

◆ LVP919 PC RS232 Serial control command V0.0.2

I RS232 Serial communication protocol

Baud rate: 9600

No parity

8 Data bit

1 Stop bit

II RS232 Command Format

Each command consists of 13 character strings. Defined as:

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT1 2
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BYT0: device model number, for LVP919, **BYT0=0x91**;

BYT1: controlled device ID range from 01 to FF total 255 serial numbers, 0x0 means all devices are under control;

BYT2: command address of each control device; refer to (III) Control command part for more Information;

BYT3~BYT11: command parameters;

BYT12: means the model number (0x91) ChkSum or Xor Calculation of front 12 bites data;

Command return:

If device return to send command

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	Cmd	P1	P2	P3	P4	P5	P6	P7	P8	P9	ChkSum

Means command success;

If return with 0xFF parameter command

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	Cmd	XX	FF	FF	FF	FF	FF	FF	FF	FF	ChkSum

Means command fails, BYT3 means incorrect parameter; refer to (V) return error command for more details;

III LVP919 control command

Take one LVP919 whose serial number is 1 for example, namely BYT1=01.

The commands are showed in hexadecimal.

1、Switching signal selection mode (00): one key switching, Pre.+Take switching

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	00	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=00**;

2) **BYT3=0**: one key switching; **BYT3=1**: Pre.+Take switching;

3) **BYT4 to BYT11** no actual meaning, value is 0;

Command example:

“91 01 00 01 00 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the value corresponding

Descriptions 1) **BYT2=03**

2) **BYT3=0~3**, means the switching time 0/0.5/1.0/1.5 seconds;

3) **BYT6 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 03 02 00 00 00 00 00 00 00 00 91” , Please replace the BYT3 with the value corresponding to the switching time.

5、 PIP status (04)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	04	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=04**;

2) **BYT3=00**, Turn off PIP;

BYT3=01, Enter PIP status;

3) **BYT4 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 04 01 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the value corresponding to the pip state.

*After executing this command, please read the status of the input/output board every 1 s (determining busy and idle). For details, see (IV). (1).

6、 PIP signal source switching (05)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	05	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=05**

2) **BYT3=00**, Switch to EXT. channel;

BYT3=01, Switch to DVI2 channel;

BYT3=02, Switch to DVI1 channel;

BYT3=03, Switch to HDMI2 channel;

BYT3=04, Switch to HDMI1 channel;

BYT3=05, Switch to VGA channel;

BYT3=06, Switch to V2 channel;

BYT3=07, Switch to V1 channel;

3) **BYT5 to BYT11**no actual meaning, value is 0;

Command example:

“91 01 05 07 00 00 00 00 00 00 00 00 91” , replace the value of BYT3 with the value of the source.

*This command is valid only in the PIP state;

*Cannot switch to EXT. channel when external expansion module option is "None";

*After executing this command, please read the status of the input/output board every 1 s (determining busy and idle). For details, see (IV). (1).

7、 PIP Mode setup (06)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	06	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=06**

2) **BYT3=0~3**, means PIP mode 0~3;

3) **BYT4 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 06 02 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the PIP mode value.

*This command is valid only for PIP status or PIP parameters;

8、 Set the input board brightness (08)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	08	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=08**

2) **BYT3=0~100**, Image brightness;

3) **BYT4 to BYT11** no actual meaning, value is 0;

Command example:

“91 01 08 27 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the brightness value.

9、 Input board contrast (09)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	09	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=09**

2) **BYT3=0~100**, Image contrast;

3) **BYT4 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 09 37 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the contrast value.

10、 Input board color (0A)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	0A	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=0A**

2) **BYT3=0~100**, Image color;

3) **BYT4** 到 **BYT11** no actual meaning, value is 0;

Command example:

“91 01 0A 07 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the color value.

11、 Output board brightness setup (0B)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	0B	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=0B**;

2) **BYT3=0~32**, Output board brightness;

3) **BYT4** 到 **BYT11** no actual meaning, value is 0;

Command example:

“91 01 0B 17 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the brightness value.

