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HT-RANGER2

4K BYOD Conference Presentation Switcher

API Command List

November 12, 2024



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Connecting to the HT-RANGER2

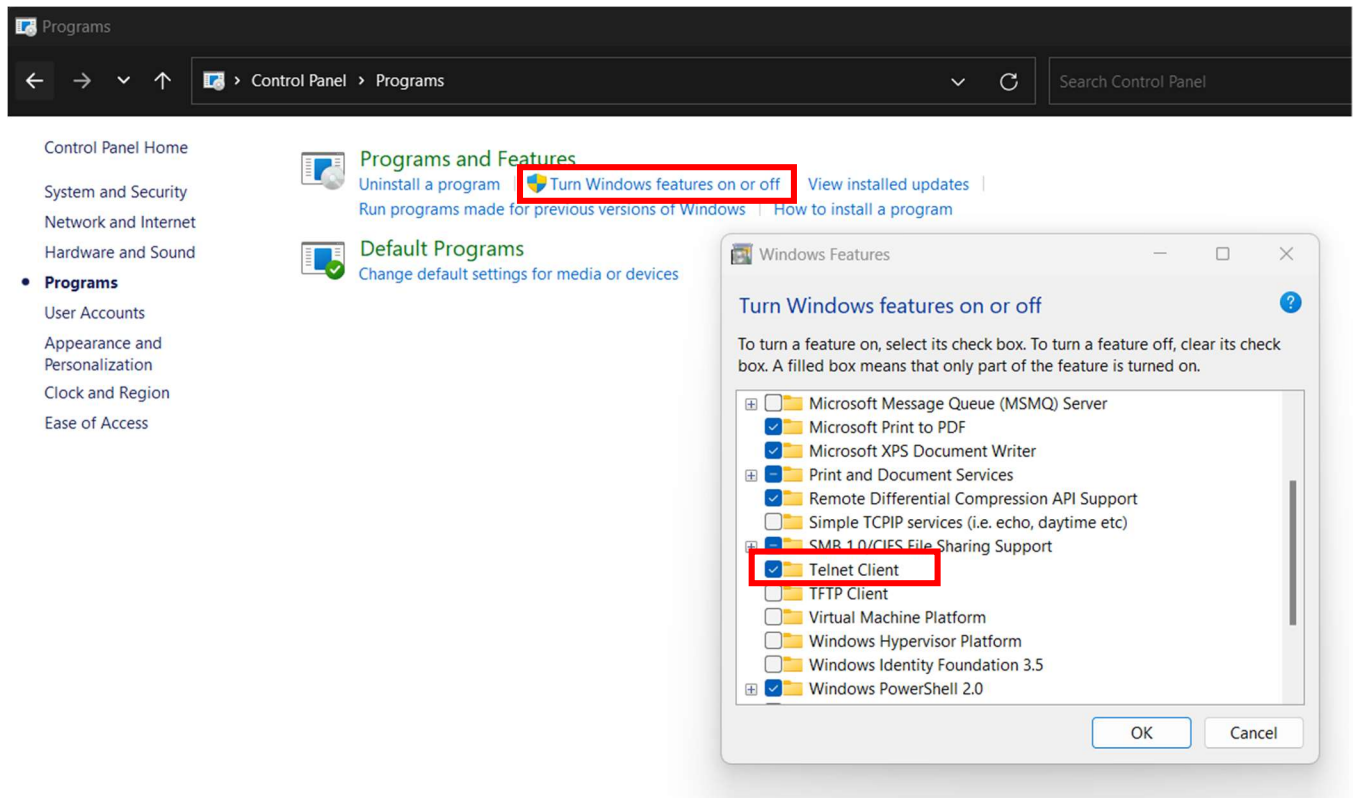
IP ADDRESS

To connect to and communicate with the HT-RANGER2, the controlling device needs to be on the same network. If needed, change the IP address on your PC to be in the same IP range and same subnet as the HT-RANGER2. You can find out the IP address of the HT-RANGER2 by looking in the bottom right corner of the Guide Screen (you will need to connect the HT-RANGER2 to a display).

