INSTALLATION INSTRUCTIONS

MODEL RS422232
Bi-Directional RS422/RS232 Converter

Figure 1 – RS422232 Converter

INTRODUCTION

RS232 is an *un-balanced* serial data format allowing for transmission lengths up to 100ft. This distance specification limits the use of this format when used in residential and commercial automation control system applications. RS422 is a *balanced* serial data format with a distance specification of up to 4000ft allowing for a more flexible automation control system configurations. Xantech's **RS422232 Converter** is a bi-directional serial converter, converting between these two formats, in-turn, increasing the maximum distance RS232 devices can be used in.

This product serves two main functions:

1. Convert standard Serial RS232 signals to a balanced RS422 line allowing for increased transmission lengths in upwards of 4000ft over a single CAT5 cable.
2. Companion accessory to the SmartPad LCD™ Touch Screen Panels Serial RS422 output, allowing the SPLCD to control a multitude of RS232 devices in remote locations.

FEATURES / SPECIFICTIONS

- **RS232 I/O Connection**: Connects to RS232 Devices via a standard DB9 connection wired to standard PC Serial Port Specifications.
- **RS422 I/O Connection:** Standard RJ45 connection.
- **RS422 Wiring:** CAT5 or higher up to 4000ft (under ideal wiring conditions) wired to the ETIA/TIA 568B standard.
- **RS232 Wiring:** Standard Serial DB9 cable up to 100ft (under ideal wiring conditions).
  Note: Since the RS422232 converter allows RS232 to be run over long distances, it is recommended that the unit be placed as close to the RS232 device as possible.
- **Data Tx/Rx LED:** Green LED indicating Data is being transmitted through both data ports.
- **Power Requirement:** Regulated 12VDC Power is required. (Xantech 781RG Power supply included)
- **Power Connection:** 2.1mm Coaxial Plug (Center Pin=12VDC; Sleeve=Chassis GND)
- **Power Indicator LED:** Red LED indicating presence of 12VDC power.
- **Current Rating:** 75mA @12VDC

APPLICATION WIRING

Application #1: Use with SmartPad LCD™ Touch Screen Panel

Note$_1$: This RJ45 Terminated CAT5 cable needs to be wired in a *pin-to-pin* configuration.
Note$_2$: The RS422232 may be placed at a maximum distance of 4000ft. from the SmartPad LCD™ Display.
Note$_3$: Some Serial devices require the use of a 'Null Modem' cable or connector for proper communication. You will need to consult the products instruction manual to see if this is required. Refer to **Table 1A** for Xantech Model RS422232 Pin Out information.
See **Figure 2** for reference.

