44H2A-88H2A RS232 ASCII Protocol

Content

1 Serial communication protocol format

Baud Rate: 9600

Data bits: 8

Parity: None

Stop bits: 1

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (N bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET/GET	Space	The target that handles this command.	Space	Command type	[Parameter1] [Parameter2]	↵ This is ASCII carriage return 0x0d

Notes:
Space is the ASCII character 0x20
↵ Represents the ASCII character 0x0d
All Return messages are always terminated by CR/LF, the ASCII characters 0x0d 0x0a
All items shown in square brackets, [], are optional.
Any SET command that contains leading zeroes should not include the leading zeros in any response message.

The value ranges for certain commands are not given, please state and minimum and maximum values for each command that uses a numerical value range.

2 Software Version (Read only)

Get the software version of input/output channels:
Send: GET IN1 VERSION↵ Receive: GET IN1 VERSION 2019/01/01-12:00:00
Send: GET OUT1 VERSION↵ Receive: OUT1 VERSION 2019/01/01-12:00:00
Send: GET SYS VERSION↵ Receive: SYS VERSION 2019/01/01-12:00:00

3 Input Channel Command

Input Signal format (Read only)

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (N bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET	Space	INx x is the input port number	Space	IN-SIGNAL	Send: Null (0 byte)	↵

GET input signal format of input channel:
Send: GET IN1 IN-SIGNAL↵ Receive: IN1 IN-SIGNAL UHD@3840x2160p60

Input Channel Audio Select:

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type	Command parameters (0 or 1/2/3 bytes)	Command tail (1 byte)
SET/GET	Space	INx	Space	AUDIO-SRC AUDIO	L/R EMBEDDED	↵

NOTE：The command type of 4K44H is different from 4K88H.

The command of 4K44H2 is：
Send: GET IN1 AUDIO-SRC↵ Receive: IN1 AUDIO-SRC EMBEDDED↵
Send: SET IN1 AUDIO-SRC L/R↵ Receive: IN1 AUDIO-SRC L/R↵

The command of 4K88H2 is：
Send: GET IN1 AUDIO↵ Receive: IN1 AUDIO EMBEDDED↵
Send: SET IN1 AUDIO L/R↵ Receive: IN1 AUDIO- L/R↵

4 Output Channel Command

Output Type

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (N bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET/SET	Space	OUTx x is the output port number	Space	OUT-TYPE		↵

A. GET output type of output channel:
   Send: GET OUT1 OUT-TYPE↵ Receive: OUT1 OUT-TYPE UHD-HDMI↵
   Send: GET OUT2 OUT-TYPE↵ Receive: OUT2 OUT-TYPE UHD-DVI↵
B. SET output type of output channel:
   Send: SET OUT1 OUT-TYPE UHD-HDMI↵ Receive: OUT1 OUT-TYPE UHD-HDMI↵
   Send: SET OUT2 OUT-TYPE UHD-DVI↵ Receive: OUT01 OUT-TYPE UHD-DVI↵

NOTE:

Support Types:
UHD-HDMI: HDMI without HDCP
UHD-DVI: DVI without HDCP
UHD-HDMI-1.4: HDMI, HDCP1.4
UHD-HDMI-2.2: HDMI, HDCP2.2

Output Signal format

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (N bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET/SET	Space	OUTx	Space	OUT-SIGNAL		↵

A. GET output signal format of output channel:
   Send: GET OUT1 OUT-SIGNAL↵ Receive: OUT1 OUT-SIGNAL UHD-HDMI@4K2Kp60↵
B. SET output signal format of output channel:
   Send: SET OUT1 OUT-SIGNAL 1920x1080p60↵ Receive: OUT1 OUT-SIGNAL UHD-HDMI @1920x1080p60↵

NOTE:

1. Supported output resolution:
   3840x2160p60, 3840x2160p50, 3840x2160p30, 1920x1200p60, 1920x1080p60, 1920x1080p50, 1600x1200p60, 1400x1050p60, 1366x768p60, 1360x768p60, 1280x1024p60, 1280x768p60, 1280x720p50, 1280x720p60, 1024x768p60

Brightness Setting

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
SET/GET	Space	OUTx	Space	BRIGHTNESS		↵

A. GET brightness of output channel:
   Send: GET OUT1 BRIGHTNESS↵ Receive: OUT1 BRIGHTNESS 50
B. SET brightness of output channel:
   Send: SET OUT1 BRIGHTNESS 50↵ Receive: OUT1 BRIGHTNESS 50

Contrast Setting

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
SET/GET	Space	OUTx	Space	CONTRAST		↵

