

AXON

AVC Extension over Network

3rd Party Control API

Axon Control Overview

Most Attero Tech Axon family products utilize JSON (JavaScript Object Notation) formatted control APIs. Full device control includes two parts, both defined by JSON schemas:

- Command protocol: This defines the JSON format of commands
- Device data model: This defines the values that can be set or retrieved

Transport

Commands are sent as UDP messages to a destination port of 49494.

Command protocol

A command consists of a JSON object containing one and only one of these keys:

- "get": reads data from the device
- "set": writes data to the device

"get" and "set" commands use JSON pointers (<https://tools.ietf.org/html/rfc6901>) to identify the target parameter or parameters within the data model. The pointers are strings similar to folder paths with each object key or array indices separated by a / character. The pointers are case sensitive and can point to anything from a specific key to data for a complete object.

"get" Command

A "get"

Each part of a command is separated by a comma.

points to an object, all keys below that object in the data model will be returned.

refer to any value including objects and arrays, though may return an error if the response would be too large for a single UDP packet.

Command Example:

```
{ "get": "TARGET_PTR" }
```

"TARGET_PTR" is a JSON pointer to the desired parameter or set of parameters. There are no additional parameters.

Response Example:

```
{ "result": "OK", "cmd": "get", "param": "TARGET_PTR", "value": "PARAM_VALUE" }
```

"TARGET_PTR" is the JSON pointer from the original command.

"PARAM_VALUE" is the desired object requested

“set” Command

“set” commands can refer to any key including objects or arrays. However, if writing multiple objects, the entire “set” message must fit into a single UDP packet.

“set” operations have three mutually exclusive forms: by value, by adjustment, and by adjustment with wrapping.

- “value” takes the literal value to set the parameter to
- “adjust” takes an increment (positive or negative) to adjust the value by. Adjusting past the minimum or maximum values sets to those values.
- “adjust_wrap” acts the same as “adjust”, but wraps rather than saturating at a limit.

The “adjust” and “adjust_wrap” variants are only defined for boolean, integer, number, and enumerated types. Enumerated types always take an integer increment, positive values moving to subsequent entries in the list and negative values moving to previous entries.

For “adjust” and “adjust_wrap”, boolean values are treated as enumerated values: {“adjust”: 1} behaves like {“set”: true}, {“adjust”: -1} behaves like {“set”: false}, {“adjust_wrap”: 1} toggles the parameter.

***Note:** A set command can operate on a read-only object that contains writable values, provided only the writable fields are touched. Set commands that attempt to operate on read-only values will return an error. The read-only check is only performed on scalar (non array/object) values.

Command Example:

```
{“set”: “TARGET_PTR”, “value”: “SET_VALUE”}  
  
{“set”: “TARGET_PTR”, “adjust”: “ADJUST_VALUE”}  
  
{“set”: “TARGET_PTR”, “adjust_wrap”: “ADJUST_WRAP_VALUE”}
```

“TARGET_PTR” is the JSON pointer from the original command.

“SET_VALAUE”, “ADJUST_VALE” and “ADJUST_WRAP” values are complete structures describing the data to be written.

Response Example:

The response to a set command includes the parameter pointer and the values that were applied. Note that these values may differ slightly from those in the set command due to rounding.

```
{“result”=>“OK”, “cmd”=>“set”, “param”=>TARGET_PTR, “value”: “PARAM_VALUE”}  
  
{“set”: “/config/outputs/0/volume”, “value”: -12} ...output 0 volume is set to -12...  
  
{“set”: “/config/outputs/0/volume”, “adjust”: 2} ...output 0 volume is adjusted by 2...
```

Tokens

All commands may optionally include a "token" value of up to 32 characters which, if supplied, is simply returned in the response. The sender may supply a unique token to serve a similar purpose as a sequence number and/or allow tracking of the state of a sequence of operations.

Get Command with Token

Command Example:

```
{"get": TARGET_PTR, "token": TOKEN}
```

Response Example:

```
{"result": "OK", "token": "TOKEN", "cmd": "get", "param": "TARGET_PTR", "value": "PARAM_VALUE"}
```

`TARGET_PTR` is a JSON pointer to the desired parameter. There are no additional parameters.

