



4:2 HDBaseT Switcher

SW-0401-HDBT

Application Programming Interface

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Supported Firmware:	v1.0.0 or higher



Contents

- 1. Overview..... 3
 - 1.1 Before You Begin 3
- 2. Wiring and Communication Configuration..... 3
 - 2.1 RS-232 Connections..... 3
 - 2.2 Serial Port Settings..... 3
- 3. Command Elements..... 3
- 4. Switcher Control Configuration 4
 - 4.1 Enable/Disable API Control..... 4
- 5. Switcher Control 4
 - 5.1 Input Selection and Switching Configuration 4
 - 5.2 Audio Output Volume Control..... 5
- 6. Display and Switcher Power Control 5
 - 6.1 CEC Configuration 5
 - 6.2 Power and Display Control 6
 - 6.3 EDID Configuration..... 7
 - 6.4 HDCP Configuration..... 8
 - 6.5 Video Configuration 8
- 7. Diagnostic Troubleshooting..... 9
- 8. Contacting Technical Support..... 10
- 9. Revision History 10
- Publication Disclaimer..... 12

1. Overview

The following document contains the Application Program Interface (API) commands to control the SW-0401-HDBT switcher via serial and IP commands. Read this document in its entirety before starting any communication with the product.

1.1 Before You Begin

Verify that the following items are on hand and that all documentation is reviewed before continuing.

SW-0401-HDBT Switcher	☐
Control System and Control System Documentation	☐
PC or Mac for Configuring Product and Telnet Communications.....	☐
Network Connection with Network Passwords.....	☐
Visit the Product Page on WyreStorm.com to download firmware and additional product information	☐

2. Wiring and Communication Configuration

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in its entirety before running or terminating the wires to ensure proper operation and to avoid damaging equipment.

2.1 RS-232 Connections

The following wiring diagrams show the pinouts for the switcher. While not shown, connect the TX (transmit) to RX (receive) pins at the control system or PC side of the cable. Most control systems and computers are configured for Digital Terminal Equipment (DTE) where pin 2 is RX and pin 3 is TX. This can vary from device to device, refer to the documentation for the connected device for pin functionality to ensure that the connect connections can be made.



2.2 Serial Port Settings

Baud rate:	57600
Data Bits:	8bits
Parity:	None
Stop Bits:	1bit
Flow Control:	None

Note: This switcher is not controllable via Ethernet.

3. Command Elements

- Command Type: ASCII
- Key Words are Case Sensitive
- *prm* = optional parameters
- in = Video Input (HDMI/HDBaseT)
- out = Video Output (HDMI/HDBaseT)
- aout = Audio Output
- Command termination requires <CR><LF>

Example: SET AUTOCEC_D **out** *prm* <CR><LF>

4. Switcher Control Configuration

The ability to send and receive API commands on the switcher can be enabled or disabled. Before attempting to send any commands ensure that the ability to send API is enabled.

4.1 Enable/Disable API Control

Action	Command	Parameters
Enable/Disable API Control	SET API_ONOFF prm<CR><LF> Return: API Mode: prm<CR><LF> Example: Enable API Control SET API_ONOFF on<CR><LF> Returns: API Mode: on<CR><LF>	prm = {on, off}
Query API Control Status	GET API_STATUS<CR><LF> Return: API Mode: prm<CR><LF> Example: Query API Control Status GET API_STATUS<CR><LF> Returns: API Mode: on<CR><LF>	prm = {on, off}

