4-CH SDI Multiviewer API Guide for LAN

Part 1. Communication Mode

Interface: LAN

Communication Protocol: UDP Broadcast

Destination Port： 7000

Part 2. Format of Protocol Mode

2.1 Send from PC to Multiviewer

Data Packet	Value (hex)	Byte	Description
Packet Header	0xA5 0x6C	2	The beginning of data packet.
Data Length	0x0000~0x0420	2	The length of the entire data packet from packet header to end (including the packet header and end). The lower byte stays ahead.
Device Type	0x00~0xFF	1	Definition of device type, OXFF means broadcast.
Device ID	0x00~0xFF	1	A distinguishing of the device when there are several devices in a same LAN at same time. OXFF means broadcast.
Interface Type	0x00~0xFF	1	0x00:UART (serial port) 0x01: LAN
Reserve	0x00	9	For reserve. This device is not reserved.
Command	0x00~0xFF	1	Command for each function.
Packet Data	…….	Indefinite	<= 1024
Checksum	0x0000~0xFFFF	2	The algebraic sum of all bytes from packet header to checksum, in 2 bytes, other parts omitted (including the packet header and checksum). The lower byte stays ahead.
Packet End	0xAE	1	The end of the packet.

2.2 Return from Multiviewer to PC

Data Packet	Value (hex)	Byte	Description
Packet Header	0xA5 0x6C	2	The beginning of data package.
Data Length	0x0000~0xFFFF	2	The length of the entire data packet from packet header to end (including the packet header and end). The lower byte stays ahead.
Device Type	0x00~0xFF	1	Definition of device type, 0xff means broadcast
Device ID	0x00~0xFF	1	A distinguishing of the device when there are several devices in a same LAN at same time. 0xff means broadcast.
Interface Type	0x00~0xFF	1	0x00: UART（serial port); 0x01: LAN
Reserve	0x00	9	Reserve. This device is not reserved.
Command	0x00~0xFF	1	Command for each function.
Response Status	0x00 ~ 0xFF	1	0x00： Succeed; 0x01: Error; Other data undefined.
Response Content		Indefinite	Reserve. The length of response content is variable when backward reading command, and it is consistent with the format of "packet data".
Checksum	0x0000~0xFFFF	2	The algebraic sum of all bytes from packet header to checksum, in 2 bytes, other parts omitted. The lower byte stays ahead.
Packet End	0xAE	1	The end of the packet.

Noted: send = CMD + data; Return = CMD + status + data

Part 3. Device Type and Command

3.1 Device type: 0xa3

3.2 Command List

Function	Command (hex)	Description
Scanning	0xff	Broadcast to scan the multiviewer from the LAN.
Reading All the Data	0x90	After device scanned, reading all status data of the device.
Rename the Device	0x91	Change the name of device.
Output Resolution	0x92	Change the device output resolution. Value refers to Part 4.2 Output Resolution List.
Border Enable	0xa4	Turn on/off the border of windows.
Border color	0x93	Setting border color of windows. Value refers to Part 4.6 Border Color List.
Output Layout	0x94	Change the output layouts. Value refers to Part 4.3 Layout List.
UMD Overlay Enable	0x95	Turn on/off the UMD overlay. 1: ON, 0: OFF
UMD Position	0x96	Change the location of the UMD. 0:left 1:center 2:right
UMD Character Color	0x97	Change the color of UMD text. Value refers to Part 4.5 Color List.
UMD Background Color	0x98	UMD background color. Value refers to Part 4.5 Color List.
UMD Text	0x99	Input the content of UMD text. 16 characters max length.
Audio Meter Enable	0x9a	Turn on/off the audio meter. 1: ON, 0: OFF
Audio Meter Position	0x9b	Change the position of audio meter. 0: left, 2: right
Audio Meter Channel	0x9e	Change the channel of audio meter. Value refers to Part 4.4 Audio Meter Channel List.
OSD Enable	0x9f	Turn on/off the OSD. 1: ON, 0: OFF
OSD Text Color	0xa0	Change the OSD text color. Value refers to Part 4.5 Color List.
OSD Background Color	0xa1	Change the OSD background color. Value refers to Part 4.5 Color List.
OSD Position	0xa2	Change the positions of OSD. 0: left, 1: center, 2: right
Custom	0xa3	Save the current settings to custom 1 or custom 2. 1: custom 1, 2: custom 2
Size of Character Overlay	0xa5	Set the size of overlay character. 0: small ,1: middle,2: large
Reset	0xa6	Reset all settings to factory settings, including IP address.
Manual setting IP	0xa7/0x05	12 bytes. including IP address, sub-net mask, gateway. “0xa7” or “0x05” are both works in same result.

