MS4K/16K 上位机通信协议
及使用范例 V1.9

● **基本信息**
命令的组成

命令的组成：包头+命令+参数+包尾 （总长度为23)

包头：3 个字节，为固定数值：0xAA，0x AA， 0x17

命令：2 个字节

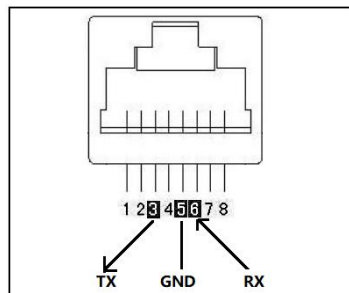参数：17 个字节（参数 0~参数 16）

包尾：1 个字节，为固定数值：0x55

备注： 命令为 16 进制数值格式

网络连接： TCP 端口号：62203　　UDP 端口号：62202

串口连接： 波特率：115200（默认）

串口连接示意图

● **命令范例**

1. 模板与场景

加载模板

参数 0 取值范围：0x00~0x09，范例如下：

AA AA 17 83 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 1

AA AA 17 83 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 2

AA AA 17 83 00 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 3

AA AA 17 83 00 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 4

AA AA 17 83 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 5

AA AA 17 83 00 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 6

AA AA 17 83 00 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 7

AA AA 17 83 00 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 8

AA AA 17 83 00 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 9

AA AA 17 83 00 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//加载模板 10

加载场景

参数 0 取值范围: 0x00~0x09，范例如下:

AA AA 17 83 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 1

AA AA 17 83 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 2

AA AA 17 83 01 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 3

AA AA 17 83 01 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 4

AA AA 17 83 01 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 5

AA AA 17 83 01 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 6

AA AA 17 83 01 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 7

AA AA 17 83 01 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 8

AA AA 17 83 01 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 9

AA AA 17 83 01 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//加载场景 10

保存场景

参数 0 取值范围: 0x00~0x09，范例如下:

AA AA 17 83 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 1

AA AA 17 83 02 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 2

AA AA 17 83 02 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 3

AA AA 17 83 02 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 4

AA AA 17 83 02 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 5

AA AA 17 83 02 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 6

AA AA 17 83 02 06 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 7

AA AA 17 83 02 07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 8

AA AA 17 83 02 08 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 9

AA AA 17 83 02 09 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//保存场景 10

2. 画质调节

亮度

参数 1 取值范围: 0x00~0x34。范例如下:

AA AA 17 80 01 00 0A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 10

AA AA 17 80 01 00 14 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 20

AA AA 17 80 01 00 1E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 30

AA AA 17 80 01 00 28 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 40

AA AA 17 80 01 00 32 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 50 (默认)

AA AA 17 80 01 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 60

AA AA 17 80 01 00 46 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 70

AA AA 17 80 01 00 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//亮度 80

对比度

参数 1 取值范围: 0x00~0x64。范例如下:

AA AA 17 80 02 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//对比度 60

清晰度

参数 1 取值范围: 0x00~0x18。范例如下:

AA AA 17 80 03 00 18 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//清晰度 24

色相

参数 1 取值范围: 0x00~0x64。范例如下:

AA AA 17 80 04 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//色相 60

饱和度

参数 1 取值范围: 0x00~0x64。范例如下:

AA AA 17 80 05 00 3C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//饱和度 60

画质复位

AA AA 17 80 FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//复位画质参数

3. 其他功能

测试图卡

参数 0 取值范围: 0x00~0x0A，0xFF。 范例如下:

AA AA 17 8A 00 FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//退出图卡

AA AA 17 8A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//显示图卡 0

AA AA 17 8A 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//显示图卡 1

画面冻结

参数 0 取值: 0x00 解冻，0x01 冻结 。 范例如下:

AA AA 17 8F 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//冻结

AA AA 17 8F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//解冻

黑屏功能

参数 0 取值: 0x00 正常输出，0x01 黑屏输出。 范例如下:

AA AA 17 92 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//黑屏输出

AA AA 17 92 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　　//正常输出

信号切换

参数 0 取值：0~3， 分别代表窗口 1~4

参数 1 取值：0x10~0x17 HDMI1~HDMI8

　　　　　　0x20~0x27 DVI1~DVI8

　　　　　　0x30~0x37 VGA1~VGA8

　　　　　　0x40~0x47 DP1~DP8

范例如下:

AA AA 17 87 00 00 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 HDMI1
AA AA 17 87 00 00 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 HDMI2
AA AA 17 87 00 00 12 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 HDMI3
AA AA 17 87 00 00 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 DVI1
AA AA 17 87 00 00 21 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 DVI2
AA AA 17 87 00 00 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 DP1
AA AA 17 87 00 00 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 1 切到 VGA1

AA AA 17 87 00 01 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 HDMI1
AA AA 17 87 00 01 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 HDMI2
AA AA 17 87 00 01 12 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 HDMI3
AA AA 17 87 00 01 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 DVI1
AA AA 17 87 00 01 21 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 DVI2
AA AA 17 87 00 01 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 DP1
AA AA 17 87 00 01 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 2 切到 VGA1

