This document describes the **SmartPanel** Projector Driver for the **Sharp XG-E3000U** projector. For more information on configuring and using the Panel see the *SmartPanel Configuration and Installation Manual.*

I. PROJECTOR CONTROL

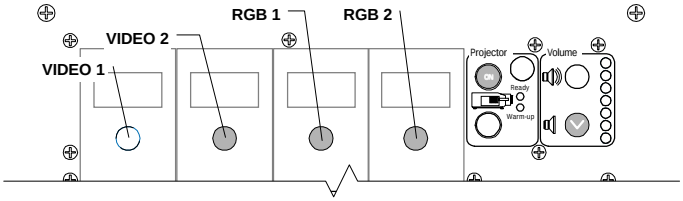
A. Volume and Power Control

Volume control on the Sharp is **absolute**.

B. Input Selection Mapping

The following table specifies the factory-preset input mapping for this Driver. The **Configuration Utility** can be used to customize these settings your installation.

Selection 1:	VIDEO 1
Selection 2:	VIDEO 2
Selection 3:	RGB 1
Selection 4:	RGB 2

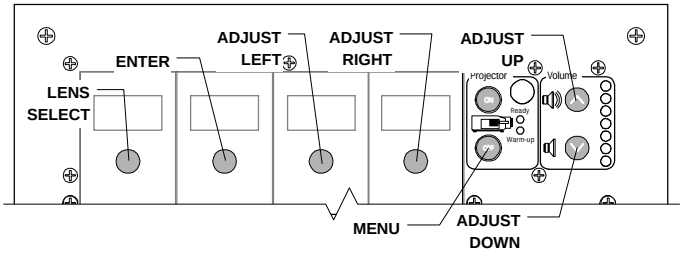


Input choices available for the Sharp with this Driver are VIDEO 1, VIDEO 2, RGB 1 and RGB 2.

C. Hidden Function Mapping

The following table specifies the factory preset hidden function mapping for this Driver. The **Configuration Utility** can be used to customize these settings your installation.

Selection 1:	LENS SELECT
Selection 2:	ENTER
Selection 3:	ADJUST LEFT
Selection 4:	ADJUST RIGHT
Off:	MENU
Volume Up:	ADJUST UP
Volume Down:	ADJUST DOWN



Hidden functions names are based on the Sharp remote and controls on top of the projector. *Adjust* controls navigate through onscreen menus. Hidden functions are accessed by pressing the indicated key while the holding the **On** key down.

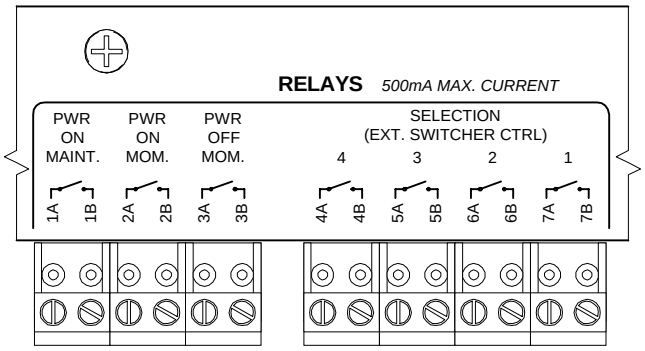
The hidden functions available for the Sharp with this Driver are as follows:

MENU
ADJUST LEFT
ADJUST RIGHT
ADJUST UP
ADJUST DOWN
ENTER
LENS SELECT
LENS FOCUS +
LENS FOCUS -
LENS ZOOM +
LENS ZOOM -

D. Relays

The following table specifies the factory preset settings for the low-current relays found on the rear of the **SmartPanel.** The **Configuration Utility** can be used to customize these settings your installation.

Relay 1	ON Maintained
Relay 2	ON Momentary
Relay 3	OFF Momentary
Selection	Momentary; not Binary



E. Other Presets

The following table specifies other default factory settings for this Driver that affect is control of the Projector.