3. Command List Enum

```
Enum MV0430_CMD
{
   MV0430_READ_ALL_PAGE_DATA = 0x90,   /*Reading data*/ /*No parameters*/
   MV0430_SEND_STATUS_CUSTOM_NAME,  /*Device name */ /*X Parameter (without line number)*/
   MV0430_SEND_OUTPUT_FORMAT,          /*Output resolution*/     /*1 parameter*/
   MV0430_SEND_BORDER_COLOR,           /* Border color*/ /*1 parameter*/
   MV0430_SEND_OUTPUT_LAYOUT,                /*Output layout*/ /*1 parameter*/
   MV0430_SEND_OVERLAY_UMD_ENABLE,   /* UMD display enable*/ /*2 parameter*/
   MV0430_SEND_OVERLAY_UMD_POS,        /*UMD position*/ /*2 parameter*/
   MV0430_SEND_OVERLAY_TEXT_COLOR,          /*UMD text color*/ /*2 parameter*/
   MV0430_SEND_OVERLAY_BACK_COLOR,    /*UMD background color*/ /*2 parameter*/
   MV0430_SEND_OVERLAY_UMD_MSG,       /*UMD content*/ /*X parameter*/
   MV0430_SEND_AUDIO_ENABLE,           /*Audio meter enable*/ /*2 parameter*/
   MV0430_SEND_AUDIO_POS,                    /*Audio meter position*/ /*2 parameter*/
   MV0430_SEND_AUDIO_TRANSPARENCY,  /*Audio Transparency *//*2 parameter*//* reserve*/
   MV0430_SEND_AUDIO_COMBINATION,  /*Audio Combination*/ /*2 parameter*//*reserve */
   MV0430_SEND_AUDIO_IN_CH,            /*Audio input source*/ /*2 parameter*//*reserve */
   MV0430_SEND_INPUT_ENABLE,           /*OSD enable*/ /*2 parameter*/
   MV0430_SEND_INPUT_TEXT_COLOR,       /*OSD text color*/ /*2 parameter*/
   MV0430_SEND_INPUT_BACK_COLOR,       /*OSD background color*/ /*2 parameter*/
   MV0430_SEND_INPUT_POS,              /*OSD position*/ /*2 parameter*/
   MV0430_SEND_SETTING_SET_CUSOTM,           /*Setting custom*/   /*1 parameter*/
   MV0430_SEND_BORDER_ENABLE,          /*Border enable*/ /*1 parameter*/
   MV0430_SEND_SETTING_SET_UMD_FONT,   /*Setting character size */ /*1 parameter*/
   MV0430_SEND_ALL_PAGE_DATA,          /*reset（long package）*/      /*X  parameter*/
   MV0430_SEND_SETTING_SET_DEV_IP,     /*Setting IP (reserved)）*/ /*12  parameter*/
};
```

Note: All commands with 2 parameter, and data part is “window ID + value”, window ID is 0, 1, 2, 3.

