

SW-0501-HDBT / SW-1001-HDBT

Presentation Switcher/Scaler with Mic Input | CEC Control (1080p to 100m/328ft)

Application Program Interface (API)

Version: v1







Release Date: October 21, 2015



Thank you for choosing this WyreStorm product.
Please read these instructions carefully before installing to avoid complications later.


IMPORTANT! Safety Information

Safety Classifications

| | |
|--|---|
| Note: | Provides special information for installing, configuring, and operating the equipment. |
|  IMPORTANT! | Provides special information that is critical to installing, configuring, and operating the equipment. |
|  CAUTION! | Provides special information on avoiding situations that may cause damage to equipment. |
|  WARNING! | Provides special information on avoiding situations that may cause physical danger to the installer, end user, etc. |
|  ELECTRIC SHOCK! | The source power poses an electric shock hazard that has the potential to cause serious injury to installers and end users. |
|  ELECTRICAL DISCONNECT: | The source power outlet and power supply input power sockets should be easily accessible to disconnect power in the event of an electrical hazard or malfunction. |
|  WEIGHT INJURY! | Installing some of the equipment requires two installers to ensure safe handling during installation. Failure to use two installers may result in injury. |

Safety Statements

1. Read these instructions in their entirety and retain a copy for later reference.
2. Follow all instructions and heed all warnings.
3. Do not expose this apparatus to rain, moisture, sprays, drips or splashes and ensure that no objects containing liquids are placed on the apparatus, including cups, glasses and vases.
4. Do not place this unit in a confined space such as enclosed shelving, cabinets or bookshelves. Ensure the unit is adequately ventilated.
5. To prevent the risk of electric shock or fire hazard due to overheating, do not cover the unit or obstruct ventilation openings with material, newspaper, cardboard or anything that may restrict airflow into the unit.
6. Do not install near external heat sources such as radiators, heat registers, boilers or any device that produces heat such as amplifiers or computers and do not place near sources of naked flame.
7. Unplug apparatus from power supply during lightning storms or when unused for long periods of time.
8. Protect the power cable from being walked on, pinched or restricted in any way, especially at plug connections.
9. Only use attachments/accessories specified by the manufacturer.
10. Units contain non-serviceable parts - Refer all servicing to qualified service personnel.

 **IMPORTANT!**
Do Not Hot swap HDMI or HDBaseT connections - Please insert and extract cables carefully with the power SWITCHED OFF. Power is passed along transmissions so connecting and disconnecting cables while powered can result in damage to circuitry or possible injury.

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1. Introduction

The following document contains the Application Program Interface (API) commands to control the SW-0501-HDBT / SW-1001-HDBT presentation switchers via serial commands.

Before Beginning

WyreStorm recommends visiting the product page before installing this product for updates to this API as well as other information about the product.

2. Wiring and Connections

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. There are 3 different RS-232 connections on the switcher that use 2 different connectors.

- RS-232 1 - Control of the switcher using a 4-pin phoenix connector.
- RS-232 2 - Control of local devices using a 4-pin phoenix connector.
- RS-232 - Control of devices in a remote location by sending control signals via HDBaseT using a 3-pin phoenix connector.

RS-232 Connection Guidelines

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.

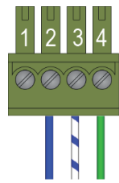
Simple Method - Individual Ports for Switcher and Device Control

This is the preferred method for switcher, local, and remote device control when there are multiple ports available on the control system.

Use [Complex Method - Shared Port for Switcher and Remote Device Control](#) to control the switcher and remote devices via a single RS-232 port on the control system.

RS-232 1/2 (Switcher and Device Control)

These ports use a 4-pin phoenix connector (supplied).

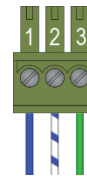


- Pin 1: (Not Used)
- Pin 2: TX (Transmit)
- Pin 3: RX (Receive)
- Pin 4: Ground (GND)

Wire colors shown are for pin identification only and do not represent any wiring standard.

RS-232 (Remote Device via HDBaseT)

This port uses a 3-pin phoenix connector (supplied).