A. GET contrast of output channel:
   Send: GET OUT1 CONTRAST↵ Receive: OUT1 CONTRAST 50
B. SET contrast of input channel:
   Send: SET OUT1 CONTRAST 50↵ Receive: OUT1 CONTRAST 50

Saturation Setting

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or 1/2/3 bytes)	Command tail (1 byte)
SET/GET	Space	OUTx	Space	SATURATION		↵

A. GET saturation of output channel:
   Send: GET OUT1 SATURATION↵ Receive: OUT1 SATURATION 50
B. SET saturation of output channel:
   Send: SET OUT1 SATURATION 50↵ Receive: OUT1 SATURATION 50

Sharpness Setting

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
SET/GET	Space	OUTx	Space	SHARPNESS		↵

A. GET sharpness of output channel:
   Send: GET OUT1 SHARPNESS↵ Receive: OUT1 SHARPNESS 50↵
B. SET sharpness of output channel:
   Send: SET OUT1 SHARPNESS 50↵ Receive: OUT1 SHARPNESS 50↵

Picture Quality Reset

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)

SET	Space	OUTx	Space	PQ-RESET	Null (0 byte)	↵

A. Reset the picture qualityof output channel:
Send: SET OUT1 PQ-RESET↵ Receive: OUT1 PQ-RESET↵

Test Pattern

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET/SET	Space	OUTx	Space	TSP		↵

Send: GET OUT1 TSP↵ Receive: OUT1 TSP ON↵
Send: SET OUT1 TSP OFF↵ Receive: OUT1 TSP OFF↵

Mirror

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET/SET	Space	OUTx	Space	MIRROR		↵

Send: GET OUT1 MIRROR↵ Receive: OUT1 MIRROR ON↵
Send: SET OUT1 MIRROR OFF↵ Receive: OUT1 MIRROR OFF↵

5 Routing command

Set video routing

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET	Space	INx	Space	VIDEO	OUTx or ALL	↵

A. Set video route: Input port-x/xx/xxx switch to output port-a/b/c… , or all output ports
For example, SET video route: Input port 1 switch to output port 1
Send: SET IN1 VIDEO OUT1↵ Receive: IN1 VIDEO OUT1↵
For example, SET video route: Input port 1 switch to all output ports
Send: SET IN1 VIDEO ALL↵ Receive: IN1 VIDEO ALL↵
B. Set multichannel video route (!!!At most, only 8 outputs can be switched at the same time!!!):
For example: Input port 1 switch to output port 1,2,3,4,5,6,7,8
Send: SET IN1 VIDEO OUT1,2,3,4,5,6,7,8↵
Receive: IN1 VIDEO OUT1,2,3,4,5,6,7,8↵
For example: Input port 1 switch to output port 5,6,4,8

Send: SET IN1 VIDEO OUT5,6,4,8↵
Receive: IN1 VIDEO OUT5,6,4,8↵

Get video routing

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET	Space	OUTx	Space	MIRROR		↵

Get the output's input channel:
Send: GET OUT1 VIDEO↵ Receive: OUT1VIDEO IN1↵

Set LR and Toslink Audio out (44H2 only)

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET	Space	INx	Space	AUDIO-ROUTE	OUTx	↵

Set the LR and Toslink Audio out's audio input channel:
Send: SET IN1 AUDIO-ROUTE OUT2↵ Receive: IN1 AUDIO-ROUTE OUT2↵

Get LR and Toslink Audio out (44H2 only)

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET	Space	INx	Space	AUDIO-ROUTE	OUTx	↵

Get the LR and Toslink Audio out's audio input channel:
Send: GET OUT2 AUDIO-ROUTE ↵ Receive: OUT2 AUDIO-ROUTE IN1↵

Recall/Save mode of route

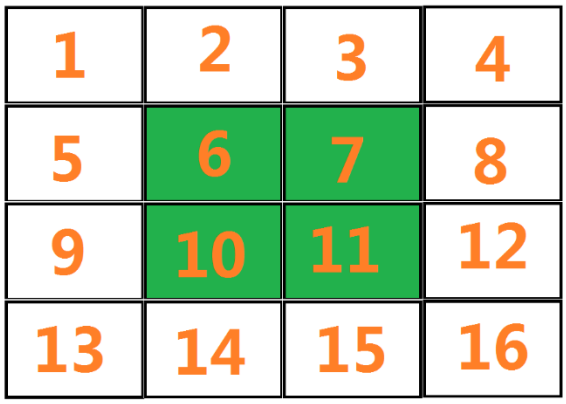
Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Space r (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET/GET	Space	SYS	Space	ROUTE-MODE	xx x is the mode value	↵