Part 4. Partial Parameter List

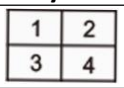
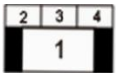
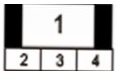
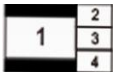
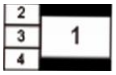
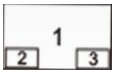
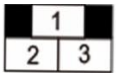
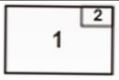
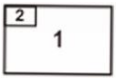
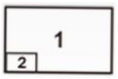
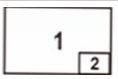
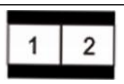
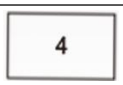
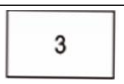
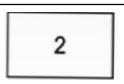
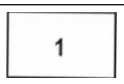
4.1 Response Format

```
typedef struct
{
   unsigned char  mv0430_ver_Fgpa;                    //fpga version  1byte
   unsigned char  mv0430_ver_Mcu;                     //mcu version  1byte
   unsigned char  mv0430_output_format;               //output resolution
   unsigned char  mv0430_border_color;          //(xxx) border color
   unsigned char  mv0430_border_enable;               //border enable
   unsigned char  mv0430_output_layout;               //output layout
   unsigned char  mv0430_umd_font_size;               //UMD character size
   unsigned char  res_total[5];                 //reserve
   char m_mv0430_custom_name[17];               //Device name 16 characters+‘\0’
   UMD_TOTAL_DATA   m_strcut_umd_data[4];             //page umd
   AUDIO_TOTAL_DATA   m_strcut_audio_data[4];         //page audio
   OSD_TOTAL_DATA   m_strcut_osd_data[4];       //page osd
}ALL_MV0430_CHILD_DLG_DATA;
Typedef struct
{
   unsigned char  umd_enable;             //umd enable
   unsigned char  umd_pos;                     // UMD position
   unsigned char  umd_text_color;         //UMD text color
   unsigned char  umd_background_color;        //UMD background color
   unsigned char  res_umd[3];             //UMD reserved
   unsigned char  umd_len;                     //UMD length
   char  umd_str[32];                          //UMD  text
}UMD_TOTAL_DATA;

Typedef struct
{
   unsigned char  audio_enable;                //Audio meter enable
   unsigned char  audio_pos;              //Audio meter position
   unsigned char  audio_in_channel;       //Audio meter channel
   unsigned char  res_audio[3];           //Audio reserved
}AUDIO_TOTAL_DATA;

Typedef struct
{
   unsigned char  osd_enable;          //OSD enable
   unsigned char  osd_pos;                  //OSD position
   unsigned char  osd_text_color;      //OSD text color
   unsigned char  osd_background_color;//OSD background color
   unsigned char  res_osd[2];          //OSD reserved
}OSD_TOTAL_DATA;
```

4.2 Output Resolution List

Output Resolution	Value (hex)
1080p60hz	0x00
1080p50hz	0x01
1080p30hz	0x02
1080p25hz	0x03
1080p24hz	0x04
1080i60hz	0x05
1080i50hz	0x06
720p60hz	0x07
720p50hz	0x08
720p30hz	0x09
720p25hz	0x0a

4.3 Layout List

Layout	Value (hex)
	0x00
	0x01
	0x02
	0x03
	0x04
	0x05
	0x06
	0x07
	0x08
	0x09
	0x0a
	0x0b
	0x0c
	0x0d
	0x0e
	0x0f

4.4 Audio Meter Channel List

Channel	Value (hex)
CH 1&2	0x00
CH 3&4	0x01
CH 5&6	0x02
CH 7&8	0x03
CH 9&10	0x04
CH 11&12	0x05
CH 13&14	0x06
CH 15&16	0x07

4.5 Color List

Color	Value (hex)
Black	0x00
Blue	0x01
Red	0x02
Megenta	0x03
Green	0x04
Cyan	0x05
Yellow	0x06
White	0x07
Gray	0x08
VioletRed	0x09
LightBlue	0x0a
LightGreen	0x0b
LightCyan	0x0c
LightYellow	0x0d
Trans	0x0e
HalfTrans	0x0f

4.6 Border Color List

Border Color	Value (hex)
White	0x00
Red	0x01
Green	0x02
Blue	0x03

4.7. Reset Format

```
typedef  struct
{
unsigned char mv0430_output_format;  //output resolution
unsigned char mv0430_border_color;   //border color
unsigned char mv0430_output_layout;  //output layout
unsigned char mv0430_border_enable;  //border enable
unsigned char mv0430_umd_font_size;  //UMD character size
unsigned char reserved_total[5];    //5 reserved, to be expanded
char custom_name[17];   //custom name (no length in front)
UMD_TOTAL_DATA   m_strcut_umd_data[4];      //page umd
AUDIO_TOTAL_DATA   m_strcut_audio_data[4];         //page audio
OSD_TOTAL_DATA   m_strcut_osd_data[4];              //page osd
}ONE_BTN_SEND_MSG;
```

Part 5. Examples

Description: Following examples are through LAN port. Through serial port should change the interface byte and recalculate the Checksum. All data are hexadecimal. CMD in red color words, data in green words. Every packet data is in couple, including Send and Return.