12、 Set the PIP current mode main and sub image size & position (0E)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	0E	XX	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

Descriptions 1) **BYT2=0E**

2) **BYT3=00**, Set the sub image;

BYT3=01, Set the main image;

3) **BYT4**, the high 8-bit of the image horizontal start;

4) **BYT5**, the low 8-bit of the image horizontal start;

5) **BYT6**, Image width high 8-bit;

6) **BYT7**, Image width low 8-bit;

7) **BYT8**, the high 8-bit of the image vertical start;

8) **BYT9**, the low 8-bit of the image vertical start;

9) **BYT10**, Image height high 8-bit ;

10) **BYT11**, Image height low 8-bit;

Command example:

“91 01 0E 00 00 20 03 00 00 40 02 00 91” , Sub-picture size position adjustment;

“91 01 0E 01 00 10 04 00 00 20 03 00 91” , Main screen size position adjustment.

*Please limit the value of the setup:

*The value is even number;

*Horizontal start + image width < (output card input) output resolution maximum width;

*Vertical start+ image height < (output card input) output resolution maximum height.

13、 Display mode setup (10)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
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0	1	2	3	4	5	6	7	8	9	0	1	
91	01	10	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=10**

- 2) **BYT3=0~3**, means display mode 0~3, corresponding to output mosaic parameters;
- 3) **BYT4 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 10 02 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the display mode value.

14、Output port (11)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
90	01	11	XX	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=11**

- 2) **BYT3=0, 1, 2, 3**, means switching to OUT1~OUT4;
- 3) **BYT4 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 11 02 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the port value.

15、Set the current mode, channel input image size and position (12)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	12	00	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

Descriptions 1) **BYT2=12**

- 2) **BYT3=00** Reserved;
- 3) **BYT4**, the high 8-bit of the image horizontal start;
- 4) **BYT5**, the low 8-bit of the image horizontal start;
- 5) **BYT6**, Image width high 8-bit;
- 6) **BYT7**, Image width low 8-bit;
- 7) **BYT8**, the high 8-bit of the image vertical start;
- 8) **BYT9**, the low 8-bit of the image vertical start;
- 9) **BYT10**, Image height high 8-bit ;
- 10) **BYT11**, Image height low 8-bit;

Command example:

“91 01 12 00 00 30 04 00 00 30 03 00 91” , the image size and position adjustment.

*Please limit the value of the set:

* Horizontal start + image width < output card input resolution maximum width;

*Vertical start + image height < output card input resolution maximum height.

16、Set the current mode, channel output image size and position (13)

OUT1/3 Horizontal width: **BYT3- BYT4** (high 8-bit, low 8-bit)
 OUT2/4 Horizontal width: **BYT5- BYT6** (width high 8-bit, low 8-bit)
 OUT1/2 height: **BYT7- BYT8** (width high 8-bit, low 8-bit)
 OUT3/4 height: **BYT9- BYT10** (width high 8-bit, low 8-bit)
 Command example:

“91 01 15 03 00 04 00 02 00 03 00 00 91” , Cell screen size setup.

- *Please limit the value of the setup.
- *Unit screen width <output resolution width;
- *Unit screen height <output resolution height.

19、Fast mosaic 2: Set the total size of the LED large screen (16)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	16	00	XX	XX	XX	XX	00	00	00	00	ChkSum

Descriptions 1) **BYT2=16;**

- 2) **BYT3=00**, Reserved;
- 3) **BYT4**, the high 8-bit of large screen width;
- 4) **BYT5**, the low 8-bit of large screen width;
- 5) **BYT6**, the high 8-bit of large screen width;
- 6) **BYT7**, the low 8-bit of large screen width;
- 7) **BYT8 到 11**, set to 0,reserved;

Command example:

“91 01 16 00 10 00 0F 00 00 00 00 00 91” , Large screen total points setup.

- *Please limit the value of the setup:
- *Large screen width <output resolution width * 4;
- *Large screen height <output resolution height * 4.

20、Fast mosaic 2: Set the unit screen point size position (17)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	17	00	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

Descriptions 1) **BYT2=17**

- 2) **BYT3=00**, Reserved;
- 3) **BYT4**, the high 8-bit of unit screen horizontal start ;
- 4) **BYT5**, the low 8-bit of unit screen horizontal start ;
- 5) **BYT6**, the high 8-bit of unit screen width;
- 6) **BYT7**, the low 8-bit of unit screen width;
- 7) **BYT8**, the high 8-bit of unit screen vertical start;
- 8) **BYT9**, the low 8-bit of unit screen vertical start;

9) **BYT10**, the high 8-bit of unit screen height ;

10) **BYT11**, the low 8-bit of unit screen height;

Command example:

“91 01 17 00 00 40 04 00 00 30 03 00 91” , Cell screen size position adjustment.