5. Switcher Control

5.1 Input Selection and Switching Configuration

Action	Command	Parameters
Select Input (Direct)	SET SW prm<CR><LF> Returns: SW prm<CR><LF> Example: Select HDMI 1 input. SET SW hdmi1<CR><LF> Returns: SW hdmi1<CR><LF>	prm={vga, dp, hdmi1, hdmi2}
Select Next Input	SET SW_NEXT<CR><LF> Returns: prm<CR><LF> Example: Select Next Input from VGA. SET SW_NEXT <CR><LF> Returns: DP<CR><LF>	prm={vga, dp, hdmi1, hdmi2}
Turn Auto Switch Mode On/Off	SET AUTOSW_ONOFF prm<CR><LF> Returns: prm<CR><LF> Example: Set auto switch mode to On. SET AUTOSW_ONOFF on<CR><LF> Returns: on<CR><LF>	prm={on, off}
Configure Auto Switch Mode	SET AUTOSW_MODE<CR><LF> Returns: prm<CR><LF> Example: Configure auto switching to the last input connected. SET AUTOSW_MODE last_connected<CR><LF>	Prm={priority, last_connected} // Priority follows predefined connection order: VGA>DP>HDMI1>HDMI2 Last Connected selects the last connected device based on default priority order.
Query Source Selection and Switch Mode Status	GET SW_STATUS<CR><LF> Returns: Source Select: prm1<CR><LF> Switch Mode: prm2<CR><LF> Example: Query source selection and switch mode status. GET SW_STATUS<CR><LF> Returns: Source Select: hdmi1<CR><LF> Switch Mode: Automatic(Last Connected) mode<CR><LF>	Prm1={vga, dp, hdmi1, hdmi2} Prm2={Manual Mode, Automatic(Last Connected) Mode, Automatic(priority) Mode} // Manual Mode indicates that auto switching is turned off.

5.2 Audio Output Volume Control

Action	Command	Parameters
Adjust Volume	SET VOLGAIN_DATA aout prm<CR><LF> Returns: VOLGAIN_DATA aout prm<CR><LF> Example: Set volume of audio out to 30 SET VOLGAIN_DATA aout 30<CR><LF> Returns: VOLGAIN_DATA aout 30<CR><LF>	aout = {hdmiout, audioout} prm = {0~100}
Mute Audio	SET AUDIO_MUTE aout prm<CR><LF> Returns: AUDIO_MUTE aout prm<CR><LF> Example: AUDIO_MUTE audio out. SET AUDIO_MUTE aout on<CR><LF> Returns: AUDIO_MUTE aout on<CR><LF>	aout = {hdmiout, audioout} prm = {on, off} // on means mute; off means unmuted.

6. Display and Switcher Power Control

6.1 CEC Configuration

Action	API Command Reference	Parameters
Enable/Disable CEC Functionality	SET CECCMD_ONOFF prm<CR><LF> Returns: CEC: prm<CR><LF> Example: Enable CEC SET CECCMD_ONOFF on<CR><LF> Returns: CEC: on<CR><LF>	prm = {on, off}
Enable/Disable CEC Auto Mode	SET CECAUTO_ONOFF prm<CR><LF> Returns: Auto CEC: prm<CR><LF> Example: Enable CEC Auto Mode SET CECAUTO_ONOFF on<CR><LF> Returns: Auto CEC: on<CR><LF>	prm = {on, off}
Set CEC Power Delay Time	SET CECAUTO_DELAY prm<CR><LF> Returns: Auto CEC Delay Value: prm Min<CR><LF> Example: Set delay time of 1 minute SET CECAUTO_DELAY 1<CR><LF> Returns: Auto CEC Delay Value: 1 Min	prm = {0~30} // prm numbers are in minutes with default wait time of 2 minutes, entering a 0 will power off the display immediately if there is no active signal.

6.2 Power and Display Control

Action	API Command Reference	Parameters
Switcher Standby On/Off	SET STANDBY_ONOFF prm<CR><LF> Returns: STANDBY_ONOFF prm <CR><LF> Example: Place switcher into standby. SET STANDBY_ONOFF on<CR><LF> Returns: STANDBY_ONOFF on <CR><LF>	prm = {on, off}
Power Display On/off	SET CEC_PWR_ONOFF prm<CR><LF> Returns: Send CEC cmd: HDMI TV prm<CR><LF> Send CEC cmd: HDBT TV prm<CR><LF> Example: Power on displays SET CEC_PWR_ONOFF on<CR><LF> Returns: Send CEC cmd: HDMI TV ON<CR><LF> Send CEC cmd: HDBT TV ON<CR><LF>	prm = {on, off}
Query CEC Control Status	GET CEC_STATUS <CR><LF> Returns: CEC: prm1<CR><LF> Auto CEC: prm1<CR><LF> Auto CEC Delay Value: prm2 Min<CR><LF> Example: Query CEC control status CEC_PWR hdbtout10<CR><LF> Returns: CEC: ON<CR><LF> Auto CEC: ON<CR><LF> Auto CEC Delay Value: 2 Min<CR><LF>	prm1 = {on, off} prm2 = {0~30}

