4K / UHD
Four-Input HDMI Switcher
with Auto-Switching and Return Optical Audio

Application Programming Interface
# Version Information

<table>
<thead>
<tr>
<th>Version</th>
<th>Release Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 2018</td>
<td>Initial release</td>
</tr>
<tr>
<td>2</td>
<td>Jul 2019</td>
<td>Firmware 1.2.10 added “System sta” command.</td>
</tr>
</tbody>
</table>
## Commands

The following tables provide an alphabetical list of commands available for both the AT-JUNO-451 and AT-JUNO-451-HDBT. Commands are case-sensitive. If the command fails or is entered incorrectly, then the feedback is “Command FAILED”.

⚠️ **IMPORTANT:** Each command is terminated with a carriage-return (0x0d) and the feedback is terminated with a carriage-return and line-feed (0x0a).

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AudioSRC</td>
<td>Sets the audio source for the OPTICAL port</td>
</tr>
<tr>
<td>AutoSW</td>
<td>Sets the auto-switching mode</td>
</tr>
<tr>
<td>Blink</td>
<td>Enables or disables blinking of the <strong>POWER</strong> LED indicator on the front panel</td>
</tr>
<tr>
<td>Broadcast</td>
<td>Enables or disables broadcast mode</td>
</tr>
<tr>
<td>CSpara</td>
<td>Sets the baud rate, data bits, parity bit, and stop bits for the serial port</td>
</tr>
<tr>
<td>EDIDCopy</td>
<td>Saves the downstream EDID to the specified internal memory location on the unit</td>
</tr>
<tr>
<td>EDIDMSet</td>
<td>Assigns an EDID to the specified input.</td>
</tr>
<tr>
<td>HDCPSet</td>
<td>Set the HDCP reporting mode of the specified <strong>HDMI</strong> input port</td>
</tr>
<tr>
<td>HDMIAud</td>
<td>Enables or disables audio on the HDMI output</td>
</tr>
<tr>
<td>help</td>
<td>Displays the list of available commands</td>
</tr>
<tr>
<td>InputBroadcast</td>
<td>Invokes the InputStatus command when enabled</td>
</tr>
<tr>
<td>InputStatus</td>
<td>Displays the state of each input</td>
</tr>
<tr>
<td>IPAddUser</td>
<td>Adds a user for Telnet and webGUI access</td>
</tr>
<tr>
<td>IPCFG</td>
<td>Displays the current network settings for the unit</td>
</tr>
<tr>
<td>IPDelUser</td>
<td>Deletes the specified user</td>
</tr>
<tr>
<td>IPDHCP</td>
<td>Enables or disables DHCP mode on the unit</td>
</tr>
<tr>
<td>IPLogin</td>
<td>Enables or disables login credentials when starting a Telnet session</td>
</tr>
<tr>
<td>IPPort</td>
<td>Sets the Telnet listening port for the unit</td>
</tr>
<tr>
<td>IPQuit</td>
<td>Closes the current Telnet session</td>
</tr>
<tr>
<td>IPStatic</td>
<td>Sets the static IP address, subnet mask, and gateway for the unit</td>
</tr>
<tr>
<td>IPTTimeout</td>
<td>Specifies the time interval of inactivity before a Telnet session is closed</td>
</tr>
<tr>
<td>IROFF</td>
<td>Disables the IR receiver on the unit</td>
</tr>
<tr>
<td>IRON</td>
<td>Enables the IR receiver on the unit</td>
</tr>
<tr>
<td>Lock</td>
<td>Locks the buttons on the front panel</td>
</tr>
<tr>
<td>Mreset</td>
<td>Resets the unit to factory-default settings</td>
</tr>
</tbody>
</table>
## Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWOFF</td>
<td>Execute this command to power-off the unit</td>
</tr>
<tr>
<td>PWON</td>
<td>Execute this command to power-on the unit</td>
</tr>
<tr>
<td>PWSTA</td>
<td>Displays the power state of the unit</td>
</tr>
<tr>
<td>RAtlMac</td>
<td>Displays the MAC address of the unit</td>
</tr>
<tr>
<td>Status</td>
<td>Displays the routing state of the unit</td>
</tr>
<tr>
<td>System</td>
<td>Displays information about the system status</td>
</tr>
<tr>
<td>Toslink</td>
<td>Enables or disables the OPTICAL port on the back panel</td>
</tr>
<tr>
<td>Type</td>
<td>Displays the model of the unit</td>
</tr>
<tr>
<td>Unlock</td>
<td>Unlocks the buttons on the front panel</td>
</tr>
<tr>
<td>Version</td>
<td>Displays the current firmware version of the unit</td>
</tr>
<tr>
<td>x1AVx1</td>
<td>Routes the specified input to the output</td>
</tr>
</tbody>
</table>
# Commands