*Please limit the value of the setup:

*Unit screen horizontal start + unit screen width < large screen width;

*Unit screen vertical start + unit screen height < large screen height;

*Unit screen width < output resolution width;

*Unit screen height < output resolution height.

21、Mosaic automatic calculation (18)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	18	00	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

Descriptions 1) **BYT2=18**

2) **BYT3=00, Fast mosaic 1;**

BYT3=01, Fast mosaic 2;

3) **BYT4 to BYT11** no actual meaning, value is 0;

Command example:

“91 01 18 01 00 00 00 00 00 00 00 00 91” , Please replace the value of BYT3 with the mosaic mode value.

22、Input board VGA automatic correction (19)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	19	00	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2=19;**

2) **BYT3 到 BYT11** no actual meaning, value is 0;

Command example:

“91 01 19 00 00 00 00 00 00 00 00 00 91” .

*After the VGA automatic correction, please read the I/O board status every 1 second, refer to (IV). (1).

23、system initialization (1A)

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	1A	00	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

Descriptions 1) **BYT2=1A**

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Descriptions 1) **BYT2**=1E;

2) **BYT3**=00, turn off;

BYT3=01, open;

3) **BYT4** 到 **BYT11** no actual meaning, value is 0;

Command example:

“91 01 1E 01 00 00 00 00 00 00 00 00 00 91” , Replace the value of **BYT3** with the value corresponding to the hot plug.

27、ADC Correction (FC)

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FC	00	00	00	00	00	00	00	00	00	ChkSum

Descriptions 1) **BYT2**=FC

2) **BYT3** 到 **BYT11** no actual meaning, value is 0;

Command example:

“91 01 FC 00 00 00 00 00 00 00 00 00 91” .

*Switch status, the current picture is V1/V2/VGA and is valid for one-key switching

* ADC correction is used with caution;

IV Command read

Send a read system status command (FE) to read system parameters;

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	XX	XX	0	0	0	0	0	0	0	ChkSum

Descriptions 1) **BYT3**=XX, Read parameter 1;

2) **BYT4**=XX, Read parameter 2;

3) **BYT5** 到 **BYT11** no actual meaning, value is 0;

4) Reading device **BYT3**、**BYT4** descriptions:

Command example:

“91 01 FE 00 00 00 00 00 00 00 00 91” , Replace the values of **BYT3** and **BYT4** with the values corresponding to each read command.

1、**BYT3**=00, **BYT4**=00, The controlled device returns 13 read data, meaning status 1;

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	00	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

A) **BYT3**=00;

B) **BYT4**: the system is busy or not.

=0: busy;

=1: idle;

C) **BYT5**: means system output resolution;

=0: means output resolution 1024x768_60Hz;

- =1: means output resolution 1440x1440_60Hz;
- =2: means output resolution 1280x1024_60Hz;
- =3: means output resolution 1920x1200_60Hz;
- =5: means output resolution 1920x1080_50Hz;
- =6: means output resolution 1920x1080_60Hz;

D) **BYT6:** current source and fade in fade out time

BIT0~BIT3: current source, 0~7 means EXT., DVI2, DVI1, HDMI2, HDMI1, VGA, V2, V1
 BIT4~BIT7: fade in fade out time, 0~3means 0~1.5second.

E) **BYT7:** TAKE、PIP signal source

BIT0~BIT3: PIP signal source, 0~7means EXT., DVI2, DVI1, HDMI2, HDMI1, VGA, V2, V1

BIT4~BIT7: Pre-take signal source, 0~7 means EXT., DVI2, DVI1, HDMI2, HDMI1, VGA, V2, V1

F) **BYT8:**

BIT0~BIT3: AD1 Audio configuration

BIT4: DVI Hot plug switch

BIT5~BIT7: Extended input module, 0-no, 1-SDI

G) **BYT9:**

BIT0~BIT3: AD3 Audio configuration

BIT4~BIT7: AD2 Audio configuration

H) **BYT10:**

BIT0~BIT3: 0~6, Means the mosaic mode of fast mosaic 1;

