

EX-G033A/EX-G033B

RS-232 over CAT5 Extender
(EX-G033B for Point-to-Point & EX-G033A for
Cascadable)

User Manual





Safety and Notice

The **EX-G033B RS-232 over CAT5 Point-to-Point Extender** and **EX-G033A RS-232 over CAT5 Cascadable 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-G033B/EX-G033A 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.

Introduction

With only one CAT-5e cable, the EX-G033 series lets you extend RS-232 signal to cover the distance up to 1,000m (1,100 yards). The devices are composed of a transmitter and a receiver. The transmitter is installed near the serial signal source, and the receiver is placed near the destined device. For EX-G033B, the RX and TX relationship between source and destination units are adjustable through the settings of DIP switches. After finishing the setup, the serial connection has a fixed communication channel between local and remote sites. For EX-G033A, the same source unit as EX-G033B, but on the receiving side, the receivers can be cascaded up to 32 units. This structure allows users to control tens of remote units through single Cat-5 cable. Typical applications include security alarm system, POS system, dumb terminal, etc.

Features

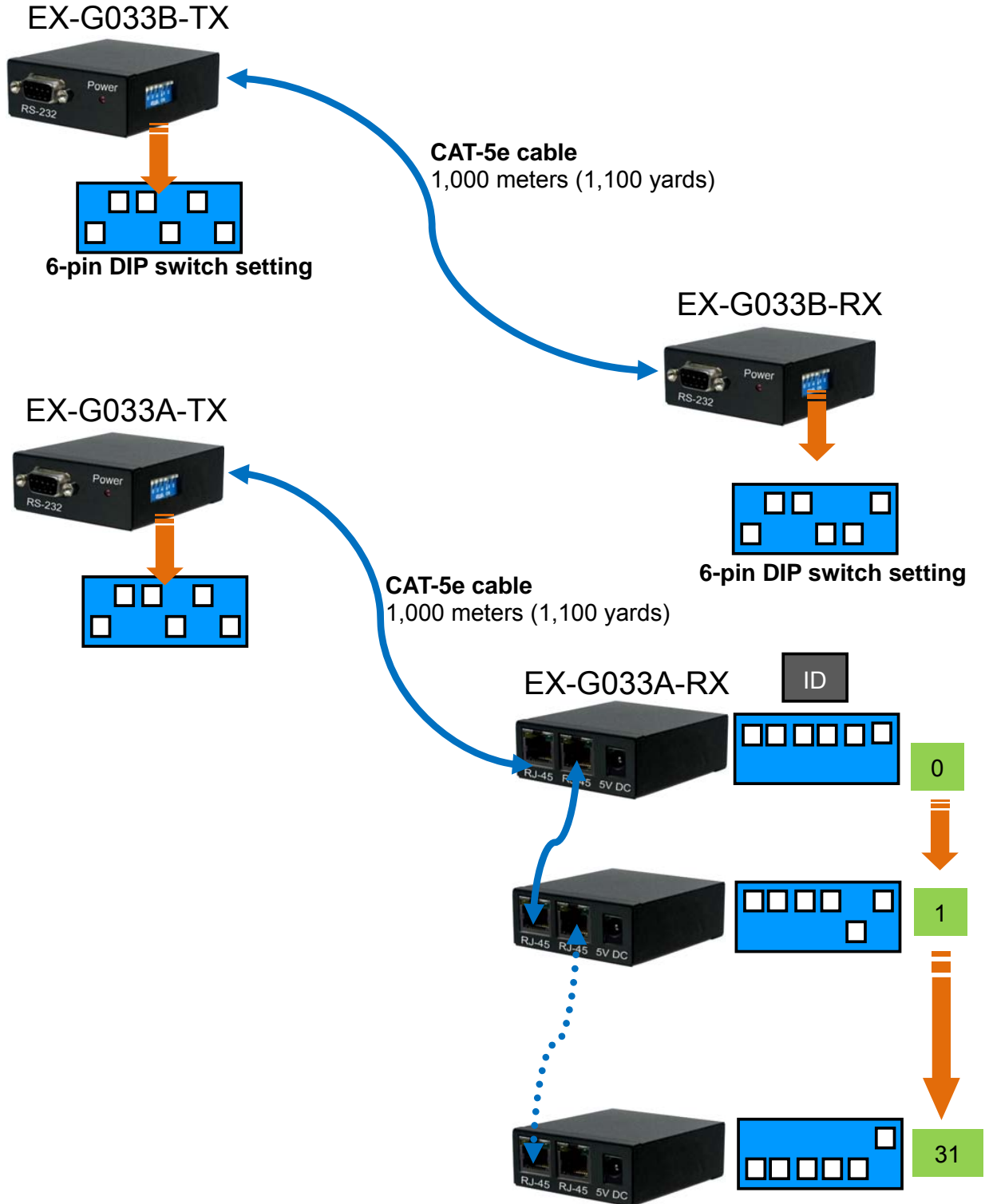
- Sends RS-232 data up to 1,000m (1,100yds)
- Real time pure hardware solution
- Extra RJ-45 for cascading
- Compact size
- EX-G033A offers the ability of cascading; the remote units can be cascaded up to 32 devices.