- Pin 1: TX (Transmit)
- Pin 2: RX (Receive)
- Pin 3: Ground (GND)

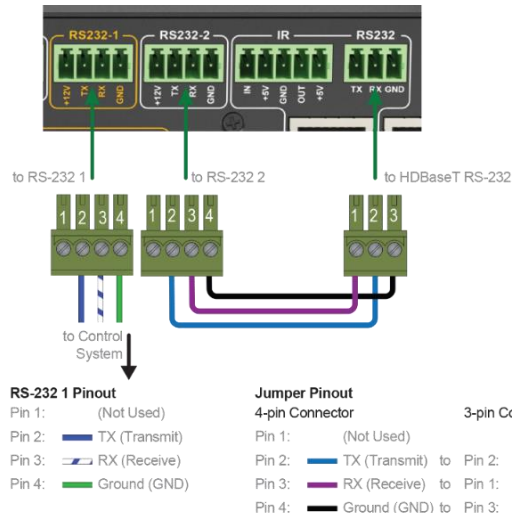
Wire colors shown follow EIA-561 standard.

Complex Method - Shared Port for Switcher and Remote Device Control

Use this method for switcher and remote device control when there is a single port available on the control system. This method can only be used if the switcher will not be controlling a local device using RS-232 2 as the port will be used to jump the signal to the HDBaseT RS-232.

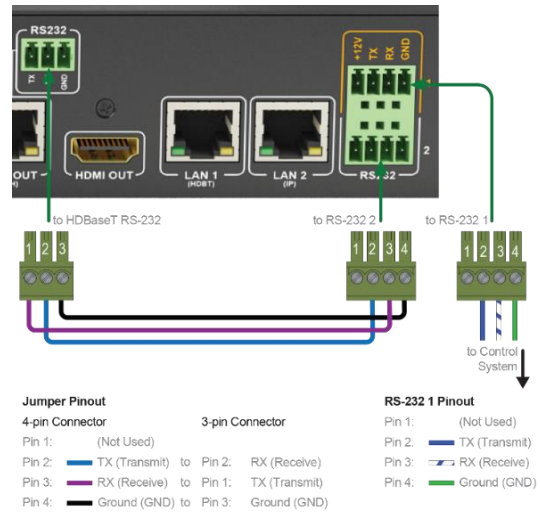
Use [Simple Method - Individual Ports for Switcher and Device Control](#) to control the switcher, local, and remote devices via multiple RS-232 ports on the control system.

SW-0501-HDBT Connections



Wire colors shown are for pin identification only and do not represent any wiring standard.

SW-1001-HDBT Connections



Wire colors shown are for pin identification only and do not represent any wiring standard.

3. Preparation for Communication

The following setting must be performed prior to communicating with the switcher.

Computer and Control System COM Port Settings

The following parameters must be set in the computer or control system COM port in order to communicate with the switcher.

| | |
|------------|------|
| Baud Rate: | 9600 |
| Parity: | None |
| Data Bit: | 8 |
| Stop Bit: | 1 |

Computer IP Address Settings

The computer and the switcher must be on the same subnet in order to communicate. Set the computers IP address range of the switcher.

Example: If the IP address of the switcher is 192.16.1.24, set the computers IP address to 192.168.1.x where x is number between 2 and 254 that is not used by other devices on the network.

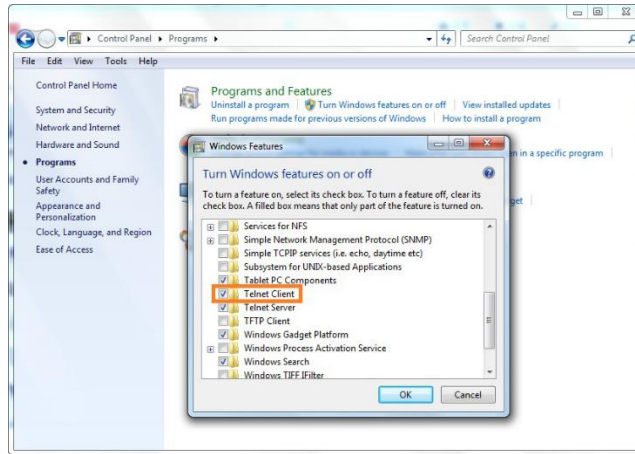
4. Accessing the Switcher via Telnet

Enabling Telnet Client

By default, the Telnet client is disabled within Windows. Follow the steps below to enable the Telnet client.

1. Navigate to: Control Panel > Programs.
2. In Programs and Features area box, click Turn Windows features on or off.
3. In the Windows Features dialog box, select the **Telnet Client** check box.

