MS4K&16K Communication Protocol And Use Examples v1.9

Command Format

Format：Header + Command + Parameter +Tail (Total Length: 23Bytes)

Header：3Bytes，Consisting of fixed values：0xAA，0x AA，0x17

Command ：2Bytes

Parameter ：17Bytes (Param0~Param16)

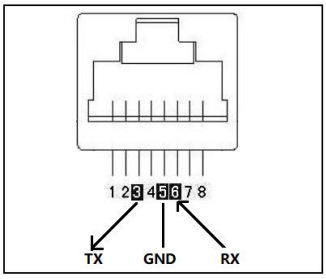
Tail ：1Byte，Consisting of fixed values：0x55

Remark： The command is in hexadecimal format

NET Connect TCP port number: 62203 UDP Port Number: 62202

Serial Port Connect Baud Rate: 115200(default)

Serial Port Connection Diagram



Command Examples

1. Mode And Preset

Load Template

Param0 value range: 0x00~0x09，example as below:

```
AA AA 17 83 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55    //Load Template1
AA AA 17 83 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template2
AA AA 17 83 00 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template3
AA AA 17 83 00 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template4
AA AA 17 83 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template5
AA AA 17 83 00 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template6
AA AA 17 83 00 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template7
AA AA 17 83 00 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template8
AA AA 17 83 00 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template9
AA AA 17 83 00 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Template10
```

Load Preset

Param0 value range: 0x00~0x09，example as below:

```
AA AA 17 83 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55    //Load Preset1
AA AA 17 83 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset2
AA AA 17 83 01 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset3
AA AA 17 83 01 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset4
AA AA 17 83 01 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset5
AA AA 17 83 01 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset6
AA AA 17 83 01 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset7
AA AA 17 83 01 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset8
AA AA 17 83 01 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset9
AA AA 17 83 01 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Load Preset10
```

Save Preset

Param0 value range: 0x00~0x09，example as below:

AA AA 17 83 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset1
AA AA 17 83 02 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset2
AA AA 17 83 02 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset3
AA AA 17 83 02 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset4
AA AA 17 83 02 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset5
AA AA 17 83 02 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset6
AA AA 17 83 02 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset7
AA AA 17 83 02 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset8
AA AA 17 83 02 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset9
AA AA 17 83 02 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Save Preset10

2. Picture Quality Adjust

Brightness

Param1 value range: 0x00~0x64，example as below:

AA AA 17 80 01 00 0A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness10
AA AA 17 80 01 00 14 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness20
AA AA 17 80 01 00 1E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness30
AA AA 17 80 01 00 28 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness40
AA AA 17 80 01 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness50
AA AA 17 80 01 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness60
AA AA 17 80 01 00 46 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness70
AA AA 17 80 01 00 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Brightness80

Contrast

Param1 value range: 0x00~0x64，example as below:

AA AA 17 80 02 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Contrast60

Sharpness

Param1 value range: 0x00~0x18，example as below:

AA AA 17 80 03 00 18 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Sharpness24

Hue

Param1 value range: 0x00~0x64，example as below:

AA AA 17 80 04 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Hue60

Saturation

Param1 value range: 0x00~0x64，example as below:

AA AA 17 80 05 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Saturation60

Picture Quality Reset

AA AA 17 80 FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Reset PQ

3. Other Function

Test Pattern (TP)

Param0 value range: 0x00~0xA，0xFF. example as below:

AA AA 17 8A 00 FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Exit TP
AA AA 17 8A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Show TP0
AA AA 17 8A 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Show TP1

Freeze

Param0 value range: 0x00 Unfreeze，0x01 Freeze. example as below:

AA AA 17 8F 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Freeze
AA AA 17 8F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Unfreeze

Black Screen

Param0 value range: 0x00 Normal，0x01 Black. example as below:

AA AA 17 92 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Black
AA AA 17 92 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Normal

Input Select

Param0 value range：0~3，means Win1~Win4

Param1 value range：

0x10~0x17 HDMI1~HDMI8
0x20~0x27 DVI1~DVI8
0x30~0x37 VGA1~VGA8
0x40~0x47 DP1~DP8

AA AA 17 87 00 00 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to HDMI1
AA AA 17 87 00 00 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to HDMI2
AA AA 17 87 00 00 12 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to HDMI3
AA AA 17 87 00 00 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to DVI1
AA AA 17 87 00 00 21 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to DVI2
AA AA 17 87 00 00 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to DP1
AA AA 17 87 00 00 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win1 to VGA1

AA AA 17 87 00 01 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to HDMI1
AA AA 17 87 00 01 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to HDMI2
AA AA 17 87 00 01 12 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to HDMI3
AA AA 17 87 00 01 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to DVI1
AA AA 17 87 00 01 21 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to DVI2
AA AA 17 87 00 01 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to DP1
AA AA 17 87 00 01 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win2 to VGA1

AA AA 17 87 00 02 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to HDMI1
AA AA 17 87 00 02 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to HDMI2
AA AA 17 87 00 02 12 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to HDMI3
AA AA 17 87 00 02 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to DVI1
AA AA 17 87 00 02 21 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to DVI2
AA AA 17 87 00 02 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to DP1
AA AA 17 87 00 02 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Win3 to VGA1