Set Command with Token

Command Example:

```
{"set": "TARGET_PTR", "value": SET_VALUE, "token": "TOKEN"}
```

```
{"set": "TARGET_PTR", "adjust": "ADJUST_VALUE", "token": "TOKEN"}
```

```
{"set": "TARGET_PTR", "adjust_wrap": "ADJUST_VALUE", "token": "TOKEN"}
```

Response Example:

```
{"result": "OK", "token": "TOKEN", "cmd": "set", "param": "TARGET_PTR", "value": PARAM_VALUE}
```

Errors

Successful commands return a result of "OK", unsuccessful commands return a result of "ERROR", with the token, command ("set", "get"), and the parameter passed to the command (the JSON key).

Axon JSON Control Data Model

At the top level, the device data model is divided into "info", "status", "system", "preset", and "control" sections.

- `/info`: Read-only static device information, such as vendor ID or MAC addresses. This section is the same for all devices.
- `/status`: Read-only runtime device status information: uptime, IP addresses, etc.
- `/system`: System-wide configuration parameters. These parameters are automatically saved to flash.
- `/preset`: Configuration parameters that can be stored or restored from presets. These are loaded from preset 0 at startup and are not automatically saved. These can be saved to or loaded from the preset slots by writes to `/control/save_preset` and `/control/load_preset`.
- `/control`: Non-persistent settings and special action-trigger fields.

This section documents the portions of the Axon control/data model that are common to all Axon family devices utilizing the JSON style API.

`/info`

Static read-only device information

Pointer	Type	Format	Description
<code>/info</code>	object		
<code>/info/product_name</code>	string	Max 32 characters	Plain text product name
<code>/info/product_id</code>	string	16 hexadecimal digits (0-9, a-f)	Numeric product ID
<code>/info/vendor_id</code>	string	Max 32 characters	Plain text vendor ID
<code>/info/protocol_version</code>	string	Version format: x.y	Numeric protocol version
<code>/info/data_model</code>	string		Data model name/version. Example: "product_data_model_1.0.json"
<code>/info/bootloader_version</code>	string	Version format: x.y	Numeric control processor bootloader version
<code>/info/mcu_version</code>	string	Version format: x.y	Numeric control processor firmware version
<code>/info/aes67_version</code>	string	Version format: x.y	Numeric AES67 processor firmware version
<code>/info/hw_version</code>	string	Version format: x.y	Hardware version
<code>/info/mcu_mac</code>	string	6 colon-separated octets: "xx:xx:xx:xx:xx:xx"	MAC address of control processor.
<code>/info/aes67_mac</code>	string	6 colon-separated octets: "xx:xx:xx:xx:xx:xx"	MAC address of AES67 processor

The `/info/data_model` field specifies a versioned file name for the data model schema. The data model schema provides sufficient information for a program to simulate control of a device with minor manual coding to implement any special cases or needed side effects.

/control

Common static writable common device information

Pointer	Type	Format	Description
/control	object		
/control/reboot	boolean	true, false	Setting to any value initiates a reboot.
/control/defaults	boolean	true, false	Setting to any value resets all device parameters (system and all presets) to defaults.
/control/identify	boolean	true, false	Controls the identify functionality (typically blinking the power LED).
/control/fwdl			Reserved
/control/fwupdate			Reserved
/control/mfg_cmd			Reserved
/control/req_metering	integer	Range: 0 to 2147483647	Request N metering updates. Updates are sent at 10 Hz. This field can be read to determine how many updates remain to be sent.
/control/load_preset	integer	Range: 0 to 9	Setting to an integer value will load the specified preset. (Preset 0 is loaded at startup)
/control/save_preset	integer	Range: 0 to 9	Setting to an integer value will save the current settings to the specified preset.