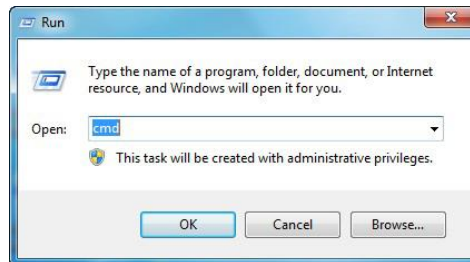
Windows 7 Screen Shot



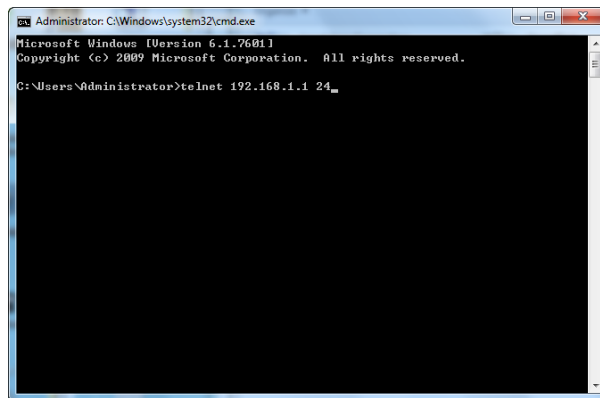
Logging Into the Switcher

The switcher is accessed via a command-line (CMD). The following steps are specific to Windows 7, actual path to the command line may vary based on operating system.

1. Navigate to: **Start > Run**.
2. In the Run dialog box, enter **cmd** then click **OK**.



3. Enter **telnet 192.168.1.1 24** if the switchers IP address is 192.168.1.1, and then press **Enter**.



4. Enter user name **root** and press **Enter**. When the following screen information appears, connection to switcher is successful. API commands to control the switcher may be entered in the command-line interface.

5. Switcher Commands

Source Selection

| | |
|-----------------------------|--|
| Syntax | <code>gbconfig --source-select [Source]</code> |
| Description | Switches one input to all outputs. |
| Accepted Values: | SW-0501-HDBT SW-1001-HDBT HDMI1 HDMI1 HDMI2 HDMI2 HDMI3 HDMI3 HDMI4 HDMI4 VGA1 VGA1 VGA2 HDBT |
| Example Command for HDMI 3: | <code>gbconfig --source-select HDMI3</code> |
| Response: | none |

Query Current Source

| | |
|------------------|--|
| Syntax | <code>gbconfig --show --source-select</code> |
| Description | Obtains the current input selected. |
| Accepted Values: | SW-0501-HDBT SW-1001-HDBT HDMI1 HDMI1 HDMI2 HDMI2 HDMI3 HDMI3 HDMI4 HDMI4 VGA1 VGA1 VGA2 HDBT |
| Example Command: | <code>gbconfig --show --source-select</code> |
| Response: | Currently selected source Example: HDMI3 |

Enable/Disable Auto Switching

| | |
|------------------|---|
| Syntax | <code>gbconfig --plug-detect=[Value]</code> |
| Description | Enables or disables auto switching. |
| Accepted Values: | Y : Auto switching enabled N : Auto switching disabled |
| Example Command: | <code>gbconfig --plug-detect=y</code> |
| Response: | none |

Query Auto Switching State (Enabled/Disabled)

| | |
|------------------|---|
| Syntax | gbconfig --show --plug-detect |
| Description | Queries that auto switch is enabled or disabled. |
| Example Command: | gbconfig --show --plug-detect |
| Response: | Y: Auto switching enabled N: Auto switching disabled |

Set Audio Output Volume Level

| | |
|------------------|---|
| Syntax | gbconfig --line-out=1 --level-control=[Value] |
| Description | Sets the volume level of AUDIO OUT port. |
| Accepted Values: | -100 to 12 |
| Example Command: | gbconfig --line-out=1 --level-control=-56 |
| Response: | none |

Query Audio Output Volume Level

| | |
|------------------|--|
| Syntax | gbconfig --show --line-out=1 --level-control |
| Description | Obtains the volume level of AUDIO OUT port. |
| Example Command: | gbconfig --show --line-out=1 --level-control |
| Response: | Current volume level. Example -56 |

