIN according to the video you see on the screen.**

Notice

1. All transmission distances are measured using Belden 1583A CAT-5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C. The transmission distance is defined as the distance between the video source and the VGA display.

2. The transmission length is largely affected by the type of LAN cables, the type of video sources, and the type of display. The testing result shows solid LAN cables (usually in bulk cable 300m or 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 cables are your only choice.

3. 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.

4. 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 CAT-6 cable is recommended.

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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 **EX-G073A VGA & RS-232 over CAT5 Extender** 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 EX-G073A features and specifications is subject to change without further notice.