Interface: LAN
Method: UDP Unicast
Destination Address: IP address of the multiviewer
Destination Port: 7000

5.1. Locating a Multiviewer on the Network

Method: UDP Broadcast

Packet Format: a5 6c 14 00 81 ff 01 00 00 00 00 00 00 00 00 ff a5 03 ae
Destination Address: Broadcast 255.255.255.255
Destination Port: 7000
Return:
a5 6c 22 00 a3 ff 01 00 00 00 00 00 00 00 00 ff 00 4d 56 30 34 33 30 2d 1b 2d 43 05 30 33 5f 06 ae

5.2 Read All the Data of the Device's Current Status

Send:
a5 6c 14 00 a3 ff 01 00 00 00 00 00 00 00 00 90 58 03 ae
Return:
a5 6c 02 01 a3 ff 01 00 00 00 00 00 00 00 00 90 00 0a 1b 00 03 00 01 00 00 00 00 00 00 4d 56 30 34 33 30 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 31 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0101 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 34 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 00 00 00 00 01 00 00 00 00 00 01 00 00 00 00 00 01 00 00 00 00 00 01 00 07 0f 00 00 01 00 07 0f 00 00 01 00 07 0f 00 00 01 00 07 0f 00 00 8c 0a ae

Above Response Description:

a5 6c 02 01 a3 ff 01 00 00 00 00 00 00 00 00	Header format, refer to the previous data structure
90	Read the command
00	0x00 response success
0a 1b 00 03 00 01 00 00 00 00 00 00	First 12 bytes of ALL_MV0430_CHILD_DLG_DATA
4d 56 30 34 33 30 00 00 00 00 00 00 00 00 00 00	Device name
01 01 07 0f 00 00 00	Win 1 UMD parameter
0a	Win 1 UMD length
53 00 44 00 49 00 20 00 31 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 1 UMD text character is "SDI 1"
01 01 07 0f 00 00 00	Win 2 UMD parameter
0a	Win 2 UMD length
53 00 44 00 49 00 20 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 2 UMD text character is "SDI 2"
0101 07 0f 00 00 00	Win 3 UMD parameter
0a	Win 3 UMD length

53 00 44 00 49 00 20 00 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 3 UMD text character is “SDI 3”	
01 01 07 0f 00 00 00	Win 4 UMD parameter	
0a	Win 3 UMD length	
53 00 44 00 49 00 20 00 34 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 4 UMD text character is “SDI 4”	
01 00 00 00 00 00	Win 1	AUDIO parameter, refer to structure AUDIO_TOTAL_DATA
01 00 00 00 00 00	Win 2	
01 00 00 00 00 00	Win 3	
01 00 00 00 00 00	Win 4	
01 00 07 0f 00 00	Win 1	OSD parameter, refer to structure OSD_TOTAL_DATA
01 00 07 0f 00 00	Win 2	
01 00 07 0f 00 00	Win 3	
01 00 07 0f 00 00	Win 4	
8c 0a ae	Checksum and package end	

Note: The Character string here use the structure of ALL_MV0430_CHILD_DLG_DATA from Part 4.1 to extract the data one by one accordingly.

5.3 Rename the Device

E.g.： Rename the device to “MV0430”.

Send:

a5 6c 1b 00 a3 ff 01 00 00 00 00 00 00 00 00 00 91 4d 56 30 34 33 30 00 ca 04 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 91 00 5a 03 ae

5.4 Output Format Setting

E.g.: Setting the output resolution to 1080p50hz.

Send:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 92 01 5c 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 92 00 5b 03 ae

5.5 Border Enable

E.g.: Turn on the border.

Send:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a4 01 6e 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a4 00 6d 03 ae

5.6 Set Border Color

E.g.: Set the border color to red.

Send:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 93 01 5d 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 93 00 5c 03 ae

5.7 Switch Multiview Layout

E.g.: Switch Multiview layout mode as 4-view 3 small windows top and 1 large bottom.

Send:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 94 01 5e 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 94 00 5d 03 ae

5.8 UMD Text Enable

E.g.: Turn on the UMD on channel 1

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 95 00 01 60 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 95 00 5e 03 ae

5.9 Set UMD Position

E.g.: Set the UMD position to the left of channel 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 96 00 00 60 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 96 00 5f 03 ae

5.10 Set UMD Text Color

E.g.: Set UMD color to red on channel 1

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 97 00 02 63 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 97 00 60 03 ae

5.11 Set UMD Background Color

E.g.: Set UMD background color to Megenta in channel 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 98 00 03 65 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 98 00 61 03 ae

5.12 Set UMD text

E.g.: Set UMD text of channel 1 to "SDI 01AAA"

