4PSWT(RS)-PCB Cascading Video Switcher Module

Introduction

4PSWT(RS)-PCB video switcher has the ability to be cascadable up to 256 cameras. The architecture is individual 4x1 video switchers that daisy-chain the video outputs by RS232 command to become an nx1 video switcher. For stand along application, it keeps all of the features of the regular 4-position switcher.

RS232 Input Connections:

COMPUTER COM1

DB-9 Female			4PSWT(RS)-PCB
GND	5	----------	GND
TXD	3	----------	ALARM INPUT (RXD)

Communication Setting:

2400 baud, 8 bit, non-parity, 1 stop bit

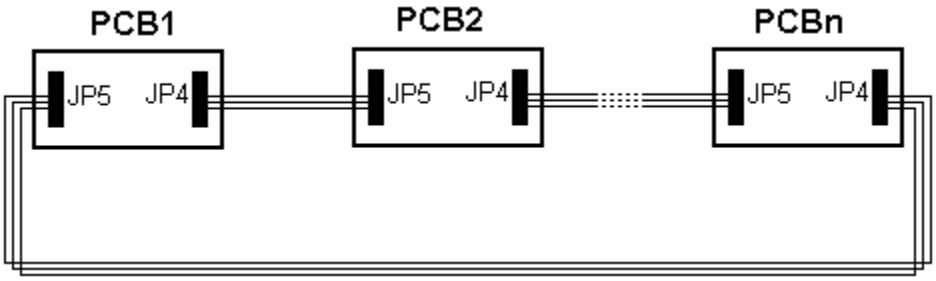
Connection

Each PCB contains 4 video input BNCs that are terminated by 75Ω resistor, a BNC video output into 75Ω, power connector, and two 4-pin header connectors. The pinout of the 4-pin headers is shown below:

	JP5	JP4
Pin 1	not connected	not connected
Pin 2	RS232 connection	RS232 connection
Pin 3	cascade video out (CVO)	cascade video in (CVI)
Pin 4	Ground	Ground

Cascaded Configuration:

In cascaded configuration, **JP2** must be closed, and **JP3** must be open.



Note that we only need one PCB in the cascade connects to RS232 input from the rear connector because the interconnection of JP4 and JP5.

Operation

Stand-along mode:

On power up, the 4PSWT(RS)-PCB works in stand-alone mode, in which it can perform homing, bypassing, and sequencing by using four toggle switches and a dwell pot. If no homing switch is asserted, the switchers sequence all the cameras in the loop which are not bypassed. If a homing switch is asserted, the switcher will home to that camera. If multiple cameras are homed then the homing camera is homed if it's the first one pressed, or then if released homes to the next camera before in the order of cascading.

The 4PSWT(RS)-PCB has a pot for adjusting the dwell time for sequencing operation between cameras. The dwell time is from 1 second to approximately 30 seconds.

RS232 control mode:

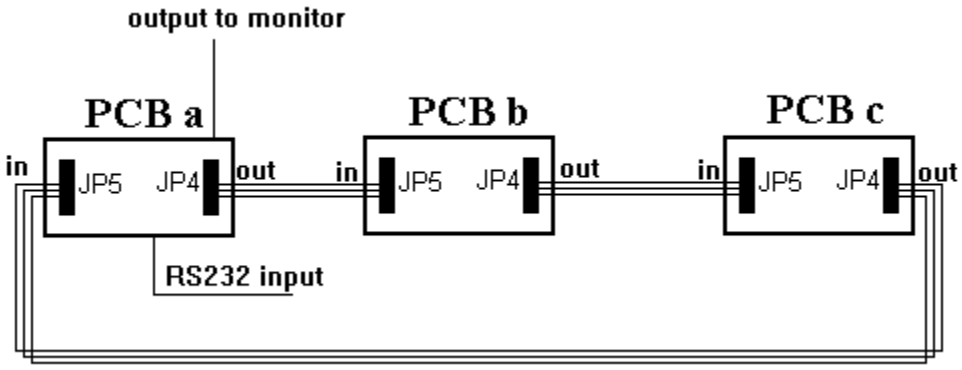
Once a correct command is received, the 4PSWT(RS)-PCB exits stand-alone mode and enters the RS232 control mode. In this mode, commands override any settings of the four toggle switches, which means that 4PSWT(RS)-PCB reacts to the command regardless of the switches setting. To return to stand-alone mode, a return command must be received by the PCB.

RS232 commands are composed of a polling flag byte, an address byte and a command byte. Polling flag is 1BH (ESC). Address is from 61H (a) to 68H (h) depending on which sub-release software is used for up to a 32x1 video switcher. Theoretically, one byte address can distinguish 256 4PSWT(RS)-PCB. Contact the factory for larger cascading size. Command is from 1 to 5 or N.

All five 4PSWT(RS)-PCB commands are list as follows, supposing the address is 61H (a):

1BH 61H 31H	---------- home to camera 1 ----------
1BH 61H 32H	---------- home to camera 2 ----------
1BH 61H 33H	---------- home to camera 3 ----------
1BH 61H 34H	---------- home to camera 4 ----------
1BH 61H 35H	---------- home to cascaded video input ----------
1BH 61H 4EH	---------- return to stand-along mode ----------

To do a video cascade using RS232 command, home the 4PWST(RS)-PCB you want to output video signal to cascaded video input. For example, we have three 4PWST(RS)-PCB cascade as follows:



Suppose we want to display the video of the 3rd camera of PCB b and the addresses of the three PCBs are a, b, c respectively. The following command is needed:

<ESC><b><3>, <ESC><c><5>, <ESC><a><5>.