



**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

Selection 1:	VIDEO
Selection 2:	COMPONENT
Selection 3:	S-VIDEO
Selection 4:	COMPUTER 1

### 2. Hidden Function Mapping

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

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

### 3. Other Driver Features

Power Status Feedback Method	RS-232 Power Polling
Control Wiring:	RS-232 Only

## II. Wiring Specifications

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

**RS-232:** Wire the Panel RS-232 port to a male DB9 as follows:

RX to	2
TX to	3
GND to	5

Connect this male DB9 to the Sanyo control cable. Plug the other end of the cable into the 8-pin mini-DIN projector port labeled *CONTROL PORT*. **NOTE:** the pinout for 8-pin mini-DIN direct termination is provided in the *Application Note* below.

## III. Additional Projector Information

For use with the SmartPanel:

- **DISPLAY** must be disabled. To set the DISPLAY option to OFF, use set top controls, remote control, or SmartPanel hidden functions to activate the on screen menus on the Sanyo. Scroll over to the menu to the SETTING menu (the first item is LANGUAGE) and toggle down to DISPLAY. Deselect the DISPLAY option.
- **POWER MANAGEMENT** should be disabled in the SETTING menu as well. By default, the projector will shut itself off in 5 minutes in the absence of an input signal.

For more information, see the *Special Control Note* (Section IV in the Application Note below).

Note: This projector takes approximately 5 seconds to switch inputs. This is not related to Panel control.



This document describes the **SmartPanel** Projector Driver for the **Sanyo PLC-XT11** projector. For more information on configuring and using the Panel see the *SmartPanel Configuration and Installation Guide*.

NOTE: Please read the *Special Control Note* below for important information on necessary projector configuration settings.

NOTE: This projector takes around 5 seconds to switch inputs. This is not related to Panel control.

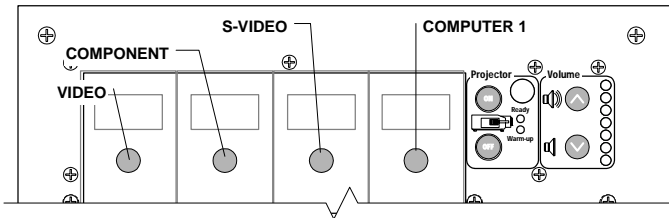
## I. PROJECTOR CONTROL

### A. Volume and Power Control

Volume control on the Sanyo is **relative**. Absolute volume control is only possible with the optional SP Controls **Audio Follow Video Pre-Amplifier**.

### 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.



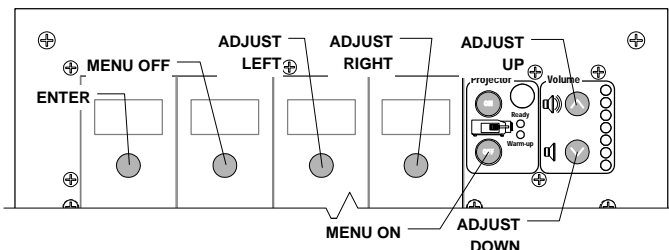
Selection 1:	VIDEO
Selection 2:	COMPONENT
Selection 3:	S-VIDEO
Selection 4:	COMPUTER 1

Input choices available for the Sanyo with this Driver are *Video, Component, S-Video, Computer 1, Computer 2 Analog, and Computer 2 Digital*.

Each input can be individually selected (e.g., you can permanently connect an S-Video source and a Composite Video source).

### 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:	MENU OFF
Selection 3:	ADJUST LEFT
Selection 4:	ADJUST RIGHT
Off:	MENU ON
Volume Up:	ADJUST UP
Volume Down:	ADJUST DOWN

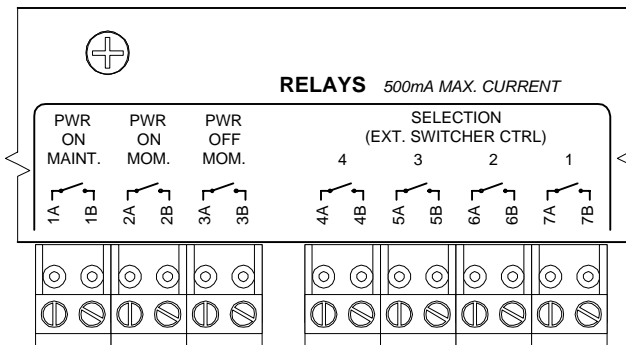
Hidden functions names are based on the Sanyo remote and controls on top of the projector. *ADJUST* controls navigate through onscreen menus. Hidden functions are accessed by pressing the indicated key while the holding the **On** key down.

*AUTO PC ADJUST* and *FREEZE* work only for the *COMPUTER* input. *ZOOM* and *FOUCS* are used with the *ADJUST DOWN* and *ADJUST UP* keys.