BIT4~BIT7: 0~3, Means PIP mode

I) **BYT11:**

BIT0: Language

=0, English;

=1, Chinese;

BIT1: Switch mode

=0, One key switch;

=1, TAKE switch;

BIT2: status

=0: Switching state

=1: PIP state

BIT3~4: Display mode (0~3)

BIT5~7: Current port (0~3)

2、**BYT3=01, BYT4=00**, The controlled device returns 13 read data, means status 2 (reserved);

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	01	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

A) **BYT3=01;**

3、 **BYT3=02, BYT4=00**, The controlled device returns 13 read data, means the IP address;

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	02	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

- A) **BYT3=02**;
- B) **BYT4**: IPAddress1;
- C) **BYT5**: IPAddress2;
- D) **BYT6**: IPAddress3;
- E) **BYT7**: IPAddress4;
- F) **BYT8 to BYT11** no actual meaning;

4、 **BYT3=03, BYT4=00**, The controlled device returns 13 read data, means the subnet mask address;

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	03	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

- A) **BYT3=03**;
- B) **BYT4**: subnet mask 1;
- C) **BYT5**: subnet mask 2;
- D) **BYT6**: subnet mask 3;
- E) **BYT7**: subnet mask 4;
- F) **BYT8 to BYT11** no actual meaning;

5、 **BYT3=04, BYT4=00**, The controlled device returns 13 read data, means the gateway address;

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	04	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

- A) **BYT3=03**;
- B) **BYT4**: gateway 1;
- C) **BYT5**: gateway 2;
- D) **BYT6**: gateway 3;
- E) **BYT7**: gateway 4;
- F) **BYT8 to BYT11** no actual meaning;

6、 **BYT3=05, BYT4=00**, The controlled device returns 13 read data, means the gateway address;

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	05	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

- A) **BYT3=05**;

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- A) **BYT3=09;**
- B) **BYT4:** Horizontal start high-bit;
- C) **BYT5:** Horizontal start low-bit;
- D) **BYT6:** Horizontal width high-bit;
- E) **BYT7:** Horizontal width low-bit;
- F) **BYT8:** Vertical start high-bit;
- G) **BYT9:** Vertical start low-bit;
- H) **BYT10:** Vertical height high-bit;
- I) **BYT11:** Vertical height low-bit;

10、**BYT3=0A, BYT4= XX** (BYT4 bit[1:0]=0~3, Means the port need to be read, BYT4bit[3:2]=0 to 3, means the display mode need to be read. The controlled device returns 13 read data, means the specified image and port output image size and position;

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	FE	0A	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

- A) **BYT3=0A;**
- B) **BYT4:** Horizontal start high-bit;
- C) **BYT5:** Horizontal start low-bit;
- D) **BYT6:** Horizontal width high-bit;
- E) **BYT7:** Horizontal width low-bit;
- F) **BYT8:** Vertical start high-bit;
- G) **BYT9:** Vertical start low-bit;
- H) **BYT10:** Vertical height high-bit;
- I) **BYT11:** Vertical height low-bit;

11、**BYT3=0B, BYT4= XX**(BYT4 bit[1:0]=0~3, reserved, BYT4bit[3:2]=0~3,means the display mode to be read), the controlled device returns 13 read data,means fast mosaic 2 parameters , LED mosaic screen total size.

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	FE	0B	XX	XX	XX	XX	XX	XX	XX	XX	ChkSum

- A) **BYT3=0B;**
- B) **BYT4:** Horizontal width high-bit;
- C) **BYT5:** Horizontal width low-bit;
- D) **BYT6:** Vertical height high-bit;
- E) **BYT7:** Vertical height low-bit;
- F) **BYT8~11:** reserved;

12、**BYT3=0C, BYT4= XX**(BYT4 bit[1:0]=0~3, means the port need to be read, BYT4bit[3:2]=0~3, means the display mode to be read), the controlled device returns 13 read data, means fast mosaic 2 parameters,

unit screen size and position.