Send:

a5 6c 25 00 a3 ff 01 00 00 00 00 00 00 00 00 00 99 00 53 00 44 00 49 00 20 00 31 00 41 00 41 00 41 00 66 05 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 99 00 62 03 ae

5.13 Audio Meter Enable

E.g.: Turn on audio meter on window 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9a 00 01 65 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9a 00 63 03 ae

5.14 Set Audio Meter Position

E.g.: Change the position of audio meter to right on window 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9b 00 02 67 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9b 00 64 03 ae

5.15 Set Audio Meter Channel

E.g.: Set audio meter channel of window 1 to CH 7&8

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9e 00 03 6b 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9e 00 67 03 ae

5.16 OSD Overlay Enable

E.g.: Turn on OSD on window 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9f 00 01 6a 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 9f 00 68 03 ae

5.17 Set OSD Position

E.g.: Set OSD to the left on window 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a2 00 00 6c 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a2 00 6b 03 ae

5.18 Set OSD Text Color

E.g.: setting OSD text color to red on window 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a0 00 03 6d 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a0 00 69 03 ae

5.19 Set OSD Background Color

E.g.: setting OSD background to VioletRed in Window 1.

Send:

a5 6c 16 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a1 00 09 74 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a1 00 6a 03 ae

5.20 Set Output Character Size

E.g.: Set output character of all overlays to “middle” size.

Send:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a5 01 6f 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a5 00 6e 03 ae

5.21 Save Current Settings to Custom

E.g.: Save the current settings to custom 1.

Send:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a3 01 6d 03 ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a3 00 6c 03 ae

5.22 Reset All Settings to Factory Settings

Send:

a5 6c ff 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a6 00 00 00 00 00 00 00 00 00 00 4d 56 30 34 33 30 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 31 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 07 0f 00 00 00 0a 53 00 44 00 49 00 20 00 34 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 00 00 00 00 01 00 00 00 00 00 01 00 00 00 00 00 01 00 00 00 00 00 01 00 07 0f 00 00 01 00 07 0f 00 00 01 00 07 0f 00 00 01 00 07 0f 00 00 75 0b ae

Description of above commands

a5 6c ff 00 a3 ff 01 00 00 00 00 00 00 00 00 00	Header format, refer to the previous data structure
a6	0xa6, reset command
00 00 00 00 00 00 00 00 00 00	ONE_BTN_SEND_MSG First 10 bytes
4d 56 30 34 33 30 00 00 00 00 00 00 00 00 00 00	Device name
01 01 07 0f 00 00 00	Win 1 UMD parameter
0a	Win 1 UMD length
53 00 44 00 49 00 20 00 31 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 1 UMD text Character is “SDI 1”
01 01 07 0f 00 00 00	Win 2 UMD parameter
0a	Win 2 UMD length
53 00 44 00 49 00 20 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 2 UMD text Character is “SDI 2”
01 01 07 0f 00 00 00	Win 3 UMD parameter
0a	Win 3 UMD length

53 00 44 00 49 00 20 00 33 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 3 UMD text Character is “SDI 3”	
01 01 07 0f 00 00 00	Win 4 UMD parameter	
0a	Win 4 UMD length	
53 00 44 00 49 00 20 00 34 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Win 4 UMD text Character is “SDI 4”	
01 00 00 00 00 00	Win 1	AUDIO parameter, refer to structure AUDIO_TOTAL_DATA
01 00 00 00 00 00	Win 2	
01 00 00 00 00 00	Win 3	
01 00 00 00 00 00	Win 4	
01 00 07 0f 00 00	Win 1	OSD parameter, refer to structure OSD_TOTAL_DATA
01 00 07 0f 00 00	Win 2	
01 00 07 0f 00 00	Win 3	
01 00 07 0f 00 00	Win 4	
75 0b ae	Checksum and package end	

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a6 00 6f 03 ae

Note: Character string pack as ONE_SEND_MSG, please refer to structure of 4.7 part.

5.23 IP Address Settings

E.g.: Set IP address: 192.168.1.234

Sub-net mask: 255.255.255.0

Default gateway: 192.168.1.1

Send:

a5 6c 20 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a7 c0 a8 01 ea ff ff ff 00 c0 a8 01 01 35 0a ae

Return:

a5 6c 15 00 a3 ff 01 00 00 00 00 00 00 00 00 00 a7 00 70 03 ae