Network Audio Receive Routing

Routing audio from (subscribing to) an AES67 stream is done by configuring a receive channel in `/system/aes67/rx_uris` with a [URI](#) specifying the desired AES67 stream and channel. After being configured with a `mcast://` URI, the device watches the network for a SAP message matching the specified multicast address and port. Once such a message is received, it configures the AES67 receivers to receive that stream and route the desired channel to the output. Clearing the routing is done by setting the URI to a blank string.

The URI is of the format:

```
mcast://HOSTNAME
mcast://HOSTNAME/SOURCE_NAME#CHANNEL
```

For a multicast stream, the hostname is the destination IP address of the stream in A.B.C.D format. The hostname may optionally include a port followed by a colon (the default multicast port is 5004). CHANNEL selects the stream channel to be routed to the output being configured. The default channel selection is channel 0. The hostname may be a domain name if DNS is configured to provide one. The source name is ignored for destination-routed multicast streams, but may be specified to provide a more human-readable name.

Example URIs:

- `mcast://239.69.2.3` (default channel selection is channel 0)
- `mcast://239.69.2.3#4`
- `mcast://239.69.2.3/`
- `mcast://239.69.2.3:5004`
- `mcast://239.69.2.3:5004/#3`
- `mcast://239.69.2.3:5004/by-name/Example%20Stream`
- `mcast://239.69.2.3:5004/by-name/Example%20Stream#3`

Example configuration commands:

Route channel 2 from multicast stream with destination address 239.69.0.103 to output 0:

```
{ "set": "/system/aes67/rx_uris/0", "value": "mcast://239.69.0.103/#2" }
^                                     ^^^^^^^^^^^^^^^^^ ^^^
                                     (hardware output)           |           (ch. index)
                                                                    (stream address)
```

Clear the above routing:

```
{ "set": "/system/aes67/rx_uris/0", "value": "" }
```

Network Audio Transmit Routing

Transmit streams can be configured via `/system/aes67/streams`. These are multicast if `"mcast_ip"` is set to a valid multicast IP and `"mcast_enable"` is set to true. The channels are selected by setting their indices in the `/system/aes67/streams/X/channels/` key (where X is the transmit stream being used). Channels that are unused can be set to any value.

This could all be set individually or the entire stream can be setup using one single message. For example...

```
{ "set": "/system/aes67/streams/0", "value": { "mcast_enable": true, "num_channels": 5, "channels": [0, 1, 2, 3, 4, 0, 0, 0] } }
```

Sending this command configures stream 0 (the first available stream) to be enabled (`mcast_enable=true`), sets the number of channels in the stream to 5 (`num_channels = 5`) and sets the desired channels to be the first five networked output channels from the matrix mixer in order (`Channels = [0, 1, 2, 3, 4, 0, 0]`).

Command Examples

Command: Get MCU MAC

```
{"get":"/info/mcu_mac"}
```

Response:

```
{"result":"OK","cmd":"get","param":"/info/mcu_mac","value":"00:1C:E2:00:00:00"}
```

Command: Mute output 0

```
{"set":"/preset/outputs/0/mute","value":true}
```

Response:

```
{"result":"OK","cmd":"set","param":"/preset/outputs/0/mute","value":true}
```

Configure multiple parameters for input 0:

```
{"set":"/preset/inputs/0","value":{"phantom_power":false,"digital_gain":-6,"mute":false}}
```

Response:

```
{"result":"OK","cmd":"set","param":"/preset/inputs/0","value":{"phantom_power":false,"digital_gain":-6,"mute":false}}
```


Product Specific APIs

The following sections provide detailed API information for each product.