## AudioSRC

Sets the audio source for the **OPTICAL** port on the AT-JUNO-451. HDMI audio is de-embedded and heard on the specified source. Use the `sta` argument to display the current setting.

**Syntax**
```
AudioSRC X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Source</td>
<td>SPDIF, ARC, sta</td>
</tr>
</tbody>
</table>

**Example**
AudioSRC SPDIF

**Feedback**
AudioSRC SPDIF

## AutoSW

Enables or disables auto switching between INPUT ports. Use the `sta` argument to display the current setting.

**Syntax**
```
AutoSW X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Value</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

**Example**
AutoSW on

**Feedback**
AutoSW on

## Blink

Enables or disables blinking of the **POWER LED** indicator on the front panel. When set to `on`, the **POWER LED** indicator button will flash, alternating between blue and red, and can be used to physically identify the unit on a network. The **POWER LED** indicator will flash until the **Blink off** command is executed. `on` = enables blinking; `off` = disables blinking. Use the `sta` argument to display the current setting. The default setting is `off`.

**Syntax**
```
Blink X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Value</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

**Example**
Blink on

**Feedback**
Blink on
Commands

Broadcast

Enables or disables broadcast mode. By default, broadcast mode is set to ON. When set to ON, any system changes will be broadcast to the web GUI will also be affected on the control system (if connected), via TCP/IP. To separate control between the web GUI and Telnet, set this feature to OFF. Command queries such as #IPCFG and #Type will only return information to the requester. Use the sta argument to display the current setting.

Syntax

```
Broadcast X
```

Parameter | Description | Range
---|---|---
X | Value | on, off, sta

Example

Broadcast on

Feedback

Broadcast on

CSpara

Sets the baud rate, data bits, parity bit, and stop bits for the serial port. Use the sta argument to display the current serial port settings. Each argument must be separated by a comma; no spaces are permitted. Brackets must be used when executing this command.

Syntax

```
CSpara[W,X,Y,Z]
```

Parameter | Description | Range
---|---|---
W | Baud rate | 2400, 4800, 9600, 19200, 38400, 57600, 115200
X | Data bits | 7, 8
Y | Parity bit | None, Odd, Even
Z | Stop bits | 1, 2

Example

CSpara[115200,8,0,1]
CSpara[sta]

Feedback

CSpara[115200,8,0,1]
CSpara [115200,8,0,1]
Commands

**EDIDCopy**
Saves the downstream EDID to the specified internal memory location on the unit. Do not use a space between the command and the first argument.

**Syntax**
EDIDCopyX Y

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Input</td>
<td>1 ... 4</td>
</tr>
<tr>
<td>Y</td>
<td>Memory location</td>
<td>1 ... 8</td>
</tr>
</tbody>
</table>

**Example**
EDIDCopy1 4

**Feedback**
EDIDCopy1 4
**EDIDMSet**

Assigns an EDID to the specified input. The EDID can be either one of the internal preprogrammed EDIDs or a custom EDID that can be stored in one of the eight memory locations. A brief description of each preprogrammed EDID is listed in the table below. For a detailed summary of each EDID, refer to the User Manual for more information. Use arguments 1 through 8 to store the EDID in any of eight memory locations. To display the EDID assigned to an input, use the `sta` argument.

### Syntax

