

# Technovision Interactive 421VS



## Operating Guide Revision 2017-11

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## 421VS SYSTEM OVERVIEW

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The Technovision PC-2 is a 4 to 1 vertical interval (audio follow video) switcher capable of being controlled various ways, using the external CONTROL connector on the back:

The different modes of control are:

- 2-line TTL control (**DEFAULT**)
- 4-line TTL (dry contact closure) control
- RS232 control

### CAUTION

Please make sure the power supply to the 421VS is unplugged before attaching cables. Static discharge into the 421VS through any of its connectors may damage the switcher.

### \*\*NOTE\*\*

**VIDEO INPUT#1 MUST BE CONNECTED – THIS INPUT IS USED TO GENERATE THE VERTICAL SYNCH PULSE.**

## TTL CONTROL MODES: (2 and 4 line mode)

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- The default setting for the switcher is 2-line TTL controls (DIP switch positions 1 and 2 **OFF**).
- INPUT CONTROL lines are pulled high internally by the switcher. To select an input you will have to pull the appropriate input control lines on the CONTROL connector to ground. The default video input at power-up is 1 (all INPUT CONTROL lines high).
- In 2-line mode, the control lines must be kept low or the input will switch back to 1.
- In 4-line mode the control line can be pulled low momentarily.
- Pin 1 is input control line 1. (Used in 2 and 4-line mode).
- Pin 6 is input control line 2. (Used in 2 and 4-line mode).
- Pin 2 is input control line 3. (Used in 4-line mode only).
- Pin 7 is input control line 4. (Used in 4-line mode only).
- Pin 5 is the ground.

### CONTROL MODE: 2-line TTL Control

DIP-switch position 1 and 2 must be **OFF**. Control lines **MUST** be kept low to select the video input.

INPUT #	PIN 1 on CONTROL	PIN 6 on CONTROL
1	HIGH (OPEN)	HIGH (OPEN)
2	<b>Pulled LOW to Ground</b>	HIGH (OPEN)
3	HIGH (OPEN)	<b>Pulled LOW to Ground</b>
4	<b>Pulled LOW to Ground</b>	<b>Pulled LOW to Ground</b>

Example: To select INPUT #2 you must contact pin 1 to ground (pin 5). Releasing it would return the INPUT to #1.

### CONTROL MODE: 4-line TTL Control (dry contact closure)

DIP-Switch position 1 must be **OFF** and position 2 must be **ON**. Input control lines can be pulled low (**dry contact closure with pin 5**) momentarily to select the input.

INPUT #	PIN 1	PIN 6	PIN 2	PIN 7
1	<b>PULLED LOW</b>	HIGH (OPEN)	HIGH (OPEN)	HIGH (OPEN)
2	HIGH (OPEN)	<b>PULLED LOW</b>	HIGH (OPEN)	HIGH (OPEN)
3	HIGH (OPEN)	HIGH (OPEN)	<b>PULLED LOW</b>	HIGH (OPEN)
4	HIGH (OPEN)	HIGH (OPEN)	HIGH (OPEN)	<b>PULLED LOW</b>

Example: To select INPUT2 you can momentarily contact pin 6 to ground (pin 5).

### CONTROL MODE: RS232 Control (9600, 8, N, 1)

- You will have to remove the lid on the 421VS and move Function switch position 1 to the **ON** position for RS232 control.
- The protocol is 9600 baud, no parity, 8 bits, 1 stop.
- The switcher receives data on pin 3 and transmits on pin 8 of the DB9 male connector on the back of the switcher. Data ground is pin 5.
- On start-up the switcher will transmit "Technovision 421VS".
- A single byte is sent to the switcher to select the input signal. This byte is echoed back by the switcher upon receipt of the command.

The protocol of the single byte command to the switcher is as follows:

- Bits 7 to 4 are always 0011 (30H)
- Bits 3 and 2 are the switcher address (0 to 3). Default is 00
- Bits 1 and 0 are the input select value (I). Value of 0=input 1, 1=input 2, 2=input 3 and the value of 3=input 4.

Example for a switcher with the address of 00 (**DEFAULT**):

Input #	RS232 character to transmit to the switcher (address 0)
1	30H (30H+address00 + 0), ASCII "0", decimal 48
2	32H (30H+address00 + 1), ASCII "1", decimal 49
3	32H (30H+address00 + 2), ASCII "2", decimal 50
4	33H (30H+address00 + 2), ASCII "3", decimal 51

#### Determining the switcher address:

Address	Value to add
0	0
1	4
2	8
3	12

Example: To select INPUT#3 on the 421VS with the address of 0 (default), you would transmit (30H+0+3) - the character "3" to the 421VS.

Example: To select INPUT#3 on the 421VS with the address of 1, you would transmit (30H+4+3) - the character "7" to the 421VS.

## TECHNICAL SPECIFICATIONS

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### FUNCTION SWITCH SETTINGS ON MAIN BOARD (DS1)

SWITCH POSITION #	Function	ON	OFF (Default)
1	Control Mode	RS232	TTL
2	4 / 2 line select	4-line	2-line TTL
3	Value of bit 1 of switcher address	Switcher Address bit 1 = 1	Address bit 1 = 0
4	Value of bit 0 of switcher address	Switcher Address bit 0 = 1	Address bit 0 = 0

### 421VS POWER REQUIREMENTS:

16 VDC, 200ma, 2.1 mm connector, and center positive.

### CSYNC OUTPUT:

An RCA connector provides the composite sync signal. This signal along with the vertical switch timing is derived from the video signal on INPUT 1.

### CONTROL PORT CONFIGURATION (DB9 male):

Pin#	Description	Pin#	Description
1	Input control line 1	6	Input control line 2
2	Input control line 3	7	Input control line 4
3	RS232 Receive data RX (INPUT)	8	RS232 Transmit data TX (OUTPUT)
4	Secondary RX	9	Secondary TX
5	GROUND		

### AVAILABLE OPTIONS

Part #	Description
421RACK	19" EIA RACK MOUNT KIT