A4FLEX

/info

See common section

/control

See common section

/status

Real time, read-only device status

Pointer	Type	Format	Description
/status	object		
/status/change_counter	integer	Range: -2147483648 to 2147483647	Increments every time changes are made. Can be used by control software to detect configuration changes made by other parties.
/status/state	enum	"running", "updating", "error"	Application status
/status/post	integer	Range: -2147483648 to 2147483647	Power on self test error codes
/status/uptime	integer	Range: 0 to 2147483647	Time since boot in seconds
/status/mcu_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Blank if in "switched" mode. IP address of control interface in "independent" mode
/status/aes67_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Current IP address of audio network interface
/status/ptp_offset			Reserved
/status/ptp_master	string	8 colon-separated octets: "xx:xx:xx:ff:fe:xx:xx:xx"	PTP master address
/status/power	enum	"PoE", "PoE+", "auxiliary"	Power source
/status/voltages	object		
/status/voltages/v_aux	number	Range 0.000000 to 100.000000	Aux power voltage
/status/voltages/v_poe	number	Range 0.000000 to 100.000000	PoE power voltage
/status/voltages/v_12v	number	Range 0.000000 to 100.000000	+12V power voltage
/status/voltages/v_5v	number	Range 0.000000 to 100.000000	+5V power voltage
/status/amp_fault	boolean	true, false	Amplifier fault on one or both channels (shorted output, over-temp).
/status/logic_in/0..3	boolean	true, false	State of logic inputs

/system

Pointer	Type	Format	Description
/system	object		
/system/device_name	string	Max Len: 32 characters	
/system/network_mode	enum	"switched", "independent"	Ethernet port setup - "switched" (both ports on same network) or "independent" (ports on separate networks)
/system/ctrl_network	object		Network settings for control interface. Only used if device is in "independent" mode.
/system/ctrl_network/ip_mode	enum	"static", "DHCP"	IP address mode for control network interface
/system/ctrl_network/static_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Static IP address used for control network interface when in "static" mode. Any value set is retained if interface is switched to "DHCP" mode but not used.
/system/ctrl_network/static_gateway	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Default gateway for control network interface
/system/ctrl_network/static_netmask	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Subnet mask for control network interface
/system/aes67_network	object		
/system/aes67_network/ip_mode	enum	"static", "DHCP"	IP address mode for audio network interface
/system/aes67_network/static_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Static IP address used for audio network interface when in "static" mode. Any value set is retained if interface is switched to "DHCP" mode but not used.
/system/aes67_network/static_gateway	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Default gateway for audio network interface
/system/aes67_network/static_netmask	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Subnet mask for audio network interface
/system/aes67	object		
/system/aes67/qos/	object		
/system/aes67/qos/audio	integer	Range: 0 to 127	DSCP tag settings for audio packets. Default is 34. Audinate-compatible setting is 46
/system/aes67/qos/ptp	integer	Range: 0 to 127	DSCP tag settings for audio packets. Default is 46. Audinate-compatible setting is 56
/system/aes67/ptp	object		
/system/aes67/ptp/domain	integer	Range: 0 to 127	PTP clock domain. Default is 0. Should match other devices on same audio system.
/system/aes67/ptp/priority1	integer	Range: 0 to 255	PTP clock priority 1. Default is 254. The lower the number, the higher the priority.
/system/aes67/ptp/priority2	integer	Range: 0 to 255	PTP clock priority 2. Default is 128. The lower the number, the higher the priority.
/system/aes67/rx_uris/0..15	string	See "Network Section"	URIs defining stream and channel selection for each AES67 receive channel.
/system/aes67/tx_channels/0..15	string	Max Len: 32	Single-channel stream names for each AES67 audio source.
/system/aes67/streams/0..7	object		
/system/aes67/streams/0..7/name	string	Max Len: 32	Stream name (should be unique)
/system/aes67/streams/0..7/num_channels	integer	Range: 0 to 8	Number of channels in the given stream
/system/aes67/streams/0..7/channels/0..7	integer	Range 0 to 15	Values representing which mixer outputs to include in the stream
/system/aes67/streams/0..7/mcast_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Multicast IP address of stream
/system/aes67/streams/0..7/mcast_enable	boolean	true, false	Multicast enable
/system/function_gen/	object		
/system/function_gen/enable	boolean	true, false	Function generator enable
/system/function_gen/frequency	integer	Range: 10 to 20000	Function generator frequency (Hz)

/system/function_gen/amplitude	integer	Range: -100 to 0	Function generator amplitude (dB)
/system/flex_io_modes/0..1	enum	"input", "output"	I/O mode for flex IO ports ("0" represents channel 3 and "1" represents channel 4)
/system/daisy_power	boolean	true, false	