Send: GET SYS ROUTE-MODE 1↵ Receive: SYS ROUTE-MODE 1↵
Send: SET SYS ROUTE-MODE 1 ↵ Receive: SYS ROUTE-MODE 1↵

6 TV-WALL

Set/Get TV-WALL:

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET/GET	Space	OUTx	Space	TVWALL	Line, Column, P,Q, Margin-Left, Margin-Right, Margin-Top, Margin-Bottom, Input:	↵



Pitcture-1 for example: The entire TV wall consists of 16 screens, placed in 4 rows and 4 columns. Screens 6/7/10/11 make up a 2x2 splice.

The parameter of the splice which make up by Screens 6/7/10/11:

Line： How many rows of the Digital Information Display, picture-1 for example, 2

Column： How many columns of the Digital Information Display left picture for example, 2

P: The row number of the current output connected: Screen 6: 1, Screen 7: 1, Screen 10: 2, Screen 11: 2

Q: The column number of the current output connected: Screen 6: 1, Screen 7: 2, Screen 10: 1, Screen 11: 2

The border of each screen is 20 pixels for example:

Margin-Left: The width of the left margin (pixels): Screen 6: 0, Screen 7: 20, Screen 10: 0, Screen 11: 20

Margin-Right: The width of the right margin (pixels): Screen 6: 20, Screen 7: 0, Screen 10: 20, Screen 11: 0

Margin-Top: The width of the top margin (pixels): Screen 6: 0, Screen 7: 0, Screen 10: 20, Screen 11: 20

Margin-Bottom: The width of the bottom margin (pixels): Screen 6: 20, Screen 7: 20, Screen 10: 0, Screen 11: 0

Input: Which input route to the current panel

A. SET TV-WALL mode of one output port

Picture-1 Screen 6/7/10/11, and the source input is input 1 For example:

Send: SET OUT6 TVWALL 2 2 1 1 0 20 0 20 1↵ Receive: OUT6 TVWALL 2 2 1 1 0 20 0 20 1

Send: SET OUT7 TVWALL 2 2 1 2 20 0 0 20 1↵ Receive: OUT7 TVWALL 2 2 1 2 20 0 0 20 1

Send: SET OUT10 TVWALL 2 2 2 1 0 20 20 0 1↵ Receive: OUT10 TVWALL 2 2 2 1 0 20 20 0 1

Send: SET OUT11 TVWALL 2 2 2 2 20 0 20 0 1↵ Receive: OUT11 TVWALL 2 2 2 2 20 0 20 0 1

Sending these four commands will create a 2x2 splice

B. How to Exit TV wall mode:

For example Exit TV-WALL combination of output port 6,7,10,11

Send: SET OUT6 TVWALL 1 1 1 1 0 00 0 00 1↵ Receive: OUT6 TVWALL 1 1 1 1 0 00 0 00 1↵

Send: SET OUT7 TVWALL 1 1 1 1 0 00 0 00 1↵ Receive: OUT7 TVWALL 1 1 1 1 0 00 0 00 1↵

Send: SET OUT10 TVWALL 1 1 1 1 0 00 0 00 1↵ Receive: OUT10 TVWALL 1 1 1 1 0 00 0 00 1↵

Send: SET OUT11 TVWALL 1 1 1 1 0 00 0 00 1↵ Receive: OUT11 TVWALL 1 1 1 1 0 00 0 00 1↵

C. GET TV-WALL mode of one output port

Picture-1 Screen 6/7/10/11, and the source input is input 1 For example:

Send: GET OUT6 TVWALL ↵ Receive: OUT6 TVWALL 2 2 1 1 0 20 0 20 1

7 System command

Device IP

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET/GET	Space	SYS	Space	IP	AT+WANN=mode,address, mask,gateway	↵

A. GET the device size:
For example, GET the device IP (MAC: D8B04CB947DF)
Send: GET SYS IP↵Receive: SYS IP D8B04CB947DF DHCP,192.168.0.119,255.255.255.0,192.168.0.1↵
Send: GET SYS IP↵Receive: SYS IP D8B04CB947DF STATIC,192.168.0.222,255.255.255.0,192.168.0.24↵

B. SET the device IP:
For example, Set the device IP to STATIC 192.168.1.1
Send: SET SYS IP STATIC,192.168.0.222,255.255.255.0,192.168.0.1↵
Receive: SYS IP STATIC,192.168.0.222,255.255.255.0,192.168.0.1↵
For example, Set the device IP to HDCP (auto obtain)
Send: SET SYS IP DHCP↵
Receive: SYS IP DHCP↵