```
EDIDMSet X Y
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Input</td>
<td>1 ... 2</td>
</tr>
<tr>
<td>Y</td>
<td>EDID preset</td>
<td>1 ... 24</td>
</tr>
<tr>
<td>Z</td>
<td>Memory location</td>
<td>1 ... 8</td>
</tr>
</tbody>
</table>

### Example

```
EDIDMSet 2 3 1
EDIDMSet 1 sta
```

### Feedback

```
EDIDMSet 2 3 1
EDIDMSet 1 default
```

<table>
<thead>
<tr>
<th>EDID (parameter Y)</th>
<th>Description</th>
<th>EDID (parameter Y)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Default</td>
<td>13</td>
<td>1280x800 DVI</td>
</tr>
<tr>
<td>2</td>
<td>1080p 2CH</td>
<td>14</td>
<td>1920x1200 2CH</td>
</tr>
<tr>
<td>3</td>
<td>1080p MCH</td>
<td>15</td>
<td>3840x2160@60 4:2:0 2CH</td>
</tr>
<tr>
<td>4</td>
<td>1080p DD</td>
<td>16</td>
<td>3840x2160@60 4:2:0 MCH</td>
</tr>
<tr>
<td>5</td>
<td>1080p 3D 2CH</td>
<td>17</td>
<td>3840x2160@30 4:4:4 2CH</td>
</tr>
<tr>
<td>6</td>
<td>1080p 3D MCH</td>
<td>18</td>
<td>3840x2160@60 4:4:4 MCH</td>
</tr>
<tr>
<td>7</td>
<td>1080p 3D DD</td>
<td>19</td>
<td>4096x2160@60 4:2:0 2CH</td>
</tr>
<tr>
<td>8</td>
<td>720p 2CH</td>
<td>20</td>
<td>4096x2160@60 4:2:0 MCH</td>
</tr>
<tr>
<td>9</td>
<td>720p DD</td>
<td>21</td>
<td>3840x2160@60 4:4:4 2CH</td>
</tr>
<tr>
<td>10</td>
<td>1280x800 2CH</td>
<td>22</td>
<td>3840x2160@60 4:4:4 MCH</td>
</tr>
<tr>
<td>11</td>
<td>1366x768 2CH</td>
<td>23</td>
<td>4K 60 4:2:0 HDR 2CH</td>
</tr>
<tr>
<td>12</td>
<td>1080p DVI</td>
<td>24</td>
<td>4K 60 4:2:0 HDR MCH*</td>
</tr>
</tbody>
</table>

* HD multichannel audio (lossless).
HDCPSet

Set the HDCP reporting mode of the specified HDMI input port. Some computers will send HDCP content if an HDCP-compliant display is detected. Setting this value to off, will force the computer to ignore detection of HDCP-compliant displays. Disabling this feature will not decrypt HDCP content. on = enables HDCP detection; off = disables HDCP detection; sta = displays the current setting. No space should exist between the first argument and the command.

Syntax

HDCPSet X Y

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Input</td>
<td>1 ... 4</td>
</tr>
<tr>
<td>Y</td>
<td>Reporting status</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

Example

HDCPSet1 off

Feedback

HDCPSet1 off

HDMI Aud

Enables or disables audio on the HDMI output. on = enables HDMI audio output; off = disables HDMI audio output; sta = displays the current setting.

Syntax

HDMI Aud X

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Value</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

Example

HDMI Aud off

Feedback

HDMI Aud off
Commands

help
Displays the list of available commands. To obtain help on a specific command, enter the help command followed by the name of the command.

Syntax
help X

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Command name (optional)</td>
<td>Command</td>
</tr>
</tbody>
</table>

Example
help

Feedback
Command List
------------------------
Help
IPCFG
IPDHCP
...
...

InputBroadcast
Enabling this feature will invoke the InputStatus command, when a new source is connected, and will return the state of all inputs. This also applies when auto-switching occurs. on = enable; off = disable; sta = displays the current setting.