/preset

Pointer	Type	Format	Description
/preset	object		
/preset/logic_out/0..7	boolean	true, false	
/preset/logic_in/0..3	object		
/preset/logic_in/0..3/ip	string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Logic event message IP (set to "auto" to autoconfigure)
/preset/logic_in/0..3/port	integer	Range: 0 to 65535	Logic event message port
/preset/logic_in/0..3/on_rise	object		
/preset/logic_in/0..3/on_rise/action	enum	"none", "send_udp", "send_udp_bin", "send_tcp", "send_tcp_bin", "local_cmd"	Action type
/preset/logic_in/0..3/on_rise/data	string	Max length: 128 characters	Logic input "on rise" event message
/preset/logic_in/0..3/on_fall	object		
/preset/logic_in/0..3/on_fall/action	enum	"none", "send_udp", "send_udp_bin", "send_tcp", "send_tcp_bin", "local_cmd"	Action type
/preset/logic_in/0..3/on_fall/data	string	Max length: 128 characters	Logic input "on fall" event message
/preset/inputs/0..3	object		
/preset/inputs/0..3/gain	number	Range: -8.0 to 34.0	Input gain
/preset/inputs/0..3/pad	enum	"none", "8dB"	Input pad
/preset/inputs/0..3/phantom_power	boolean	true, false	Input phantom power
/preset/inputs/0..3/mute	boolean	true, false	Input mute
/preset/outputs/0..3	object		
/preset/outputs/0..3/gain	number	Range: -127 to 0	Output gain (dB)
/preset/outputs/0..3/pad	enum	"none", "40dB"	Output pad (outputs 3 and 4 only)
/preset/outputs/0..3/mute	boolean		Output mute
/preset/usb	object		
/preset/usb/mode	enum	"2x2"	Only one mode currently supported
/preset/usb/sample_size	enum	"16", "24"	USB sample size

/preset/dsp

Pointer	Type	Format	Description
/preset/dsp	object		
/preset/dsp/analog_in/0..3	object		
/preset/dsp/analog_in/0..3/invert	boolean	true, false	Input Invert
/preset/dsp/analog_in/0..3/gain	number	Range: -100.0 to 20.0	Input gain (dB)
/preset/dsp/analog_in/0..3/mute	boolean	true, false	Input mute
/preset/dsp/analog_in/0..3/lpf	object		
/preset/dsp/analog_in/0..3/lpf/enable	boolean	true, false	When disabled, filter is bypassed
/preset/dsp/analog_in/0..3/lpf/mode	enum	"12dB"	Low-pass filter mode. Only one value currently supported
/preset/dsp/analog_in/0..3/lpf/freq	integer	Range: 1 to 24000	Low-pass filter frequency (Hz)
/preset/dsp/analog_in/0..3/hpf	object		
/preset/dsp/analog_in/0..3/hpf/enable	boolean	true, false	When disabled, filter is bypassed
/preset/dsp/analog_in/0..3/hpf/mode	enum	"12dB"	High-pass filter mode. Only one value currently supported
/preset/dsp/analog_in/0..3/hpf/freq	integer	Range: 1 to 24000	High-pass filter frequency (Hz)
/preset/dsp/analog_in/0..3/peq/0..2	object		
/preset/dsp/analog_in/0..3/peq/0..2/enable	boolean	true, false	When disabled, filter is bypassed
/preset/dsp/analog_in/0..3/peq/0..2/gain	number	Range: -100.0 to 20.0	Parametric EQ gain (dB)
/preset/dsp/analog_in/0..3/peq/0..2/freq	integer	Range: 1 to 24000	Parametric EQ frequency (Hz)
/preset/dsp/analog_in/0..3/peq/0..2/q	number	Range: 0.1 to 3.0	Parametric EQ Q value
/preset/dsp/aes67_in/0..15	object		
/preset/dsp/aes67_in/0..15/invert	boolean	true, false	Input invert
/preset/dsp/aes67_in/0..15/gain	number	Range: -100.0 to 20.0	Input gain (dB)
/preset/dsp/aes67_in/0..15/mute	boolean	true, false	Input mute
/preset/dsp/usb_in/0..7	object		
/preset/dsp/usb_in/0..7/invert	boolean	true, false	Input invert
/preset/dsp/usb_in/0..7/gain	number	Range: -100.0 to 20.0	Input gain (dB)
/preset/dsp/usb_in/0..7/mute	boolean	true, false	Input mute
/preset/dsp/analog_out/0..3	object		
/preset/dsp/analog_out/0..3/gain	number	Range: -100.0 to 20.0	Output gain (dB)
/preset/dsp/analog_out/0..3/mute	boolean	true, false	Output mute
/preset/dsp/analog_out/0..3/lpf	object		
/preset/dsp/analog_out/0..3/lpf/enable	boolean	true, false	When disabled, filter is bypassed
/preset/dsp/analog_out/0..3/lpf/mode	enum	"12dB"	Low-pass filter mode. Only one value currently supported
/preset/dsp/analog_out/0..3/lpf/freq	integer	Range: 1 to 24000	Low-pass filter corner frequency (Hz)
/preset/dsp/analog_out/0..3/hpf	object		
/preset/dsp/analog_out/0..3/hpf/enable	boolean	true, false	When disabled, filter is bypassed