AA AA 17 87 00 02 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 HDMI1
AA AA 17 87 00 02 11 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 HDMI2
AA AA 17 87 00 02 12 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 HDMI3
AA AA 17 87 00 02 20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 DVI1
AA AA 17 87 00 02 21 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 DVI2
AA AA 17 87 00 02 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 DP1
AA AA 17 87 00 02 30 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//窗口 3 切到 VGA1

音频设置

静音

参数 0 取值：0 关闭　1 开启

AA AA 17 86 01 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//静音开启
AA AA 17 86 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//静音关闭

音量

参数 0 取值：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 　　//音量 = 5
AA AA 17 86 02 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 　　//音量 = 16

输出分辨率

参数 0 取值：0xFF 所有输出　　0~5　分组输出 1~6

参数 1 取值：0 自定义分辨率　1~16　标准分辨率

自定义分辨率：水平宽度[参数 2,参数 3], 垂直高度[参数 4,参数 5], 帧率[参数 6]

　　　　　　如：分辨率 2000x1000x60 表示为 07 D0 03 EB 3C

//所有输出组更改自定义分辨率为 2000x1000　60Hz

AA AA 17 84 00 FF 00 07 D0 03 E8 3C 00 00 00 00 00 00 00 00 00 00 00 55　//2000x1000　60Hz

//分组输出组 1 更改自定义分辨率为 2000x1000　60Hz

AA AA 17 84 00 00 00 07 D0 03 E8 3C 00 00 00 00 00 00 00 00 00 00 00 55　//2000x1000　60Hz

//分组输出组 N 更改自定义分辨率为 2000x1000　60Hz

AA AA 17 84 00 N-1 00 07 D0 03 E8 3C 00 00 00 00 00 00 00 00 00 00 00 55　//2000x1000　60Hz

//分组输出组 1 更改标准分辨率为 1024x768　60Hz

AA AA 17 84 00 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55　//1024x768　60Hz

//分组输出组 N 更改标准分辨率为 1024x768　60Hz

AA AA 17 84 00 N-1 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55b //1024x768　60Hz

//所有输组更改标准分辨率

AA AA 17 84 00 FF 01 00 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 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 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 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 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 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 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 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 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 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 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 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 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 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 00 55　//3840x640　60Hz

窗口设置

参数 0 取值：0~3 ，对应窗口 1~窗口 4

水平起始[参数 1,参数 2]， 垂直起始[参数 3,参数 4]

水平宽度[参数 5,参数 6]， 垂直高度[参数 7,参数 8]

如： 坐标（0， 0， 800，600）表示为 00 00 00 00 03 20 02 58

//窗口 1 位置大小设置为（0， 0， 800，600）

AA AA 17 82 00 00 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 00 55

//窗口 2 位置大小设置为（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

输入截取

参数 0 取值：0~3 ，对应窗口 1~窗口 4

参数 1 取值：0 截取关闭 ，1 截取打开

水平起始[参数 2,参数 3]，垂直起始[参数 4,参数 5]

水平宽度[参数 6,参数 7]，垂直高度[参数 8,参数 9]

如：截取参数（0， 0， 800，600）表示为 00 00 00 00 03 20 02 58

//窗口 1 输入截取设置为（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 00 55

//窗口 1 输入截取关闭(此时截取参数无效，可以任意填充)

AA AA 17 81 00 00 00 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 00 55

//窗口 2 输入截取设置为（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 00 55

//窗口 2 输入截取关闭(此时截取参数无效，可以任意填充)

AA AA 17 81 00 01 00 00 00 00 00 03 20 02 58 00 00 00 00 00 00 00 00 55

EDID 设置

参数 0 取值：0 所有输入口

0x10~0x17 HDMI1~HDMI8

0x20~0x27 DVI1~DVI8

0x30~0x37 VGA1~VGA8

0x40~0x47 DP1~DP8

水平宽度[参数 1,参数 2]，垂直高度[参数 3,参数 4]，帧率[参数 5]

如：800x600x60 表示为 03 20 02 58 3C

//所有输入设置 EDID 为 800x600x60

AA AA 17 8B 00 00 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55

//HDMI1 设置 EDID 为 800x600x60

AA AA 17 8B 00 10 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55

//HDMI2 设置 EDID 为 800x600x60

AA AA 17 8B 00 11 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55

//HDMI3 设置 EDID 为 800x600x60

AA AA 17 8B 00 12 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55

//DP1 设置 EDID 为 800x600x60

AA AA 17 8B 00 40 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55

//DVI1 设置 EDID 为 800x600x60

AA AA 17 8B 00 20 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55

//DVI2 设置 EDID 为 800x600x60

AA AA 17 8B 00 21 03 20 02 58 3C 00 00 00 00 00 00 00 00 00 00 00 00 55