

1. VSP 198S Communication Protocol

Protocol

Baudrate 115200bps; 1bit start bit; 1bit stop bit; No parity bit

The command data format

The format of the sending data as follows, its definition as shown in table 10

ADDR * SN * CMD * DAT1 * DAT2 * DAT3 * DAT4 * CHKSUM
--

Table 10 Sending data format definition

Mark	Byte	Definition	Remarks
ADDR	1	address	
SN	1	Used for transmission flow control	
CMD	1	Command type	
DAT1	1		
DAT2	1		
DAT3	1		
DAT4	1		
CHKSUM	1	The sum of all protocol data	

The format of the receiving data as follows, its definition as shown in table 11

ADDR * SN * CMD * DAT1 * DAT2 * DAT3 * DAT4 * CHKSUM
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Table 11 receiving data format definition

Mark	Byte	Definition	Remarks
ADDR	1	address	Not used
SN	1	Used for transmission flow control	
CMD	1	Command type	
DAT1	1		
DAT2	1		
DAT3	1		
DAT4	1		
CHKSUM	1	The sum of all protocol data	

$CHKSUM = ADDR + SN + CMD + DAT1 + DAT2 + DAT3 + DAT4$.

SN used for flow control, start to build the connection setting SN=0, the PC software send each command, the SN plus one. The machine return back to the command SN should be consistent

with the received SN. The machine should be cache at least 5 received commands. The PC software should be doing flow control according to the sending command of the SN and receiving command of the SN. The premise of PC software to send the fifth command is received to the first command reply.

Using SN flow control can save the time of sending command to wait for the reception.

Frame format

The frame format for sending and receiving are as follows, the command data using ASCII code, such as 0x02 said 0x30, 0x32

1) Sending

<	T	Command data	>
1	1	16	1

2) Receiving

<	F	Command data	>
1	1	16	1

If the command do not supported or error, it will return the follows data

Mark	Byte	Definition	Remarks
CMD	1	CMD	
DAT1	1	0xFF	
DAT2	1	0xFF	
DAT3	1	0xFF	
DAT4	1	0xFF	

0x72 (write/read source switch)

Set/read the input signal source:

Mark	Byte	Definition	Remarks
CMD	1	0x72	
DAT1	1	0x00(setting)0x01(reading)	
DAT2	1	Current window	DATA2 read-only
DAT3	1	Input source	
DAT4	1	0 (don't care)	

Input source: 0x00_CV1, 0x02_SDI, 0x03_DVI, 0x05_VGA1, 0x06_CV2, 0x0b_YPbPr1, 0x0c_HDMI, 0x0d_VGA2, 0x0e_YPbPr2

For example:

<T0000720000030075> setting the switch to DVI

<T0000720000020074> setting the switch to SDI

Set/read the de-interlacing

Mark	Byte	Definition	Remarks
CMD	1	0x72	
DAT1	1	0x12(setting)0x13(reading)	
DAT2	1	Deinterlace switch 1_on 0_off	
DAT3	1	0 (don't care)	
DAT4	1	0 (don't care)	

For example:

<T0000721201000085> turn on the de-interlacing

<T0000721200000084> turn off the de-interlacing

0x80 (write/read output display settings)

(Read/Write Output Display Settings):

Mark	Byte	Definition	Remarks
CMD	1	0x80	
DAT1	1	0x00(write) 0x01(Read)	Write/read output display Brightness
DAT2	1	Red Brightness Value	
DAT3	1	Green Brightness Value	
DAT4	1	Blue Brightness Value	

For example:

<F000080001e1e1eda> setting the brightness 30

(Read/Write Output Display Settings):

Mark	Byte	Definition	Remarks
CMD	1	0x80	
DAT1	1	0x02(write) 0x03(Read)	Write/read output display Contrast
DAT2	1	Red Contrast Value	
DAT3	1	Green Contrast Value	
DAT4	1	Blue Contrast Value	

For example:

<T000080023434341e> Setting the contrast 52

(Read/Write Output Display Settings):

Mark	Byte	Definition	Remarks
CMD	1	0x80	
DAT1	1	0x04(write) 0x05(read)	Write/read output display Color Temperature
DAT2	1	Red Color Temperature Value	
DAT3	1	Green Color Temperature Value	
DAT4	1	Blue Color Temperature Value	

For example:

<T00008004141e28de> Setting the Red Color Temperature 20, Green Color Temperature 30, Blue Color Temperature 40

(Read/Write Output Display Settings):

Mark	Byte	Definition	Remarks
CMD	1	0x80	
DAT1	1	0x06(write) 0x07(read)	Write/read output display Sharpness
DAT2	1	Sharpness Value	
DAT3	1	don't care	
DAT4	1	don't care	

For example:

<T000080063d0000c3> Setting the Sharpness 61

(Read/Write Output Display Settings):

Mark	Byte	Definition	Remarks
CMD	1	0x80	
DAT1	1	0x08(write) 0x09(read)	Write/read output display Saturation
DAT2	1	Saturation Value	
DAT3	1	don't care	
DAT4	1	don't care	

For example:

<T00008008500000d8> Setting the Saturation 80

0x6C (write/read scale mode)

Mark	Byte	Definition	Remarks
CMD	1	0x6c	
DAT1	1	0x00(write), 0x01(read)	
DAT2	1	Scale type(0-3)	0_HorizontalSize 1_VerticalSize 2_HorizontalPosition 3_VerticalPosition
DAT3	1	value(LSB)	
DAT4	1	value (MSB)	

For example:

<T00006c000008077b> Setting scale width 1800
 <T00006c00017e03ee> Setting scale height 894
 <T00006c00027800e6> Setting scale Horizontal position 120
 <T00006c00038f00fe> Setting scale Vertical position 143

0x79 Test Pattern Output Control(write/read video display mode)

设置/读取显示模式:

Mark	Byte	Definition	Remarks
CMD	1	0x79	
DAT1	1	0x00 (write) 0x01 (read)	
DAT2	1	Display mode	
DAT3	1	0 (don't care)	
DAT4	1	0 (don't care)	

Display mode:

0x00- Set the output as BLACK OUT
 0x01-set the output as LIVE VIDEO OR GRAPHIC
 0x02-Freeze image
 0x03-pure image
 0x04-Test Pattern

For example:

<T0000790000000079> set output as BLACK OUT

<T000079000100007a > set output as LIVE VIDEO OR GRAPHIC
<T000079000200007b > set output as freeze
<T000079000300007c > set output as pure color
<T000079000400007d > set output as test pattern

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