Syntax
InputBroadcast X

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>State</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

Example
InputBroadcast on

Feedback
InputBroadcast on
**InputStatus**
Displays the state of each input. 0 = no source connected; 1 = source connected. Optionally specify the number of the input, as an argument, to return the state of that input.

<table>
<thead>
<tr>
<th>Syntax</th>
<th>InputStatus [X]</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Input (optional)</td>
<td>1 ... 4</td>
</tr>
</tbody>
</table>

**Examples**
InputStatus
InputStatus1

**Feedback**
InputStatus 0000
InputStatus1 0

**IPAddUser**
Adds a user for Telnet control. This command performs the same function as adding a user within the **Config** page of the web GUI. Refer to the User Manual for more information.

<table>
<thead>
<tr>
<th>Syntax</th>
<th>IPAddUser X Y</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>User name</td>
<td>20 characters (max)</td>
</tr>
<tr>
<td>Y</td>
<td>Password</td>
<td>20 characters (max)</td>
</tr>
</tbody>
</table>

**Example**
IPAddUser BigBoss b055man

**Feedback**
IPAddUser BigBoss b055man
TCP/IP user was added
**IPCFG**

Displays the current network settings for the unit.

**Syntax**

```
IPCFG
```

This command does not require any parameters

**Example**

```
IPCFG
```

**Feedback**

```
Mac Addr:     B8:98:B0:05:DF:F7
IP Addr:       10.0.1.101
Netmask:      255.255.255.0
Gateway:      10.0.1.1
Telnet Port:  23
HTTP Port:    80
```

---

**IPDelUser**

Deletes the specified TCP/IP user. This command performs the same function as removing a user within the Config page of the web GUI. Refer to the User Manual for more information.

**Syntax**

```
IPDelUser X
```

**Parameter** | **Description** | **Range**
--- | --- | ---
X | User | User name

**Example**

```
IPDelUser MinionTwo
```

**Feedback**

```
IPDelUser MinionTwo
TCP/IP user was deleted
```
### Commands

**IPDHCP**

Enables or disables DHCP mode on the unit. on = enables DHCP mode; off = disables DHCP mode; sta = displays the current setting. If this feature is disabled, then a static IP address must be specified for the unit. Refer to the IPQuit command for more information.

**Syntax**

```
IPDHCP X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Value</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

**Example**

IPDHCP on

**Feedback**

IPDHCP on

**IPLLogin**

Enables or disables the use of login credentials when starting a Telnet session on the unit. If this feature is set to on, then the unit will prompt for both the username and password. Use the same credentials as the web GUI. on = login credentials required; off = no login required. Use the sta argument to display the current setting.

**Syntax**

```
IPLLogin X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Value</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

**Example**

IPLLogin off

**Feedback**

IPLLogin off

**IPPort**

Sets the Telnet listening port for the unit. Use the sta argument to display the current setting.

**Syntax**

```
IPPort X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Port</td>
<td>0 ... 65535, sta</td>
</tr>
</tbody>
</table>

**Example**

IPPort 23

**Feedback**

IPPort 23
Commands

**IPQuit**
Closes the current Telnet session.

**Syntax**

```
IPQuit
```

**This command does not require any parameters**

**Example**

```
IPQuit
```

**Feedback**

Connection lost...

**IPStatic**
Sets the static IP address, subnet mask, and gateway (router) address of the unit. Before using this command, DHCP must be disabled on the unit. Refer to the **IPDHCP** command for more information. Each argument must be entered in dot-decimal notation and separated by a space. The default static IP address is 192.168.1.254.

**Syntax**

```
IPStatic X Y Z
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>IP address</td>
<td>0 ... 255 (per byte)</td>
</tr>
<tr>
<td>Y</td>
<td>Subnet mask</td>
<td>0 ... 255 (per byte)</td>
</tr>
<tr>
<td>Z</td>
<td>Gateway (router)</td>
<td>0 ... 255 (per byte)</td>
</tr>
</tbody>
</table>

