



**NOTE:** This one-page document is intended **only as a quick reference for installation** – please read the SP Controls Application Note for a complete description of this projector driver prior to installation.

## I. Driver Features

### 1. Input Selection Mapping

<i>Selection 1:</i>	DVI
<i>Selection 2:</i>	S-VIDEO
<i>Selection 3:</i>	VIDEO
<i>Selection 4:</i>	VIDEO

### 2. Hidden Function Mapping (Default Configuration)

Using the ON button as a shift key, press the following buttons to access the specified projector features.

<i>Selection 1:</i>	ENTER
<i>Selection 2:</i>	UNDO
<i>Selection 3:</i>	ADJ LEFT
<i>Selection 4:</i>	ADJ RIGHT
<i>Off:</i>	MENU
<i>Volume Up:</i>	ADJ UP
<i>Volume Down:</i>	ADJ DOWN

### 3. Other Driver Features

<i>Power Status Feedback Method</i>	Sensor
<i>Control Wiring:</i>	IR-Emitter

## II. Wiring Specifications

**NOTE:** For a wiring diagram, please see the SP Controls Application Note.

### 1. Infrared Emitter:

Wire the Panel IR/Serial port to a female 1/8" Mini as follows:

<i>IR/SER to</i>	<i>tip</i>
<i>GND to</i>	<i>ring</i>

Connect to the included IR Emitter and attach the emitter bud to any projector IR window.

## III. Additional Projector Information

There are settings on the Sharp PG-M20x projector that will affect how the SmartPanel will work. In order to receive the best performance, set the following options to **OFF** in the projectors menu screens.

Press the *MENU* button either using the SmartPanel hidden functions or the Sharp remote control. Then change the following settings.

1. In the Options menu screen turn Auto Power Off to **OFF**
2. In the Options menu screen turn the Power Save to **OFF**
3. In the Options menu screen turn the Auto Search to **OFF**



# Projector Driver Application Note

## Sharp PG-M20x

### Revision A

This document describes the **SmartPanel** Projector Driver for the **Sharp PG-M20X** 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

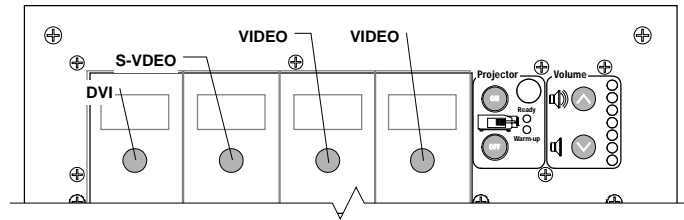
Volume control on the Sharp is **relative**.

### 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:	DVI
Selection 2:	S-VIDEO
Selection 3:	VIDEO
Selection 4:	VIDEO

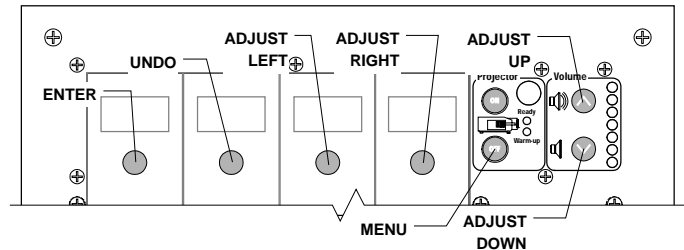
Input choices available for the Sharp with this Driver are DVI, S-VIDEO, and VIDEO



### 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:	ENTER
Selection 2:	UNDO
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.

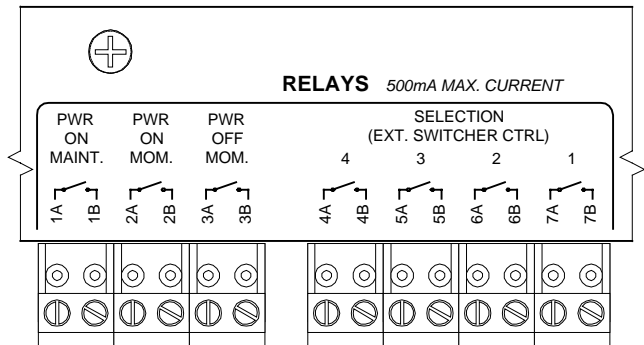
The hidden functions available for the Sharp with this Driver are as follows:

- MENU
- ADJUST LEFT
- ADJUST RIGHT
- ADJUST UP
- ADJUST DOWN
- ENTER
- ENLARGE +
- ENLARGE -
- FREEZE
- AV MUTE
- UNDO

**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 its control of the Projector.

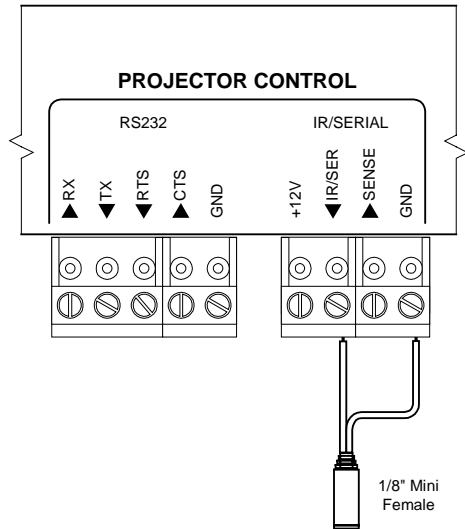
<i>Power Status Feedback Method</i>	Sensor (see note 1)
<i>Control Wiring Option</i>	IR-Emitter (see note 2)

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	100 seconds (see note 3)
Inactivity Shutdown	Disabled

## II. CONTROL WIRING



This section specifies how IR-Emitter should be wired to the Sharp projector.

**A.** The IR Emitter should be connected to the one of the Sharp IR windows as follows:

1. Wire the Panel to a female 1/8" Mini as show; wire *IR/SER* to *tip* and *GND* to *ring*. Splicing and direct wiring to the IR Emitter is not recommended as it makes removal of the Panel for service more difficult.
2. Connect the included IR Emitter to the female mini.
3. Affix the IR Emitter to one of the IR windows on the projector.

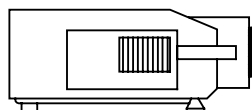
Note that the emitter glows red when IR is emitted so wiring can be verified.

### Additional Projector Settings:

There are settings on the Sharp PG-M20x projector that will affect how the SmartPanel will work. In order to receive the best performance, set the following options to **OFF** in the projectors menu screens.

Press the *MENU* button either using the SmartPanel hidden functions or the Sharp remote control. Then change the following settings.

1. In the Options menu screen turn Auto Power Off to **OFF**
2. In the Options menu screen turn the Power Save to **OFF**
3. In the Options menu screen turn the Auto Search to **OFF**



IR Emitter to  
any IR window

### III. TROUBLESHOOTING

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

*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 warning 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.

### IV. 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**.

### V. REVISION HISTORY

1. Revision A (September 2003) *Initial Release*.