Honeywell

Auxiliary Control Interface Protocol Definition for VideoBlox Rev. III

User Manual

ISSUE	DATE	REVISIONS
1	June 2005	Initial Release

LIST OF ABBREVIATIONS

LED   Light Emitting Diode – i.e. status indication

MVT   Multi-channel Video Titling unit

PCK   Programmable Control Keyboard

PTZ   Pan/Tilt/Zoom equipped camera

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1.1 INTRODUCTION

This document describes the command set which has been implemented into the Betatech Surveillance Mate Master Series Revision III matrix switcher. The purpose of this command set, is to allow third party developers to readily access certain functionality of the matrix switcher.

2.1 PROTOCOL DEFINITION

2.1.1 Data Format

The data format is fixed at 9600 baud, 8 data bits, 1 stop bit, no parity.

All commands consist of a text string which is not case insensitive. This is followed by a variable number of parameters, separated by commas, depending on the command. The command must be terminated with a carriage return (0x0D).

Should the command format be acceptable, a carriage return, line feed and command prompt will be returned. Should the command format not exactly match the expected commands, the command will be ignored and a carriage return, line feed, "???", followed by the response had the command been accepted.

On power up the matrix will transmit a similar string to the following out of the auxiliary port:

```
Betatech SoftCPU Revision
3.17a All rights reserved 1998
SoftCPU>
```

2.1.2 Command Set

Command	Parm 1	Parm 2	Parm 3	Comments
SWITCH	Input	Output		Switch video input to output
PTZRCL	PTZ Address	Position		Recall PTZ pre-positions
PTZSTOR	PTZ Address	Position		Store PTZ pre-positions
PTZAUX	PTZ Address	Aux number	State	Set / Clear PTZ Auxiliary outputs
PTZC	PTZ Address	Function	Parameter	Operate PTZ, see description below
PTZ	Function	Parameter		Operate PTZ, see description below
KBALARM	PCK Address	State		PCK alarm indication
KBLED	PCK Address	LED number	State	PCK LED indications

2.1.2 Command Set, Continued

Command	Parm 1	Parm 2	Parm 3	Comments
KBTEXT	PCK Address	ASCII text		Put text string on PCK display
RUNSEQ	Sequence number	Sequence parameter	Default monitor	Operation of sequences
STOPSEQ	Sequence number			Operation of sequences
DISPLAY	Channel number	Line number	Text string	Put text string on MVT
CLRSCR	Channel number			Clear screen on MVT
CLRLINE	Channel number	Line number		Clear line on MVT
OUTPUT	System output number	State		Operation of system outputs
SETDATE	dd/mm/yy			Set date
SETTIME	hh/mm/ss			Set time
REV				Read matrix software revision
ALARM?	Alarm number			Return status of alarm input
VIDEO?	Video input number			Return status of video input
MATRIX?	Video output number			Return input channel routed to this output
ALARMS?	Read all alarm inputs			Return number & status of alarms
VIDEOS?				Return number & status of video
SIZING?				Return system size information
HELP				Display a list of available commands

2.1.3 PTZ Command Description

The command "PTZ" allows for control of pan / tilt and zoom operation. Whenever a "SWITCH" command is carried out, the system "remembers" which video monitor has been selected, and the input which is routed to this monitor. All subsequent PTZ control operation will use the camera input channel which is currently routed to this monitor output.

The PTZC command uses the camera number instead of the keyboard. When a keyboard "PTZ" command is used, the SoftCPU takes care of automatically re-transmitting information to the selected PTZ. This is NOT done with the "PTZC" command and to keep the PTZ operating continuously, it may be necessary to send repeat messages at a rate higher than once per second.

2.1.3   PTZ Command Description, Continued

Parm 1	Parm 2	Comments
0	Don't care	Stop pan and tilt operation (no change to lens drive)
1	Speed	Set Pan speed (right for speed > 0)
2	Speed	Set Tilt speed (up for speed > 0)
3	Direction	Set zoom (zoom in for direction > 0)
4	Direction	Set focus (focus near for direction > 0)
5	Direction	Set Iris (iris open for direction > 0)
6	Lens	Lens packed as described below (only for PTZC)

The "Speed" parameter must be in the range −127 to + 127. A value of 0 stops the pan or tilt drive.