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	0C	XX	XX	XX	XX	XX	XX	XX	XX	ChkSu m

- A) **BYT3=0C**;
- B) **BYT4**: Horizontal start high-bit;
- C) **BYT5**: Horizontal start low-bit;
- D) **BYT6**: Horizontal width high-bit;
- E) **BYT7**: Horizontal width low-bit;
- F) **BYT8**: Vertical start high-bit;
- G) **BYT9**: Vertical start low-bit;
- H) **BYT10**: Vertical height high-bit;
- I) **BYT11**: Vertical height low-bit;

13、**BYT3=0D**, **BYT4= XX** (BYT4 bit[1:0]=0~3, Reserved, BYT4bit[3:2]=0~3, Means the display mode that needs to be read. The controlled device returns 13 read data, meaning fast mosaic 1 parameter:

BYT 0	BYT 1	BYT 2	BYT 3	BYT 4	BYT 5	BYT 6	BYT 7	BYT 8	BYT 9	BYT1 0	BYT1 1	BYT12
91	01	FE	0D	XX	XX	XX	XX	XX	XX	XX	XX	ChkSu m

1X2 mode:

Horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT1 height: **BYT6- BYT7** (width high 8-bit, low 8-bit)

OUT2 height: **BYT8- BYT9** (width high 8-bit, low 8-bit)

2X1 mode:

OUT1 horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT2 horizontal width: **BYT6- BYT7** (width high 8-bit, low 8-bit)

height: **BYT8- BYT9** (width high 8-bit, low 8-bit)

1X3 mode:

Horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT1 height: **BYT6- BYT7** (width high 8-bit, low 8-bit)

OUT2 height: **BYT8- BYT9** (width high 8-bit, low 8-bit)

OUT3 height: **BYT10- BYT11** (width high 8-bit, low 8-bit)

3X1mode:

OUT1 horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT2 horizontal width: **BYT6- BYT7** (width high 8-bit, low 8-bit)

OUT3 horizontal width: **BYT8- BYT9** (width high 8-bit, low 8-bit)

height: **BYT10- BYT11** (width high 8-bit, low 8-bit)

1X4 mode:

horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT1 height: **BYT6[7-4], BYT7** (width high 4-bit, low 8-bit)

OUT2 height: **BYT6[3-0], BYT8** (width high 4-bit, low 8-bit)

OUT3 height: **BYT9[7-4], BYT10** (width high 4-bit, low 8-bit)

OUT4 height: **BYT9[3-0], BYT11** (high 4-bit, low 8-bit)

4X1 mode:

OUT1 horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT2 horizontal width: **BYT6[7-4], BYT7** (width high 4-bit, low 8-bit)

OUT3 horizontal width: **BYT6[3-0], BYT8** (width high 4-bit, low 8-bit)

OUT4 horizontal width: **BYT9[7-4], BYT10** (width high 4-bit, low 8-bit)

height: **BYT9[3-0], BYT11** (width high 4-bit, low 8-bit)

2X2 mode:

OUT1/3 horizontal width: **BYT4- BYT5** (high 8-bit, low 8-bit)

OUT2/4 horizontal width: **BYT6- BYT7** (width high 8-bit, low 8-bit)

OUT1/2 height: **BYT8- BYT9** (width high 8-bit, low 8-bit)

OUT3/4 height: **BYT10- BYT11** (width high 8-bit, low 8-bit)

V Return error command

If error occurred after receiving command from system, it will return error command, error command shows as following;

BYT0	BYT1	BYT2	BYT3	BYT4	BYT5	BYT6	BYT7	BYT8	BYT9	BYT10	BYT11	BYT12
91	01	FF	XX	00	0	0	0	0	0	0	0	ChkSum

Descriptions 1) **BYT2=FF**,return to error command;

2) **BYT4=00**, command successful;

=04, command length error;

=05, agreement error;

=06, check bit error;

=07, system busy;

=08, communication confliction;

=09, no input card;

=0A, this input card is a through card;

=0B, input card situation error;

=0C, out of range;

=0D, wrong configuration mode;

3) **BYT5~BYT11=0**;

VI Software design

1. The initial software must configure COM port firstly, network control must setup IP address and port number (7);
2. Test if communication is normal (sending a Read Device Status command to check the return);
3. Then read device basic configuration and current status;
4. Read device basic configure and current status regularly, to judge equipment has finished the operation command sending by software.