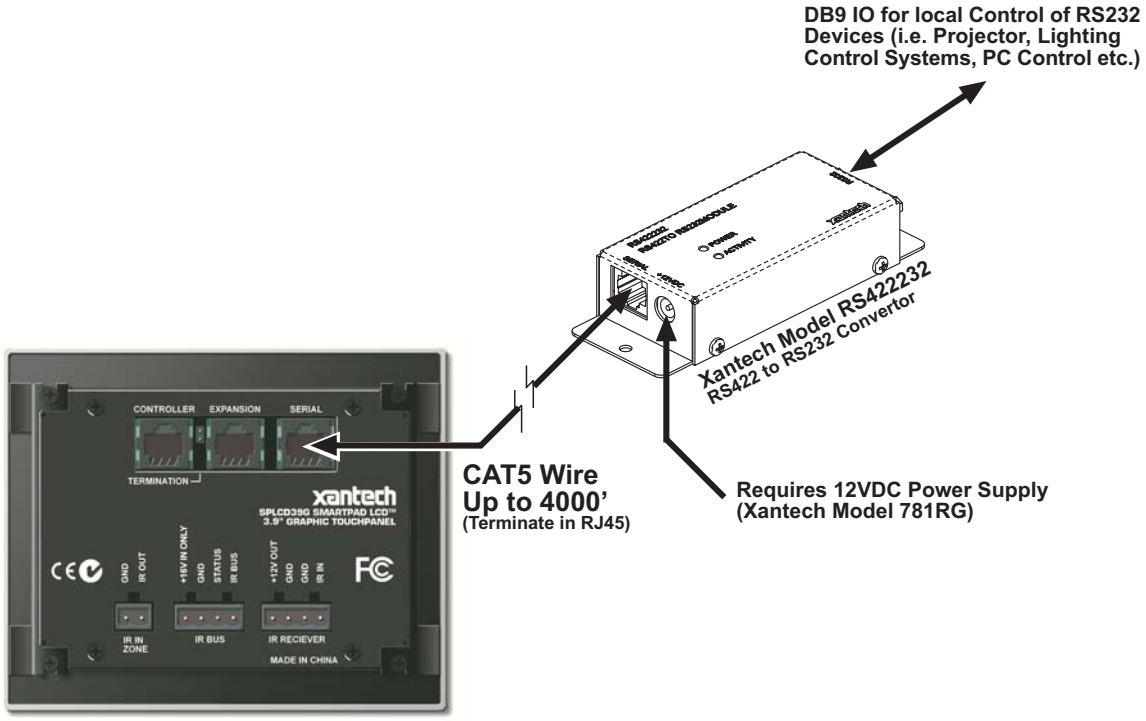

Figure 2: RS422232 Wiring to SmartPad LCD™

1. Connect one end of an RJ45 terminated CAT5 cable to the connector labeled SERIAL on the rear of the SmartPad LCD™ Display.
2. Connect the other end of this CAT5 cable to the connector labeled SERIAL on the RS422232 converter located at the remote location within close proximity (less than 50ft for bi-directional communication) to the Serial device to be controlled.
3. Connect a Female DB9 terminated serial cable to the RS422232 connector labeled RS232.
4. Connect the other end of this cable to the Serial device being communicated to. (See **Note$_3$** above)
5. Connect the included 781RG 12VDC power supply to the 2.1mm Coaxial Power jack on the RS422232 Converter.

Application #2: Use as a standalone device to increase standard Serial communication distance between two (2) Serial RS232 Devices.

Note$_4$: This will require the use of two (2) RS422232 Units. One placed at one Serial Device location and another placed at the other Serial Device location.

Note$_5$: This RJ45 Terminated CAT5 cable needs to be wired in a *X-Over* pin configuration. **See Table 1B for Wiring information**
Note$_6$: The two (2) RS422232's may be placed at a maximum distance of 4000ft. from each other.
See **Figure 3** for reference.

1. Connect one end of an RJ45 terminated CAT5 cable to the SERIAL port of one RS422232 unit and connect the other end to the SERIAL port on the other RS422232 unit. (See Note$_6$)
2. Connect the female DB9 RS232 Ports of each RS422232 to the devices to be communicated to.
3. Connect a Female DB9 terminated serial cable to the RS422232 connector labeled RS232.
4. Connect each of the included 781RG 12VDC power supply to the 2.1mm Coaxial Power jack on each RS422232 Converter.

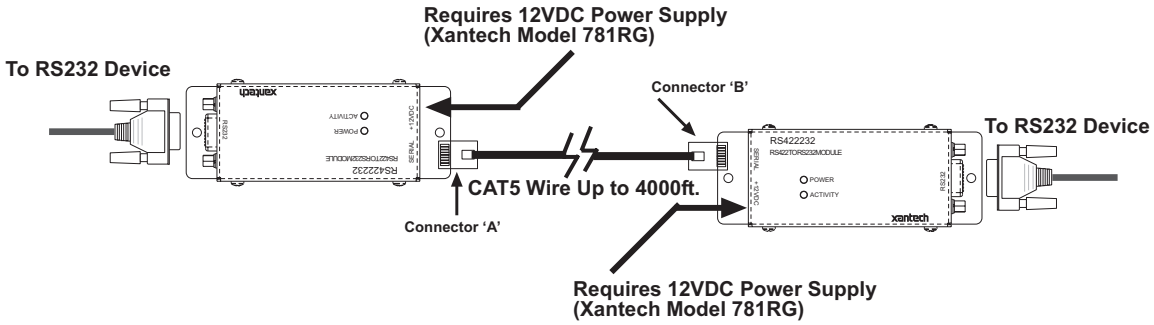

Figure 3: Extending RS232 Devices (See Table 1B for CAT5 Wiring)

Pin #	SERIAL		RS232
1	RD_SER +		
2	RD_SER -		Rx
3	TD_SER +		Tx
4	RTS_SER -		
5	RTS_SER +		GND
6	TD_SER -		
7	CTS_SER +		RTS
8	CTS_SER -		CTS
9			

Table 1A: RS422232 Pin Out

Pin #	WIRE COLOR	Connector A		Connector B	WIRE COLOR	Pin #
1	Orange/White	RD_SER +		TD_SER +	Green/White	1
2	Orange	RD_SER -		TD_SER -	Green	2
3	Green/White	TD_SER +		RD_SER +	Orange/White	3
4	Blue	RTS_SER -		CTS_SER -	Brown	4
5	Blue/White	RTS_SER +		CTS_SER +	Brown/White	5
6	Green	TD_SER -		RD_SER -	Orange	6
7	Brown/White	CTS_SER +		RTS_SER +	Blue/White	7
8	Brown	CTS_SER -		RTS_SER -	Blue	8

Table 1B: CAT5 X-Over Cable for Combining 2 RS422232 Units

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