ENABLING TELNET CLIENT

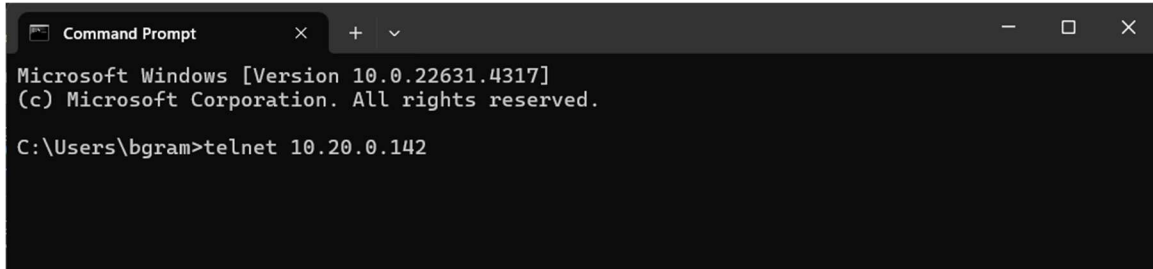
Before logging in to IP controller via command-line interface, make sure that Telnet Client is enabled. By default, Telnet Client is disabled in Windows OS. To turn on Telnet Client, do as follows.

1. Choose **Start > Control Panel > Programs**
2. In the **Programs and Features** area, click **Turn Windows features on or off**.
3. In the **Windows Features** window, select **Telnet Client** check box.



LOGGING IN VIA COMMAND-LINE INTERFACE

1. Choose **Start > Run**
2. In the Run dialog box, enter **cmd** and then click **OK**.
3. Enter **telnet 10.20.0.142** if the device's IP address is 10.20.0.142 and then press **Enter**.



```
Command Prompt
Microsoft Windows [Version 10.0.22631.4317]
(c) Microsoft Corporation. All rights reserved.

C:\Users\bgram>telnet 10.20.0.142
```

4. The device will display a **#** as the command prompt. The device is now ready to execute the API commands.



```
Telnet 10.20.0.142
Welcome to HT-RANGER2.
~ # |
```

Terminology & API Commands Overview

TERMINOLOGY

The terminology used in the API command's description is listed as follows:

- **Device:** the unit being controlled
- **AirPlay Mirroring:** A screen mirroring approach developed by Apple and is supported by many Apple devices such as MacBooks, iPads, and iPhones.
- **Miracast:** A screen mirroring approach developed by Wi-Fi alliance and is supported by all Android devices and Windows PCs.
- **BYOD Source:** AirPlay and Miracast are BYOD solutions.
- **Hardware Source:** The physical hardware interface on the device, such as HDMI or USB Type-C.
- **Software Source:** Certain devices can display video content from a USB camera.

API COMMANDS OVERVIEW

API commands are mainly classified into the following types.

- `htconfig`: manages the configurations of the device
- `htcontrol`: controls the device
- `htlayout`: adjusts the features related to the screen layout
- `Event`: message from the device to report that the device's state changed

Command syntax uses the command type followed by a space, two dashes, and then the command plus the argument (as needed). For example:

`htconfig --source-select hdmi`

Type	(space)	(dash dash)	Command	(space)	Parameter
htconfig		--	source-select		hdmi

This example selects HDMI as the source input.

Note: For the “show” command there is only a single dash: `htconfig -s source-select`

API Commands

HTCONFIG COMMANDS

Command	Parameter(s)	Description
htconfig --help		Displays a list of all available htconfig commands.
htconfig --name	<i>{DeviceName}</i>	Configure the device's name. The new name will appear on the top-right corner of the screen. The default device name is HT-RANGER. Note: The device name must be 1~20 characters in length and can include only letters, numbers and two special characters ('_' and '-').
htconfig --output-resolution	<i>{resolution auto}</i>	Changes the output resolution. Default is set to auto. Timing: 3840x2160P@60 3840x2160P@50 3840x2160P@30 3840x2160P@25 3840x2160P@24 1920x1080P@60 1920x1080P@50 1920x1080P@30 1920x1080P@25 1920x1080P@24 1680x1050P@60 1600x1200P@60 1440x900P@60 1366x768P@60 1280x1024P@60 1280x720P@60 1280x720P@50 1024x768P@60 800x600P@60 720x480P@60 640x480P@60
htconfig --auto-switch	<i>{y n}</i>	Configure the automatic switching feature. If it is enabled, when a video source is connected the output will automatically route the connected video source.
htconfig --hdcp-enable	<i>{y n}</i>	Enables (y) or disables (n) the HDCP feature on the HDMI output. If enabled, HDCP 2.2 will be used on the output when the connected display supports HDCP 2.2, or else HDCP 1.4 will be used on the output. Default is enabled.
htconfig --multiview	<i>{y n}</i>	Configure whether the multiview feature is enabled. When disabled, the device displays the video source in full screen. Default is enabled.
htconfig --video-source	<i>{VideoName guide}</i>	Displays the video source in full screen. If the parameter value is "guide" the device will show the guide screen.
htconfig --audio-source	<i>{VideoName auto}</i>	Switch the output audio source depending on the specified parameter: <ul style="list-style-type: none">• If the parameter is "auto", the audio is selected from the most recently connected video source. If that source is disconnected, it will revert back to the last connected video source.• If the parameter designates a wired source, the device will play the audio of this source. Default is set to "auto".