The "Direction" parameter must be in the range −127 to +127. Currently only fixed speed commands are implemented, so only the sign is relevant. A value of zero stops the lens drive.

For the "packed" lens control function, the functions of the lens control byte are as follows:

Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Iris Close	Iris Open	Zoom Out	Zoom In	Focus Far	Focus Near

2.1.4   Read Status Command Description

The commands "REV", "ALARM?", "VIDEO", and "MATRIX?" all request data from the matrix. In all cases a carriage return, line feed, followed by the requested information, another carriage return, line feed and the command prompt will be returned. If the requested parameter is out of range a "0" will be returned.

2.1.5   Read Alarms / Videos Command Description

The commands "ALARMS?" and "VIDEOS?" return the number of channels configured, followed by cr/lf and a block of data representing the status, a '^' and then the exclusive-or checksum of the video / alarm status.

3.1 CONNECTIONS

The third party interface is implemented on the video matrix SoftCPU "COM4" serial communications port. This port may have either RS232 or RS422 option boards installed.

3.1.1 RS232 Option

Pin Number	Pin Function
1	Internally Connected to pins 4 and 6
2	RXD (data from slave device TXD)
3	TXD (data to slave device RXD)
4	Internally Connected to pins 1 and 6
5	GND (RS232 Communications common)
6	Internally Connected to pins 1 and 4
7	CTS (from slave device RTS)
8	RTS (to slave device CTS)
9	N/C

3.1.2 RS422 Option

Pin Number	Pin Function
1	RS422 Receive data [-]
2	RS422 Receive data [+]
3	RS422 Transmit data [+]
4	RS422 Transmit data [-]
5	RS422 Communications common
6	N/C
7	N/C
8	N/C
9	N/C

4.1 EXAMPLES

Note that in the following examples "\r", denotes a carriage return representing 0x0D.

Example 1: Switch video matrix input 15 to video output 7:

SWITCH 15,7\r

Example 2: Cause the PTZ camera connected to input 15 to move to preset position 1:

PTZRCL 15,1 \r

Example 3: Store the current position of the PTZ camera connected to input 12 as preset position 5:

PTZSTOR 12,5\r

Example 4: Operate the pan function of the PTZ camera routed to output 7 (because of example 1, this is the currently "active" monitor, which currently has PTZ camera 15 routed to it). The PTZ will move at full speed to the left.

PTZ 1,-127\r

Example 5: Display the text string "Hello World" on line 5 on the titler connected to video input 15.

DISPLAY 15,5,Hello World\r

Example 6: Turn off system output 1:

OUTPUT 1,0\r

Example 7: Start sequence 5. The parameter which is passed to the sequence is 100 and the default monitor for the sequence is 1.

RUNSEQ 5,100,1\r

Example 8: Stop the above sequence.

STOPSEQ 5\r

Example 9: Set the system date and time to 3:22 pm on 15 January 1998:

DATE 15/01/98\r
TIME 15:22:00\r

Example 10: Read the software revision in the matrix.

      REV\r

The matrix switcher will return something like:

\n\r
3.17a
\n\r
SoftCPU>

Example 11: Read the current alarm status for alarm input 200.

      ALARM? 200\r

The matrix switcher will return something like:

\n\r
1
\n\r SoftCPU>

The "1" indicates that this alarm contact is closed

Example 12: Read the video input status for input 321.

      VIDEO? 321\r

The matrix switcher will return something like:

\n\r
1
\n\r
SoftCPU>

The "1" indicates that video is present on this input.

Example 13: Read alarm status.

      ALARMS?

The matrix switcher will return something like:

\n\r
32\n\r
01000000 ^ 01 \n\r

The 32 is the number of alarms configured. Note that the length of the reply packet will vary dependant on the configuration. The first two bytes of the alarm status "01", show that only alarm input 1 is active. "02" would be alarm 2 active, "03" both alarm 1 and 2. The block of data is similar to a hexadecimal dump of the alarm status. The " ^ " character indicates the end of data and the fact that the checksum will follow. The last 2 bytes are the exclusive-or checksum of the data portion of the reply.

Example 14: Read system sizing.

SIZING?

The matrix switcher will return something like:

\n\r
128 Cameras\n\r
032 Monitors\n\r
128 Alarms\n\r

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