/preset/dsp/analog_out/0..3/hpf/mode	enum	"12dB"	High-pass filter mode. Only one value currently supported
/preset/dsp/analog_out/0..3/hpf/freq	integer	Range: 1 to 24000	Low-pass filter corner frequency (Hz)
/preset/dsp/analog_out/0..3/peq/0..2	object		
/preset/dsp/analog_out/0..3/peq/0..2/enable	boolean	true, false	When disabled, filter is bypassed
/preset/dsp/analog_out/0..3/peq/0..2/gain	number	Range: -100.0 to 20.0	Parametric EQ filter gain (dB)
/preset/dsp/analog_out/0..3/peq/0..2/freq	integer	Range: 1 to 24000	Parametric EQ filter corner frequency (Hz)
/preset/dsp/analog_out/0..3/peq/0..2/q	number	Range: 0.1 to 3.0	Parametric EQ filter Q value
/preset/dsp/analog_out/0..3/limiter	object		
/preset/dsp/analog_out/0..3/limiter/enable	boolean	true, false	When disabled, limiter is bypassed
/preset/dsp/analog_out/0..3/limiter/threshold	number	Range: -100.0 to 20.0	Threshold for operation from auxiliary power or PoE+ (dB)
/preset/dsp/aes67_out/0..15	object		
/preset/dsp/aes67_out/0..15/limiter	object		
/preset/dsp/aes67_out/0..15/limiter/enable	boolean	true, false	When disabled, limiter is bypassed
/preset/dsp/aes67_out/0..15/limiter/threshold	number	Range: -100.0 to 20.0	Threshold for operation from auxiliary power or PoE+ (dB)
/preset/dsp/usb_out/0..7	object		
/preset/dsp/usb_out/0..7/gain	number	Range: -100.0 to 20.0	USB output (host input) gain (dB)
/preset/dsp/usb_out/0..7/mute	boolean	true, false	USB output (host input) mute
/preset/dsp/usb_out/0..7/limiter	object		
/preset/dsp/usb_out/0..7/limiter/enable	boolean	true, false	When disabled, limiter is bypassed
/preset/dsp/usb_out/0..7/limiter/threshold	number	Range: -100.0 to 20.0	Threshold for operation from auxiliary power or PoE+ (dB)
/preset/dsp/mixer_gains/0..27/0..28	number	Range: -100.0 to 20.0	Mixer crosspoint level (dB)
/preset/dsp/mixer_mutes/0..27/0..28	boolean	true, false	