Command	Parameter(s)	Description
htconfig --usb-host	<i>{USBHost auto}</i>	<p>Configure the output interface of the USB switcher:</p> <ul style="list-style-type: none"> The parameter USBHost is used to designate a certain USB host interface between “usbcin”, “usbhost” or “wireless”. The parameter “auto” will automatically switch to the most recently connected USB host interface. <p>Default is set to “auto”</p>
htconfig --cec-cmd	<i>{on off} CECCode</i>	<p>Configure the stored CEC command used to power on/off the display. The “CECCode” is the message string in hexadecimal format, no space between adjacent bytes.</p> <p>Default on is set to 4004, and off is set to ff36.</p>
htconfig --rs232-role	<i>{api com passthrough}</i>	<p>RS232 port supports different work modes:</p> <ul style="list-style-type: none"> api: Receive the API commands sent by an external controller. com: Serial communication from the device’s RS232 port to a peripheral such as a display. passthrough: Connect the RS232 port to the RS232 channel of the HDBT port so the RS232 data is transmitted between the local RS232 and the remote HDBT receiver. <p>Default setting is “com”.</p>
htconfig --rs232-param	<i>RS232Settings</i>	<p>Modify the RS232 port settings with the format: 9600-8n1. Default is set to “115200-8n1”.</p>
htconfig --rs232-cmd	<i>{on off CmdName} {hex str} CmdStr</i>	<p>Configure the message string sent to the peripherals through RS232 port.</p> <ul style="list-style-type: none"> The first parameter indicates which command to be configured. New commands such as “volumeup” and “volumedown” can be created but cannot contain a space. The second parameter indicates the format of the string being sent. The third parameter is the actual command string. For hexadecimal commands there is no space between the adjacent bytes. <p>No RS232 message is defined by default.</p>
htconfig --auto-standby	<i>{y n}</i>	<p>Configure whether the automatic standby feature is enabled. Default is set to “y”.</p>
htconfig --auto-standby-time {TimeOut}	<i>{0 ~ 3600}</i>	<p>Configures the timeout of the automatic standby (sleep) feature, in seconds. Default is 2 minutes (120 seconds).</p>
htconfig --sinkpower-mode	<i>{cec both}</i>	<p>The device can turn on/off the external display using CEC and RS232 if set to “both”. Default is set to “cec”.</p>
htconfig --sinkpower	<i>{on off}</i>	<p>Manually instruct the device to enter or exit standby mode. “on” means to exit standby mode; “off” means to enter</p>

Command	Parameter(s)	Description
		standby mode.
htconfig --network-isolation	{y n}	<p>The device includes three physical RJ-45 Gigabit Ethernet interfaces as well as two USB-C interfaces. The device can be used in two different modes:</p> <ul style="list-style-type: none"> • Transparent: All Ethernet interfaces are interconnected together, and their actual functions are also equal. To use this mode set isolation to “n”. • Isolated: Only the Gigabit Ethernet interface market “SECURE LAN” can be used to control the device, and the rest used for conventional service features such as BYOD or network accessing. <p>Default is set to “n”.</p>
htconfig --ip-address	{control service} {dhcp static IPAddress NetMask Gateway}	<p>Configure the IP address:</p> <ul style="list-style-type: none"> • In isolated network mode, the device has two sets of IP addresses, one for control and one for conventional service. • The second parameter gives the IP mode. For static mode additional parameters are sued. <p>Default is set to “dhcp”.</p>
htconfig --nic-enable	{y n}	The USB-C port has a GbE network adapter which can be disabled to improve network security. Factory default is set to “y”, enabling GbE over USB-C.
htconfig --https	{y n}	Configure whether the HTTPS feature is enabled. When HTTPS is enabled, the connection request of the HTTP port will be redirected to the HTTPS port to continue the service. Default is set to “y”.
htconfig --input-state	-	Displays the detailed state of the video sources.
htconfig --access-code	{AccessCode auto none}	Sets the access code for a BYOD device wirelessly connected. AccessCode must be 4 digits. If Auto is selected the device will automatically create an access code. If “none” is entered the access code requirement is disabled. Default is set to “none”.
htconfig --softap-enable	{y n}	Enables (y) or disables (n) the Soft AP. Default is “y”. NOTE: If the purpose is to access LAN through the Wi-Fi connection it is best to deploy a standalone Wi-Fi AP to achieve better experience.
htconfig --softap-password	{Password}	Sets the password for the Soft AP. Default is 12345678. Note: the password must be 8~20 characters in length and contain only letters, numbers, and two special characters ('-' and '_').
htconfig --access-code	{AccessCode auto none}	Sets the access code for a BYOD device wirelessly connected. AccessCode must be 4 digits. If Auto is selected the device will automatically create an access code. If