Audio Setting

Audio Mute

Param0 value range：0 Mute OFF, 1 Mute ON

AA AA 17 86 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Mute ON
AA AA 17 86 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Mute OFF

Volume

Param0 value range：0~30

AA AA 17 86 02 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Volume = 5
AA AA 17 86 02 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //Volume = 16

Output Resolution

Param0 Value：0xFF All Output ， 0~5 Group Output 1~6

Param1 Value：0 Customized Resolution， 1~16 Standard Resolution

Customized Resolution：Width[Param2,Param3], Hight[Param4,Param5], Frame Rate[Param6]

example ：2000x1000x60 -> 07 D0 03 EB 3C

//Set all output to customized resolution 2000x1000 60Hz
AA AA 17 84 00 FF 00 07 D0 03 E8 3C 00 00 00 00 00 00 00 00 00 00 55 //2000x1000 60Hz

//Set group output1 to customized resolution2000x1000 60Hz
AA AA 17 84 00 00 00 07 D0 03 E8 3C 00 00 00 00 00 00 00 00 00 00 55 //2000x1000 60Hz

//Set group output-N to customized resolution2000x1000 60Hz
AA AA 17 84 00 N-1 00 07 D0 03 E8 3C 00 00 00 00 00 00 00 00 00 00 55 //2000x1000 60Hz

//Set group output1 to standard resolution1024x768 60Hz
AA AA 17 84 00 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1024x768 60Hz

//Set group output-N to standard resolution1024x768 60Hz
AA AA 17 84 00 N-1 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55b //1024x768 60Hz

//Set all outputs to standard resolution
AA AA 17 84 00 FF 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1024x768 60Hz
AA AA 17 84 00 FF 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1280x720 60Hz
AA AA 17 84 00 FF 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1280x1024 60Hz
AA AA 17 84 00 FF 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1440x900 60Hz
AA AA 17 84 00 FF 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1600x1200 60Hz
AA AA 17 84 00 FF 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1680x1050 60Hz
AA AA 17 84 00 FF 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1920x1080 60Hz
AA AA 17 84 00 FF 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1920x1200 60Hz
AA AA 17 84 00 FF 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1024x1920 60Hz
AA AA 17 84 00 FF 0A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //1536x1536 60Hz
AA AA 17 84 00 FF 0B 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //2048x640 60Hz
AA AA 17 84 00 FF 0C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //2048x1152 60Hz
AA AA 17 84 00 FF 0D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //2304x1152 60Hz
AA AA 17 84 00 FF 0E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //2560x816 60Hz
AA AA 17 84 00 FF 0F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 //3840x640 60Hz

Window Setting

Param0 Value：0~3 is for Win1~Win4

H start[Param1,Param2], V start[Param3,Param4]
Width[Param5,Param6], Hight[Param7,Param8]

example ：（0， 0， 800，600） -> 00 00 00 00 03 20 02 58

//Set win1 co-ordinate（0， 0， 800，600）
AA AA 17 82 00 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 00 55
//Set win2 co-ordinate（0， 0， 800，600）
AA AA 17 82 00 01 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 00 55

Image Crop

Param0 Value：0~3 is for Win1~Win4

Param1 Value：0 Crop Off ， 1 Crop On

H start[Param2,Param3], V start[Param4,Param5]
Width[Param6,Param7], Hight[Param8,Param9]

example ：（0， 0， 800，600） -> 00 00 00 00 03 20 02 58

//Win1 Image Crop On and set to（0， 0， 800，600）
AA AA 17 81 00 00 01 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 55
//Win1 Image Crop Off (corp params is not effect，it can be set all zero)
AA AA 17 81 00 00 00 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 55
//Win2 Image Crop On and set to（0， 0， 800，600）
AA AA 17 81 00 01 01 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 55
//Win1 Image Crop Off (corp params is not effect，it can be set all zero)
AA AA 17 81 00 01 00 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 55

EDID Setting

Param0 Value：

0x00 all Input port
0x10~0x17 HDMI1~HDMI8
0x20~0x27 DVI1~DVI8
0x30~0x37 VGA1~VGA8
0x40~0x47 DP1~DP8

Width[Param1,Param2], Hight[Param3,Param4], Frame Rate[Param5]

example ：800x600x60 -> 03 20 02 58 3C

//Set all input EDID as 800x600x60
AA AA 17 8B 00 00 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55
//Set HDMI1 input EDID as 800x600x60
AA AA 17 8B 00 10 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55
//Set HDMI2 input EDID as 800x600x60
AA AA 17 8B 00 11 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55
//Set HDMI3 input EDID as 800x600x60
AA AA 17 8B 00 12 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55
//Set DP1 input EDID as 800x600x60
AA AA 17 8B 00 40 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55
//Set DVI1 input EDID as 800x600x60
AA AA 17 8B 00 20 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55
//Set DVI2 input EDID as 800x600x60
AA AA 17 8B 00 21 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 55