Specifications & Package Contents

Model Name		EX-G033B		EX-G033A	
Technical		EX-G033B-TX	EX-G033B-RX	EX-G033A-TX	EX-G033A-RX
Role of usage		Transmitter [TX]	Receiver [RX]	Transmitter [TX]	Receiver [RX]
Transmission length		Up to 1,000m (1,100yd) [CAT5e]			
Baud rate		Up to 57.6kbps in cascade mode			
Input		1x RS-232	1x RJ-45	1x RS-232	1x RJ-45
Output		1x RJ-45	1x RS-232 1x RJ-45	1x RJ-45	1x RS-232 1x RJ-45
RS-232 connector		DE-9 [9-pin D-sub female]			
RJ-45 connector		WE/SS 8P8C with 2 LED indicators			
DIP switch		6-pinD & audio mode [SW Main] 6-pin operation & firmware update			
Mechanical		EX-G033B		EX-G033A	
Housing		Metal case			
Dimensions [L x W x H]	Model				
	Package				
	Carton				
Weight	Model				
	Package				
Fixedness		Wall-mounting case upon request			
Power supply		5V 2A DC			
Power consumption		1 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 EX-G033B or EX-G033A [TX & RX] 2x 5V power adapter 1x User Manual			

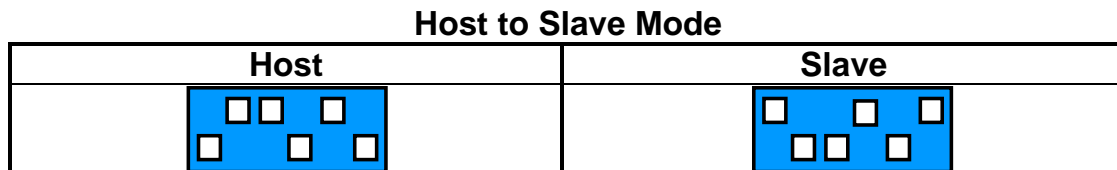
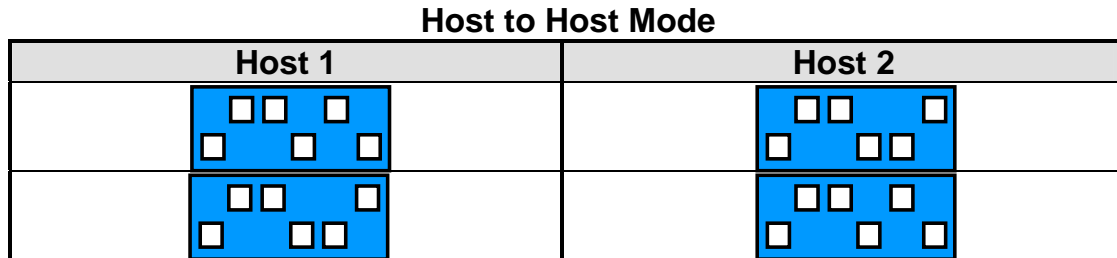
Hardware Installation

1. Connect your serial RS-232 source to the EX-G033B/EX-G033A transmitting unit.
2. Connect your serial receiver to the EX-G033B/EX-G033A 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(s).
6. Plug in 5V DC power cord to the power jack of the transmitting unit.