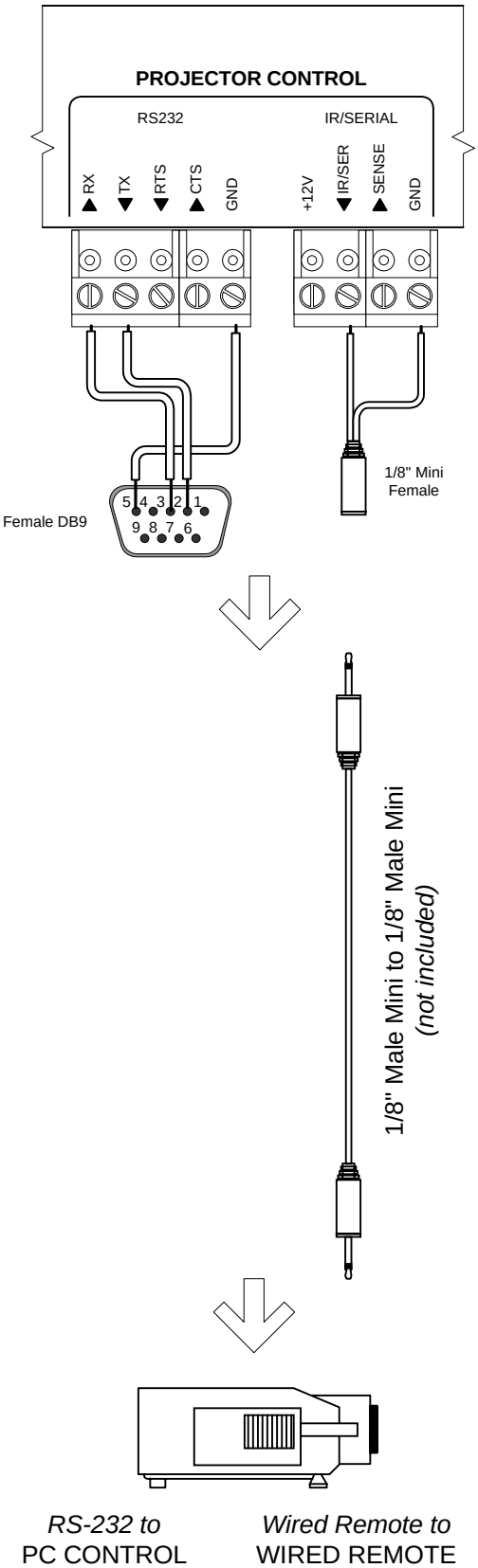
Power Status Feedback Method	RS-232 Polling (see note 1)
Control Wiring Option	Wired Remote (see note 2)

Control for the Sharp with this Driver is via both RS-232 and IR/Wired Remote. We recommend wiring for the Wired Remote but the included IR emitter may also be used.

The following table specifies settings for the Panel's configurable timers. For more information on the inactivity shutdown feature and the lockout timer see the *SmartPanel Configuration and Installation Manual*

Lockout Timer	65 seconds (see note 3)
Inactivity Shutdown	Disabled

II. CONTROL WIRING



This section specifies how RS-232 and Wired Remote should be wired to the Sharp projector.

A. RS-232 should be connected to the Sharp control port labeled **PC Control**. Connection should be as follows:

1. Wire the Panel to a female DB9 as follows:
   RX to 2
   TX to 3
   GND to 5

2. Connect this female DB9 to the projector port labeled *PC Control*.

3. Optionally, an intermediate cable (female DB9 to male DB9) may be used to facilitate service to the projector or Panel.

B. The Wired Remote should be connected to the Sharp port labeled **Wired Remote**. Connection should be as follows:

1. Wire the Panel to a female 1/8" Mini as shown; wire *IR/SER* to *tip* and *GND* to *ring.* Direct wiring to male 1/8" is not recommended as it makes removal of the Panel for service more difficult.