6.3 EDID Configuration

Action	Command	Parameters
Note: The following settings require that the EDID Rotary dial is set to API Control (position 9).		
Set Input EDID	SET EDID in prm<CR><LF> Returns: in EDID: prm<CR><LF> Example: Set hdmi1 to 4K@30Hz Dolby 5.1 SET EDID hdmi1 fix7<CR><LF> Returns: HDMI1 EDID: fix7<CR><LF>	in = {vga, dp, hdmi1, hdmi2} VGA Input: prm = {fix0, fix1, fix2, fix3, fix4} fix0: 1280x800@60Hz fix1: 1920x1200@60Hz fix2: 1920x1080@60Hz fix3: 1280x720@60Hz fix4: 1024x768@60Hz DP/HDMI1/HDMI2 inputs: prm={fix0, fix1, fix2, fix3, fix4, fix5, fix6, fix7} fix0: copy fix1: 4K@30Hz PCM-2Ch fix2: 1920x1080@60Hz PCM-2Ch fix3: 1280x720@60Hz PCM-2Ch fix4: 1920x1200@60Hz PCM-2Ch fix5: 1280x800@60Hz PCM-2Ch fix6: 1920x1080@60Hz Dolby 5.1 fix7: 4K@30Hz Dolby 5.1
Query All Inputs EDID status	GET EDID_STATUS<CR><LF> Returns: VGA EDID: prm<CR><LF> DP EDID: prm<CR><LF> HDMI1 EDID: prm<CR><LF> HDMI2 EDID: prm<CR><LF> Example: Query EDID status GET EDID_STATUS<CR><LF> Returns: VGA EDID: fix3<CR><LF> DP EDID: fix5<CR><LF> HDMI1 EDID: fix7<CR><LF> HDMI2 EDID: fix0<CR><LF>	in = {vga,dp,hdmi1,hdmi2} VGA Input: prm = {fix0, fix1, fix2, fix3, fix4} fix0: 1280x800@60Hz fix1: 1920x1200@60Hz fix2: 1920x1080@60Hz fix3: 1280x720@60Hz fix4: 1024x768@60Hz DP/HDMI1/HDMI2 inputs: prm={fix0, fix1, fix2, fix3, fix4, fix5, fix6, fix7} fix0: copy fix1: 4K@30Hz PCM-2Ch fix2: 1920x1080@60Hz PCM-2Ch fix3: 1280x720@60Hz PCM-2Ch fix4: 1920x1200@60Hz PCM-2Ch fix5: 1280x800@60Hz PCM-2Ch fix6: 1920x1080@60Hz Dolby 5.1 fix7: 4K@30Hz Dolby 5.1

6.4 HDCP Configuration

Action	Command	Parameters
Set Input HDCP On/Off	SET HDCPSUPPORT_ONOFF in prm1<CR><LF> Returns: In:prm2<CR><LF> Example: Turn On HDCP for HDMI 1 SET HDCPSUPPORT_ONOFF hdmi1 on<CR><LF> Returns: HDMI1:HDCP Supported <CR><LF>	in = {hdmi1, hdmi2} prm1 = {on, off} prm2 = {HDCP Supported, HDCP Not supported}
Query Input HDCP Status	GET HDCP_STATUS<CR><LF> Returns: hdmi1:prm1<CR><LF> hdmi2:prm1<CR><LF> HDMI OUT HDCP Status: prm2<CR><LF> Example: Query HDCP status with HDCP supported on both inputs. GET HDCP_STATUS<CR><LF> Returns: hdmi1:HDCP Supported<CR><LF> hdmi2: HDCP Supported<CR><LF> HDMI OUT HDCP Status: Encryption<CR><LF>	Prm1={HDCP Supported, HDCP Not Supported} Prm2={Non Encryption, Encryption}