System Reset

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET	Space	SYS	Space	RESET	ALL	↵

A. SET (Reset) the device :
For example, Set (Reset) the device
Send: SET SYS RESET ALL↵ Receive: SYS RESET ALL↵

Panel Lock

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0orN bytes)	Command tail (1 byte)
GET/SET	Space	SYS	Space	PANEL-LOCK	ON,OFF	↵

Send: SET SYS PANEL-LOCK ON↵ Receive: SYS PANEL-LOCK ON↵
Send: SET SYS PANEL-LOCK OFF↵ Receive: SYS PANEL-LOCK OFF↵
Send: GET SYS PANEL-LOCK↵ Receive: SYS PANEL-LOCK ON↵

Input Lock

Operation type	Spacer	Target	Spacer	Command type	Command parameters	Command tail

(3 byte)	(1 byte)	(N bytes)	(1 byte)	(10 bytes)	(0 or N bytes)	(1 byte)
GET/SET	Space	SYS	Space	INPUT-LOCK		↵

Send: SET SYS INPUT-LOCK 1-3-5---↵ Receive: SYS INPUT-LOCK 1-3-5---↵/lock the input 1 3 5
Send: SET SYS INPUT-LOCK 12345678↵ Receive: SYS INPUT-LOCK 12345678↵/lock the input 1 2 3 4 5 6 7 8
Send: SET SYS INPUT-LOCK --------↵ Receive: SYS INPUT-LOCK --------↵/all inputs lock off
Send: GET SYS INPUT-LOCK↵ Receive: SYS INPUT-LOCK 1-3-5---↵

7.6 Output Lock

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (0 or N bytes)	Command tail (1 byte)
GET/SET	Space	SYS	Space	OUTPUT-LOCK		↵

Send: SET SYS OUTPUT-LOCK 1-3-5---↵ Receive: SYS OUTPUT-LOCK 1-3-5---↵/lock outputs 1 3 5
Send: SET SYS OUTPUT-LOCK --------↵ Receive: SYS OUTPUT-LOCK --------↵/all outputs lock off
Send: GET SYS OUTPUT-LOCK↵ Receive: SYS OUTPUT-LOCK 1-3-5---↵

7.7 Audio Only

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET/GET	Space	SYS	Space	AUDIO-ONLY	ON,OFF	↵

Send: SET SYS AUDIO-ONLY ON↵ Receive: SYS AUDIO-ONLY ON↵
Send: GET SYS AUDIO-ONLY↵ Receive: SYS AUDIO-ONLY ON↵

7.8 Audio Switch Mode (44H2 only)

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET/GET	Space	SYS	Space	AUDIO-SWMODE	MANUAL,AUTO	↵

MANUAL mode: User can switch the audio route separately
AUTO mode: The audio route is bonded video route
For example:
Send: SET SYS AUDIO-SWMODE MANUAL↵ Receive: SYS AUDIO-SWMODE MANUAL
Send: GET SYS AUDIO-SWMODE↵ Receive: SYS AUDIO-SWMODE MANUAL↵

8 CEC commands

Auto Power on by CEC

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)

SET/GET	Space	SYS	Space	AUTO-POWERON	ON, OFF	↵

This command to Enable/Disable Auto Power function to control sources and displayers by CEC
Send: SET SYS AUTO-POWERON ON↵ Receive: SYS AUTO-POWERON ON↵
Send: GET SYS AUTO-POWERON↵ Receive: SYS AUTO-POWERON ON↵

Power on/Off Displayer by CEC

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET	Space	OUTx	Space	POWER	ON/OFF	↵

Send: SET OUT1 POWER ON↵ Receive: OUT1 POWER ON↵

8.3 Volume +/Volume-/Mute/Unmute with Displayer

Operation type (3 byte)	Spacer (1 byte)	Target (N bytes)	Spacer (1 byte)	Command type (10 bytes)	Command parameters (N bytes)	Command tail (1 byte)
SET	Space	OUTx	Space	AUDIO	VOLUME+, VOLUME-, MUTE	↵

For example:
Send: SET OUT1 AUDIO VOLUME+↵ Receive: OUT1 AUDIO VOLUME+↵
Send: SET OUT1 AUDIO VOLUME-↵ Receive: OUT1 AUDIO VOLUME-↵
Send: SET OUT1 AUDIO MUTE↵ Receive: OUT1 AUDIO MUTE//This command will toggle mute/unmue↵