Mute Audio Output

| | |
|------------------|--|
| Syntax | gbconfig --line-out=1 --mute=[Value] |
| Description | Mutes or unmutes the output of AUDIO OUT port. |
| Accepted Values: | Y: Audio output muted N: Audio output unmuted |
| Example Command: | gbconfig --line-out=1 --mute=y |
| Response: | none |

Query Audio Output Mute State

| | |
|------------------|--|
| Syntax | gbconfig --show --line-out=1 --mute |
| Description | Queries that the output of AUDIO OUT port is muted or not. |
| Example Command: | gbconfig --show --line-out=1 --mute |
| Response: | Y: Audio output muted N: Audio output unmuted |

Configure Video Output Resolution

| | |
|------------------|---|
| Syntax | gbset fvo [Value] |
| Description | Sets a desired resolution for HDMI and HDBT outputs. |
| Accepted Values: | AUTO 1080P_60 1080P_50 1080P_30 1080P_25 1080P_24 720P_60 720P_50 576P_50 480P_60 640X480_60 800X600_60 1024X768_60 1280X720_60 1280X768_60 1280X800_60 1280X1024_60 1366X768_60 1440X900_60 1600X1200_60 1680X1050_60 1920X1080_60 1920X1200_60 |
| Example Command: | gbset fvo 1920X1080_60 |
| Response: | none |

Query Video Output Resolution

| | |
|------------------|---|
| Syntax | gbget fvo |
| Description | Obtains the resolution set for HDMI and HDBT outputs. |
| Example Command: | gbget fvo |
| Response | [Value]=Output Resolution Example: 1920X1080_60 See Configure Video Output Resolution accepted resolutions for details. |

Power On (Wake Up) CEC Enabled Device

| | |
|------------------|---|
| Syntax | e e_cec_one_touch_play |
| Description | Wakes up a CEC-enabled device such as a display device connected through HDMI or HDBT port. |
| Example Command: | e e_cec_one_touch_play |
| Response | none |

Power Off (Sleep) CEC Enabled Device

| | |
|------------------|---|
| Syntax | e e_cec_system_standby |
| Description | Makes a CEC-enabled device such as a display device connected through HDMI or HDBT port enter standby mode. |
| Example Command: | e e_cec_system_standby |
| Response | none |

3rd Party Device Control (RS-232 2 Port)

| | |
|------------------|--|
| Syntax | soip2 -f /dev/ttyS0 -b PARAM [-r] [-H] -s "CONTENT" |
| Description | Controls a third party serial device connected to RS232-2 port. -f: sets serial device file which is /dev/ttyS0 and cannot be changed. -b: sets the serial parameters like 115200-8n1 according to a controlled third party serial device and replace PARAM with them. 115200-8n1 contains the following parts: Baud Rate: 115200 bps (115200 for short), chosen from 150, 200, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600 or 115200 Data Bits: 8 bits (8 for short), chosen from 5, 6, 7 or 8 Parity: None (n for short), chosen from n (None), e (Even) or o (Odd) Stop Bits: 1 (1 for short), chosen from 1 or 2 [-r]: automatically adds a carriage return in the end of this command for execution. Used if needed. [-H]: indicates CONTENT are equivalent hexadecimal representations of a command of a controlled third party device. Used if needed. For details, see -s below. -s: sends a command to a controlled third party device for controlling it. If -H is not added, the command of a controlled third party device must be printable ASCII characters and it will be passed through to the third party device. In this case, you need to replace CONTENT with this command. If -H is added, the command of a controlled third party device must be converted to its equivalent hexadecimal representations and replace CONTENT. Double quotation marks must be used to include CONTENT. Otherwise, spaces cannot be recognized by switcher. |
| Accepted Values: | |
| Example Command: | soip2 -f /dev/ttyS0 -b 115200-8n1 -r -H -s "10 00 02 00 03 91 01 00 01 EF EF 08 01 05 01 01 FF 03 F0 00 00 00 00 00 00 00 00 00 17" |
| Response: | none |

Restore Switcher to Factory Defaults

| | |
|------------------|--|
| Syntax | reset_to_default.sh |
| Description | Restores SWITCHER to its factory defaults. Note: The switcher requires a manual reboot (cycle power) after restoring defaults. |
| Example Command: | reset_to_default.sh |
| Response: | none |

Reboot the Switcher

| | |
|------------------|-----------------------|
| Syntax | reboot |
| Description | Reboots the switcher. |
| Example Command: | reboot |
| Response: | none |

Publication Disclaimer

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