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

- |              |            |                |
|--------------|------------|----------------|
| MENU ON      | KEYSTONE + | D. ZOOM UP     |
| MENU OFF     | KEYSTONE - | D. ZOOM DOWN   |
| ADJUST LEFT  | FOCUS UP   | AUDIO MUTE ON  |
| ADJUST RIGHT | FOCUS DOWN | AUDIO MUTE OFF |
| ADJUST UP    | ZOOM UP    | VIDEO MUTE ON  |
| ADJUST DOWN  | ZOOM DOWN  | VIDEO MUTE OFF |
| ENTER        | FREEZE ON  | AUTO PC ADJUST |
|              | FREEZE OFF |                |

**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.

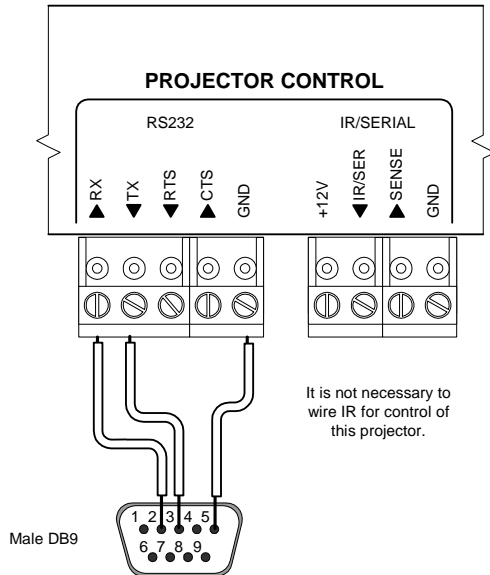
<i>Power Status Feedback Method</i>	RS-232 Power Polling (see note 1)
<i>Control Wiring Option</i>	RS-232 Only (see note 2)

Control for the Sanyo with this Driver is via RS-232 only. However, we always recommend wiring for IR Emitter in the event that the projector specifications change or in the installation changes projectors in the room at a later date.

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 Guide*.

Lockout Timer	100 seconds (see note 3)
Inactivity Shutdown	Disabled

## II. CONTROL WIRING

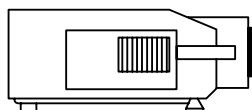
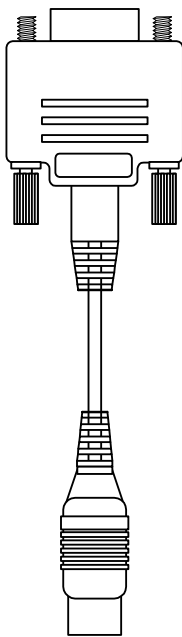


This section specifies how RS-232 should be wired to the projector.

RS-232 should be connected to the Sanyo control port labeled **CONTROL PORT**. Connection should be as follows:

1. Wire the Panel to a male DB9 as follows:  
RX to 2  
TX to 3  
GND to 5
2. Connect this male DB9 to Sanyo's custom Serial Cable (DB9 to DIN) as shown.
3. Connect the Sanyo custom cable to the projector port labeled *CONTROL PORT*.
4. If the intermediate cable is unavailable, the control cable can be terminated directly in a male 8-pin mini-DIN jack using the following pinouts:  
TX to 1  
RX to 6  
GND to 8

Sanyo Control Cable (Ships with Projector)



RS-232 to  
CONTROL PORT

### III. TROUBLESHOOTING

Additional tips can be found in the *SmartPanel Configuration and Installation Guide*.

*The Panel is not controlling the projector.*

Verify that the RX and TX wires are landed properly – crossing TX and RX is a frequent cause of trouble. This can be easily checked by reversing the TX and RX wires where they land on the blue captive screw connectors on the back of the Panel.

*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, focusing on the RX line from the projector to the Panel.

*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.

*When I turn on the projector, the input selection is out-of-sync with the Panel!*

Be sure the projector DISPLAY option is set to OFF as specified in *Section IV. Special Control Note* of this document.

### IV. SPECIAL CONTROL NOTE

The Sanyo projector DISPLAY must be disabled through the on-screen menus in order to work with the SmartPanel. If the DISPLAY function is not set to *OFF*, there is a possibility that when the projector is powered on the input source it displays will be out of sync with the Panel input selection.

To set the DISPLAY option to OFF, use set top controls, remote control, or SmartPanel hidden functions to activate the on screen menus on the Sanyo. Scroll over to the menu to the SETTING menu whose first item is LANGUAGE and toggle down to DISPLAY. Deselect the DISPLAY option.

You should also to set POWER MANAGEMENT to OFF in the SETTING menu. By default, the projector will shut itself off in 5 minutes in the absence of an input signal.

## 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 Sanyo power off, the Panel will detect this and power off within twenty seconds. Should it power on, the Panel will detecting this and power on within thirty seconds.
2. This Sanyo is controlled by RS-232. For a discussion of the relative merits of RS-232 versus IR Emitter, please see the *SmartPanel Configuration and Installation Guide*.
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 Sanyo will **not** allow power to be restored before a minimum delay of 95 seconds has expired. Therefore, **disabling the lockout delay will cause potentially confusing Panel behavior**.

## VI. REVISION HISTORY

1. Revision A (December, 2004) *Initial release*.