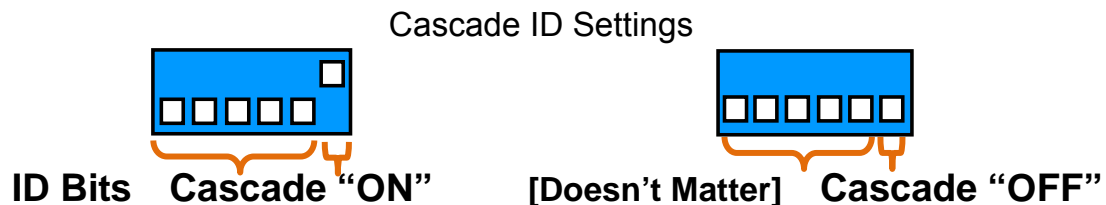
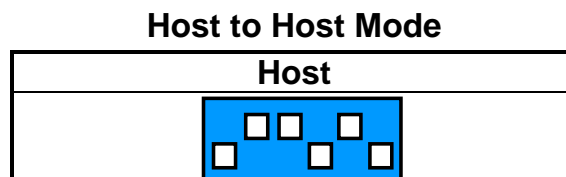
EX-G033B DIP Switch

DIP SWITCH Position



EX-G033A DIP Switch

DIP SWITCH Position



ID Bits are composed of 5 bits, and the left most bit is the highest bit. As cascade bit is set to off as shown above, the EX-G033A acts exactly like EX-G033B, and all the serial command specific to EX-G033A-RX (see table 2) will be ignored.

EX-G033A Serial Command

In order to control the remote units, EX-G033A-RX offers a set of serial command to setup the baud rate, ID, and enable of the feedback from the remote units.

Table 1 — Serial Command Protocol

Byte #	Content	Description
Byte 0	0x7E	Header
Byte 1	0xB9	Header
Byte 2	0X5D	Header
Byte 3	See Table 2	Control Command

Table 2 — Serial Command Bit Definition

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	
Feedback Enable	Baud Rate (bkps): 00: 9600 01: 19200 10: 28800 11: 57600	ID number: 0-31						
			Notice: If the ID numbers are repeat, the connected devices with the same ID may respond with the same feedback.					

Notice

- All transmission distances are measured using Belden CAT-5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C.
- The transmission length is largely affected by the type of LAN cables, the type of A/V sources, and the type of A/V display. The testing result shows solid LAN cables (usually in 300m/1000ft form) can transmit a lot longer signals than stranded LAN cables (patch cord). 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.
- To reduce the interference among the unshielded twisted pairs of wires in CAT-5/5e/6 cable, you can use shielded CAT-5/5e/6 cables to improve EMI problems, which is worsen in the long transmission.
- Because the quality of the CAT-5/5e/6 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 CAT-5/5e/6 cables. For a very long transmission distance, a CAT-6 is recommended.
- After boot up and cascade bit is set to ON, EX-G033A is initially with the baud rate 9600Kbps. Therefore, if users would like to establish a successful communication channel or change the baud rate correctly, **the initial communication rate should be 9600Kbps. The adjustment of the baud rate during communication will NOT be saved.** Turning off and on EX-G033A receiving units will bring the baud rate back to 9600Kbps! While cascade bit is set to OFF, the baud rate of communication is solely dependent upon the capability of RS-232 sender and receiver on both sides.



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 **EX-G033B/EX-G033A 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-G033B/EX-G033A features and specifications is subject to change without further notice.