2. Attach to the projector port labeled *Wired Remote* using a male 1/8" mini to male 1/8" mini (not included).

3. Alternately, replace the male to male cable with the included the IR Emitter and attach it to one of the IR windows on the projector. The emitter glows red when IR is emitted so wiring can be verified.

 help@spcontrols.com

III. SPECIAL NOTE: SHARP FIRMWARE PROBLEMS

Nature of the Problems
Some installations of the Sharp XG-E3000U have reported a “blooming” psychedelic display of colors, resulting from the failure of one of the Sharp’s video boards to properly initialize.

The problem is characterized by a color-wash cycling, and scrambled or absent video display.

We have demonstrated that this problem may consistently be provoked by flooding the Sharp’s serial port with data. We currently believe that the Sharp is incapable of correctly handling correctly formatted RS-232 communications during limited but consistent conditions, even in normal operation.

Our Position
At present **these problems are known to be Sharp XG-E3000U firmware problems.** Onsite analysis of this problem has revealed no SmartPanel malfunction whatsoever. We are currently working with Sharp help them patch the XG-E3000U firmware.

Advisory
We recommend that **all Sharp XG-E3000U installations should upgrade or install the Revision B Driver.**

This revision adjusts timing to be as conservative as possible; as a result, we believe problems should be minimized or absent entirely. However, users and installers may notice slightly increased delays introduced between switching and other control events.

Please notify SP Controls technical support at once if any installation exhibits control problems of the type described above with the Revision C driver.

What to do in an Emergency
In all cases, the field remedy for control failures has been to power cycle the Sharp. **No reconfiguration or power cycling of the SmartPanel has been necessary at any site where the problem has occured.**

IV. TROUBLESHOOTING

Addition tips can be found in the *SmartPanel Configuration and Installation Manual.*

The Panel controls the projector, but cannot turn it on or off; or, the Panel turns the projector on and off, but does not control it.

The Sharp is controlled using both Wired Remote/IR and RS-232. Power (and most hidden functions) are controlled via Wired Remote/IR, while input selection and volume are controlled via RS-232. If only a subset of functionality appears to be working, verify that both types of control wiring are correctly wired.

The Panel does not do anything at all.

When power is applied to the Panel it should run through a brief power on self-test, during which all of the Panel lights will turn on and off in sequence. If you do not see this self test, make sure power is connected correctly and that polarity is correct.

The Panel keeps turning itself off even though the projector is on.

The Panel turns itself off when power polling indicates that the projector is off. Check to make sure the RS-232 connection is correctly wired (it is extremely unlikely other control would work, and power polling not).

When I try to turn the projector on, the warming indicator (red LED) blink.

The projector is in the default configured *lockout state*, and the Panel is waiting for its internal lockout timer to expire. This feature protects the projector's bulb. Be sure to let your client know about this behavior.

V. TECHNICAL NOTES

1. By default, projector power is verified by polling every few seconds via the RS-232 port. Power polling can be suspended by depressing and holding the **On** key; polling will be restored when the key is released. Should the Sharp power off, the Panel will usually detect this condition and power off within twenty seconds. Should the Sharp power on, the Panel will usually detecting this condition and power on within ten seconds.

2. The Sharp is controlled via both IR/Wired Remote and RS-232. We recommend Wired Remote control as it is generally more robust. However, use of the Wired Remote will prevent use of the Sharp's remote control. A complete discussion of the relative advantages of IR vs. Wired Remote can be found in the *SmartPanel Configuration and Installation Manual.*

3. The lockout timer specifies the amount of time allowed between sending *POWER OFF* and *POWER ON* to the projector (the delay allows the projector bulb to cool before re-powering). This delay can be configured using the **Configuration Utility**; however, adjusting the lockout timer delay is **strongly discouraged** as rapid re-powering causes undue wear on the projector's bulb. Also, the Sharp will **not** allow power to be restored before a minimum delay has expired. Therefore, **disabling the lockout delay will cause potentially confusing Panel behavior.**

VI. REVISION HISTORY

1. Revision A (February, 1998)
2. Revision B (October, 2001) *Adjusted timing to address Sharp Firmware problems.*