**Example**

```
IPStatic 192.168.1.112 255.255.255.0 192.168.1.1
```

**Feedback**

IPStatic 192.168.1.112 255.255.255.0 192.168.1.1

**IPTTimeout**
Specifies the time interval of inactivity before the Telnet session is automatically closed.

**Syntax**

```
IPTTimeout X
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Interval (in seconds)</td>
<td>1 ... 60000</td>
</tr>
</tbody>
</table>

**Example**

```
IPTTimeout 300
```

**Feedback**

IPTTimeout 300
### IROFF
Disables the IR receiver on the AT-JUNO-451.

**Syntax**

IROFF

This command does not require any parameters

**Example**

IROFF

**Feedback**

IROFF

### IRON
Enables the IR receiver on the AT-JUNO-451.

**Syntax**

IRON

This command does not require any parameters

**Example**

IRON

**Feedback**

IRON

### Lock
Locks the buttons on the front panel. This feature is useful when the unit is installed in a rack environment or other remote location, to prevent unauthorized tampering or accidental pressing of the front-panel buttons. Also refer to the ##Unlock command.

**Syntax**

Lock

This command does not require any parameters

**Example**

Lock

**Feedback**

Lock
Mreset
Resets the unit to factory-default settings.

Syntax
Mreset

This command does not require any parameters

Example
Mreset

Feedback
Mreset

PWOFF
Executing this command will power-off the AT-JUNO-451. Use the PWON command to power-on the unit.

Syntax
PWOFF

This command does not require any parameters

Example
PWOFF

Feedback
PWOFF

PWON
Executing this command will power-on the AT-JUNO-451. Use the PWOFF command to power-off the unit.

Syntax
PWON

This command does not require any parameters

Example
PWON

Feedback
PWON
### Commands

#### PWSTA
Displays the current power state of the AT-JUNO-451.

**Syntax**

```
PWSTA
```

This command does not require any parameters

**Example**

```
PWSTA
```

**Feedback**

```
PWON
```

#### RAtlMac
Displays the MAC address of the unit.

**Syntax**

```
RAtlMac
```

This command does not require any parameters

**Example**

```
RAtlMac
```

**Feedback**

```
b8-98-b0-00-56-c9
```

#### Status
Displays the which input is routed to the output. The routing state is returned as xyAVx1, where the y is the input.

**Syntax**

```
Status
```

This command does not require any parameters

**Example**

```
Status
```

**Feedback**

```
x3AVx1
```
Commands

System
Displays the current configuration of the AT-JUNO-451. The sta argument must be specified.

**Syntax**

System X

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Constant</td>
<td>sta</td>
</tr>
</tbody>
</table>

**Example**

System sta

**Feedback**

Model: AT-JUNO-451
MAC Addr: b8-98-b0-00-3b-f9
Address Type: DHCP
IP: 10.20.20.121
Netmask: 255.255.255.0
Gateway: 10.20.20.1
Http Port: 80
Telnet Port: 23
Firmware: 1.2.10
On/Up Time <dd HH:mm:ss>: 0 23:39:40
Power Status: PWON

Toslink
Enables or disables the OPTICAL port on the back of the unit. Use the sta argument to display the current setting.

**Syntax**

Toslink X

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>State</td>
<td>on, off, sta</td>
</tr>
</tbody>
</table>

**Example**

Toslink off

**Feedback**

Toslink off
Commands

Type
Displays the model information of the unit.

Syntax
Type

This command does not require any parameters

Example
Feedback
Type
AT-JUNO-451

Unlock
Unlocks the buttons on the front panel. Also refer to the Lock command.

Syntax
Unlock

This command does not require any parameters

Example
Feedback
Unlock
Unlock

Version
Displays the current firmware version of the unit.

Syntax
Version

This command does not require any parameters

Example
Feedback
Version
1.2.10
Commands

\textbf{x?AVx1}

Routes the specified input to the output.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>Input</td>
<td>1 ... 4</td>
</tr>
</tbody>
</table>