

FHD264

Telnet Control and Serial-over-IP (SoIP)

To change the settings of the FHD264 encoders and decoders (e.g. multicast Group ID, IP parameters, user defined names, encoding bitrate, etc.) users can utilize one of the following methods:

- Use the front panel buttons and character LCD on the device
- Log in to HTTP port in each unit and use the WebGUI
- Use the free Windows™ DVM Manager Software (can access all devices on the network)
- Use the Optional CNT-IP-264 Video-over-IP controller

However, virtually all settings of the FHD264 can also be accessed via Telnet commands. The following section provides further detail on control via Telnet.

There is an RS232 port on each encoder and decoder. These ports get extended within the multicast group ID. But users can take over these RS232 ports and use them to issue commands to external devices. For example if the RS232 port on a FHD264-R is connected to a video projector, users can use the RS232 port to the projector on and off.

As shown below there is a Telnet command for sending RS232 commands, but the FHD264 also features Serial over IP that lets a user take over the port via a port in the unit. SoIP is described further below.

Telnet Control

FHD264 offers an extensive telnet control instruction set to provide full control of the system. The default telnet port is **9999**. When connected, the following prompt will be displayed on the terminal:

```
-----  
Hall Research Inc.  
FHD RX Telnet Server  
-----  
input>
```

Telnet terminal message

Note:

- Commands are case sensitive - use lowercase characters as shown.
- Invalid commands result in “Unknown Input Command”.
- The “list <CR>” command displays the list of available commands.

Commands are Terminated by <CR><LF> (or Hex 0D 0A)	Response	Function
set_group_id n where n=0-1023	OK – Success Error – Fail	Set Group ID
get_group_id	n where ‘n” returns the group ID	Query the current group ID status
set_dhcp	OK – Success Error – Fail	Set to DHCP mode
get_dhcp	On – DHCP Off – No DHCP	Query the DHCP status
Set_uart_baudrate n Where n = 2400, 4800, 9600, 19200, 28800, 28400, 57600, 115200	OK – Success Error – Fail	Set the baud rate for the RS-232 on the unit
get_uart_baudrate	n where n = baud rate	Query the current baud rate setting in the unit
set_static_ip ip [ip(n.n.n.n)] netmask [ip(n.n.n.n)] gateway [ip(n.n.n.n)] Where: ip [ip(n.n.n.n)] =IP xxx. xxx. xxx. xxx netmask[ip(n.n.n.n)]=netmask 255.255.xxx.xxx gateway [ip(n.n.n.n)] = gateway xxx. xxx. xxx. xxx	OK – Success Error – Fail	Set the static IP configuration for the unit
get_static_ip	IP: 192.168.1.xx Netmask: 255.255.0.0 Gateway: 192.168.1.1	Returns the current static IP configuration
get_mac_address	XX: XX:XX:XX:XX:XX	Query the MAC address of the unit
get_lan_status	Link_Up/Link_Down	Query LAN Status whether device is UP

Commands are Terminated by <CR><LF> (or Hex 0D 0A)	Response	Function
		and connected to the switch
get_ip_config	IP: XXX.XXX.XXX.XXX Netmask: XXX.XXX.XXX.XXX Gateway: XXX.XXX.XXX.XXX	Shows IP Configuration settings
get_hdcp_status	On/Off Where On - Input Video with HDCP Off- Input Video without HDCP	Query the HDCP status of the video input
get_video_lock	Lock Unlock Where Lock – Stable Input Signal Unlock - No input video or unstable	Query the video stability status
set_session_key [0xhhhh(1~32)]	OK-Success Error-Fail Where [0xhhhhh(1~32)]=0x000000~0xffff	Set session key for encryption
set_screen off on (Receiver ONLY) Where off=blank on=unblank	OK – Success Error – Fail	Set video blank/unblank the screen
get_screen (Receiver ONLY)	on off	Query the device output status
set_page_login [string(off on)] where off = Disable login for the web page session (default) on= Enable login for the web page.	OK – Success Error – Fail	Set the login page for the WebGUI
get_page_login	on off	Query the webpage” login enable” status