Command	Parameter(s)	Description
		"none" is entered the access code requirement is disabled. Default is set to "none".
htconfig --byod-enable	{y n} [runtimeonly]	Enables (y) or disables (n) BYOD. Default is set to "y".
htconfig --wifi-mode	{2 5} {WiFiChannel Auto}	Sets the band and channel of the WiFi module. 2=2.4G: 1~11, auto 5=5G
htconfig --softap-router	{y n}	Enables (y) or disables (n) the soft AP Router.
htconfig --show	{command}	Displays the settings of the specified item.

HTCONTROL COMMANDS

Command	Argument(s)	Description
htcontrol --help		Displays a list of all available htcontrol commands.
htcontrol --reboot		Reboots the device.
htcontrol --reset-to-default		Restores the device to the factory defaults.
htcontrol --send-cmd	{on off CmdName} {rs232 cec both}	Instructs the device to send CEC and/or RS232 comands.
htcontrol --serial	{-b RS232Settings} {-r (on off)} {-h (on off)} {-t timeout} CmdStr	Send some data through the RS232 port and receive the response data: <ul style="list-style-type: none"> • -b: used to set the RS232 port settings which contains the baud rate, data bits, parity, and stop bits. By default "9600-8n1" is used. • -r: used to set whether to add a carriage return at the end of the data. Default is "off". • -h: used to indicate whether the CmdStr is in hexadecimal format. Default is set to "off". • -t: used to designate the timeout in which this command will return. Default is set to 0, meaning it will immediately return. • CmdStr: the command string to be sent.
htcontrol --sinkpower	{on off}	Manually instruct the device to enter or exit standby mode. "on" means to exit standby mode; "off" means to enter standby mode.
htcontrol --show-osd		Displays the OSD for ten seconds.
htcontrol --set-layout-video [LayoutNo]	{VideoName1 [VideoName2]}	Sets the designated screen layout and the designated video source.

HTLAYOUT COMMANDS

Command	Argument(s)	Description
htlayout --help		Displays a list of all available htlayout commands.
htlayout --start-video	<i>{VideoName}</i>	<p>Starts the designated video and returns a list of the video sources being displayed.</p> <ul style="list-style-type: none"> • If the video source is displayed already, the device does nothing. • If there is no free window, the device switches to a screen layout which has more windows • If there is no free window nor screen layout having more windows, the device stops playing the “oldest” video source. <p>Note: If the device is disabled to change the screen layout automatically, this command will not work. Refer to the htlayout --auto command.</p>
htlayout --stop-video	<i>{VideoName}</i>	Stops the designated video.
htlayout --show	<i>{LayoutNo}</i>	Displays the detail of a screen layout.
htlayout --set	<i>{LayoutID / LayoutName}</i>	Switches the layout of the child windows used by multiview mode. (Does not work if multiview feature is disabled.)
htlayout --get	<i>{LayoutID / LayoutName}</i>	<p>This command has 2 uses:</p> <ul style="list-style-type: none"> • If the request does not carry a parameter, the device returns the ID and name of the layout being used. • If the request specifies the ID or name of a layout, the device returns the position and size of all child windows of the specified layout.
htlayout --set-sequence	<i>{Layout1No}</i> <i>{Layout2No}</i>	Designates the screen layout sequence (either full or dual view)
htlayout --get-sequence		Displays the numbers of all layouts in the sequence.
htlayout --list		Displays all screen layouts in the device.

EVENTS

Events are not API commands that can be sent by the controller. These are messages sent by the device to announce that a certain state of the device has change.

Command	Description
[Event] VideoSource VideoName	This message means that the state of one video source has changed.
[Event] WorkMode	This message means that the device's work mode has changed.
[Event] Layout	This message means that the screen layout has changed and includes the layout ID and its name.
[Event] WorkMode {Normal Sleep}	When the device enters or exits standby mode it actively sends the response message.



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