6.5 Video Configuration

Action	Command	Parameters
Force RGB Video	SET FORCERGB prm<CR><LF> Returns: FORCERGB prm<CR><LF> Example: Force RGB On SET FORCERGB on<CR><LF> Returns: FORCERGB on<CR><LF>	prm= {on, off}
Query RGB Video Status	GET FORCERGB<CR><LF> Returns: FORCERGB prm<CR><LF> Example: Query RGB video status GET FORCERGB<CR><LF> Returns: FORCERGB on<CR><LF>	prm= {on, off}
Configure Output Resolution (Scaling)	SET RESOLUTION out prm<CR><LF> Returns: RESOLUTION out prm <CR><LF> Example: Set output resolution to 1920x1080@60. SET RESOLUTION hdmiout 1920x1080@60<CR><LF> Returns: HDMI out resolution is 1920x1080@60	out= {hdmiout} prm= {on, off}
Query Scaler Mode Status	GET SCALER_STATUS <CR><LF> Returns: Scaler Info: STANDBY_status prm1<CR><LF> RESOLUTION hdmiout prm2<CR><LF> HDCP hdmiout prm1<CR><LF> MUTE audioout prm1<CR><LF> VOLGAIN_DATA audioout prm3<CR><LF> Example: Query Mode Status GET SCALER_STATUS <CR><LF> Returns: Scaler Info: STANDBY_status on<CR><LF> RESOLUTION hdmiout 1920x1080@60<CR><LF> HDCP hdmiout on<CR><LF> MUTE audioout off<CR><LF> VOLGAIN_DATA audioout 35<CR><LF>	prm1= {on, off} prm2= See List 1024x768@60 1280x1024@60 1280x720@60 1280x800@60 1366x768@60 1600x1200@60 1920x1080@60 1920x1200@60 3840x2160@30 auto prm3= {0~100}

7. Diagnostic Troubleshooting

Action	Command	Parameters
Query Scaler Mode Status	GET SCALER_STATUS <CR><LF> Returns: Scaler Info: STANDBY_status prm1<CR><LF> RESOLUTION hdmiout prm2<CR><LF> HDCP hdmiout prm1<CR><LF> MUTE audioout prm1<CR><LF> VOLGAIN_DATA audioout prm3<CR><LF>	prm1= {on, off} prm2= See List 1024x768@60 1280x1024@60 1280x720@60 1280x800@60 1366x768@60 1600x1200@60 1920x1080@60 1920x1200@60 3840x2160@30 auto
	Example: Query Mode Status GET SCALER_STATUS <CR><LF> Returns: Scaler Info: STANDBY_status on<CR><LF> RESOLUTION hdmiout 1920x1080@60<CR><LF> HDCP hdmiout on<CR><LF> MUTE audioout off<CR><LF> VOLGAIN_DATA audioout 35<CR><LF>	prm3= {0~100}
Query System Status	GET SYS_STATUS <CR><LF> Returns: Info based on parameters Example: Query system status GET SYS_STATUS <CR><LF> Returns: Info based on parameters	Switch Info: Source Select: VGA Switch Mode: Automatic(priority) Mode HDCP Info: HDMI1:HDCP Supported HDMI2:HDCP Supported HDMI OUT HDCP Status: Non Encryption EDID Info: VGA EDID: fix0 DP EDID: fix0 HDMI1 EDID: fix0 HDMI2 EDID: fix0 CEC Info: CEC: ON Auto CEC: ON Auto CEC Delay Value: 2 Min AUDIOOUT Info: AUDIOOUT_MUTE audioout off VOLGAIN_AUDIOOUT_MUTE audioout off VOLGAIN_DATA audioout 100 Scaler Info: STANDBY_status off RESOLUTION hdmiout auto
System Reboot	REBOOT<CR><LF> Returns: REBOOT<CR><LF> Example: Reboot switcher REBOOT<CR><LF> Returns: REBOOT<CR><LF>	{none}
Factory Reset	RESET<CR><LF> Returns: RESET<CR><LF> Example: Reset switcher to factory defaults RESET<CR><LF> Returns: RESET<CR><LF>	{none}

8. Contacting Technical Support

Should further clarification of the content of this manual or assistance on troubleshooting be required, please contact WyreStorm technical support.

Phone: UK: +44 (0) 1793 230 343 | ROW: 844.280.WYRE (9973)

Email: Support@WyreStorm.com

On Line Chat (Accessible through website): <http://WyreStorm.com/Contact-Tech-Support>

9. Revision History

Serial Port Settings

v1.1- 180321 – March 2018

Section	Update
Serial Port Settings	Removed reference to IP settings as Ethernet on this product is pass-through over HDBaseT Only

v1 - 180223 – February 2018

Section	Update
All	Original Release

Publication Disclaimer

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WyreStorm Technical Support

UK:- +44 (0) 1793 230 343

US/ROW: +1 844-280-WYRE (9973)

Email: support@wyrestorm.com

WyreStorm Offices

North America: 23 Wood Road, Round Lake, NY 12151

Tel: +1 518-289-1293

EMEA: Unit 22, Ergo Business Park, Swindon, Wiltshire, SN3 3JW, UK

Tel: +44 (0) 1793 230 343