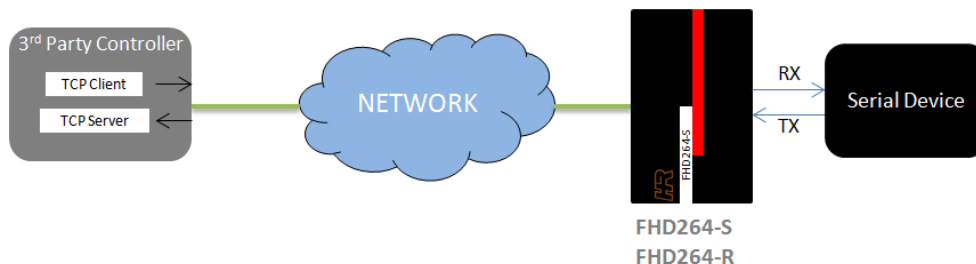
Commands are Terminated by <CR><LF> (or Hex 0D 0A)	Response	Function
set_video_bitrate (Sender ONLY) [string(fhd hd sd)][n(2000~18000)] Where: string(fhd hd sd)[n(100~25000)] can be fhd, hd, sd and 12000 For example: set_video_bitrate fhd 12000	OK – Success Error – Fail	Set the max bit rate for the TX to sender over the network. Limits apply see Section 10
get_video_bitrate [string(fhd hd sd)] (Sender ONLY)	xxxx	Query the bit rate for the TX
set_downscale_mode string(fhd hd sd)] to string(fhd hd sd)]	OK – Success Error – Fail	Scale down the input video to lower resolution
get_downscale_mode string(fhd hd sd)] (Sender ONLY)	string(fhd hd sd)]	Get the downscale mode status
set_video_out_mode string(both_on loopthrough network both_off)] (Sender ONLY)	OK – Success Error – Fail	Enable the HDMI output and network output
get_video_out_mode (Sender ONLY)	string(both_on loopthrough network both_off)]	Query the Loop and network output status
set_osd [string(auto on off)] Auto= OSD will turn off when there is an input signal detected. On or Off – OSD Stays on or off forever	OK – Success Error – Fail	Set OSD mode of the system
get_osd	Auto On Off	Query the OSD mode status
set_device_name [string (1~30)] Where string can be 30 characters long	OK – Success Error – Fail	Set the device name
get_device_name	[string (1~30)]	Query the device name

Commands are Terminated by <CR><LF> (or Hex 0D 0A)	Response	Function
get_fw_version	Tx/Rx Firmware : x.x.x.x.xxxxxxx Returns the firwmare version	Query the firmware version
factory_reset	Processing factory reset! System will reboot after few sec!	Factory reset the device
Reboot	System will reboot after few sec!	To reboot the unit
get_company_id	xxx	Query the company ID
set_streaming_mode [string(unicast multicast)]	OK – Success Error – Fail	Set the streaming mode of the device
get_streaming_mode [string(unicast multicast)]	[string(unicast multicast)] where unicast means one-one configuration and multicast means one to many and many-to-many configuration	Query streaming mode status
master_get	xxx.xxx.xxx.xxx (IP Address) [Blank]	Return the IP address of registered 3rd party controller for SoIP
master_set [string(xxx.xxx.xxx.xxx)]	Master Set	Registers the IP address as 3rd party controller. All the responses from the serial device connected to RS-232 port will be sent to the server on port #5050 at this IP address
rs_out [string(up to 100 char)]	SoIP Sent	Outputs the string the string via RS-232
get_failsafe (Receiver ONLY)	on off	Returns the fail safe status

Commands are Terminated by <CR><LF> (or Hex 0D 0A)	Response	Function
set_failsafe [string(on off)] (Receiver ONLY)	Ok -- Successes Error -- Fail	Set the fail safe status
set_fs_group n where n = 0 to 63 (Receiver ONLY)	Ok -- Successes Error -- Fail	Set the fail safe group number
get_fs_group (Receiver ONLY)	Number in range 0 to 63	Returns the fail safe group number
Exit		Exits the telnet session

Serial Over IP (SoIP)

Serial devices connected to the RS-232 port on FHD264 units can be controlled over the network. SoIP commands can be issued via Telnet, which is simplex (See the telnet command "rs_out" in telnet control). For bi-directional communication, each FHD264 has a dedicated TCP server and client. The **CNT-IP-264** (standalone controller) can manage SoIP with multiple Senders and Receivers.



To perform a full Duplex SoIP with FHD, the 3rd party controller requires the following Client and server architecture.

- UDP Client:** To send commands to FHD264 UDP port #9002 for registration. The controller should register its IP address with the FHD264 to receive the response on the TCP server. The FHD sends the serial device response to only one registered controller. We recommend repeating this process at regular intervals (one Minute). In case of a reboot or power failure, the FHD264 will not remember the controller's IP address. Registration can also be done using telnet command "**master_set**". The registration message format (31 bytes) using UDP is as follows:

```

Controller IP Address
↓
HRTV_CMD \xx\xx\xx\xx*t\00\ce\00\0b\t\00\00\00\00\00\00\00\00\00\00\00
48 52 54 56 5f 43 4d 44 \xx xx xx xx 23 2a 74 00 ce 00 0b 09 00 00 00 00 00 00 00 00 00

```

- TCP Client:** To send commands to FHD264 TCP port #7000. Maximum command length is 100 bytes
- TCP Server:** Listen on port #5050 to receive the response from serial device. Maximum command length is 100 bytes
- Ping Protocol:** FHD264 uses ping to verify the controller's presence