A4MIO / A8MIO

/info

See common section

/control

See common section

/status

Pointer	Type	Format	Description
/status	object		
/status/change_counter	integer	Range: -2147483648 to 2147483647	Increments every time changes are made. Can be used by control software to detect configuration changes made by other parties.
/status/state	enum	"running", "updating", "error"	
/status/post	integer	Range: -2147483648 to 2147483647	Power on self test
/status/uptime	integer	Range: 0 to 2147483647	Time since boot in seconds
/status/mcu_ip	string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Blank if in "switched" mode. IP address of control interface in "independent" mode
/status/aes67_ip	string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Current IP address of audio network interface
/status/ptp_offset	integer		Reserved
/status/ptp_master	string	8 colon-separated octets: "xx:xx:xx:ff:fe:xx:xx:xx"	PTP master address
/status/power	enum	("PoE", "PoE+", "auxiliary")	Power source
/status/voltages	object		
/status/voltages/v_aux	number	Range: 0.00 to 100.00	Aux power voltage
/status/voltages/v_poe	number	Range: 0.00 to 100.00	PoE power voltage
/status/voltages/v_12v	number	Range: 0.00 to 100.00	+12V power voltage
/status/voltages/v_5v	number	Range: 0.00 to 100.00	+5V power voltage

/system

Pointer	Type	Format	Description
/system	object		
/system/device_name	string	Max Len: 32	
/system/network_mode	enum	"switched", "independent"	Ethernet port setup - "switched" (both ports on same network) or "independent" (ports on separate networks)
/system/ctrl_network	object		Network settings for control interface. Only used if device is in "independent" mode.
/system/ctrl_network/ip_mode	enum	"static", "DHCP"	IP address mode for control network interface
/system/ctrl_network/static_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Static IP address used for control network interface when in "static" mode. Any value set is retained if interface is switched to "DHCP" mode but not used.
/system/ctrl_network/static_gateway	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Default gateway for control network interface
/system/ctrl_network/static_netmask	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Subnet mask for control network interface
/system/aes67_network	object		
/system/aes67_network/ip_mode	enum	"static", "DHCP"	IP address mode for audio network interface
/system/aes67_network/static_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Static IP address used for audio network interface when in "static" mode. Any value set is retained if interface is switched to "DHCP" mode but not used.
/system/aes67_network/static_gateway	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Default gateway for audio network interface
/system/aes67_network/static_netmask	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Subnet mask for audio network interface
/system/aes67	object		
/system/aes67/qos/	object		
/system/aes67/qos/audio	integer	Range: 0 to 127	DSCP tag settings for audio packets. Default is 34. Audinate-compatible setting is 46
/system/aes67/qos/ptp	integer	Range: 0 to 127	DSCP tag settings for audio packets. Default is 46. Audinate-compatible setting is 56
/system/aes67/ptp	object		
/system/aes67/ptp/domain	integer	Range: 0 to 127	PTP clock domain. Default is 0. Should match other devices on same audio system.
/system/aes67/ptp/priority1	integer	Range: 0 to 255	PTP clock priority 1. Default is 254. The lower the number, the higher the priority.
/system/aes67/ptp/priority2	integer	Range: 0 to 255	PTP clock priority 2. Default is 128. The lower the number, the higher the priority.
/system/aes67/rx_uris/0..15	string	See "Network Section"	URIs defining stream and channel selection for each AES67 receive channel.
/system/aes67/tx_channels/0..15	string	Max Len: 32	Single-channel stream names for each AES67 audio source.
/system/aes67/streams/0..7	object		
/system/aes67/streams/0..7/name	string	Max Len: 32	Stream name (should be unique)
/system/aes67/streams/0..7/num_channels	integer	Range: 0 to 8	Number of channels in the given stream
/system/aes67/streams/0..7/channels/0..7	integer	Range: 0 to 15	Values representing which mixer outputs to include in the stream
/system/aes67/streams/0..7/mcast_ip	IP string	xxx.yyy.aaa.bbb where x, y, a, b are 0 to 255	Multicast IP address of stream
/system/aes67/streams/0..7/mcast_enable	boolean	true, false	Multicast enable
/system/function_gen/	object		
/system/function_gen/enable	boolean	true, false	Function generator enable
/system/function_gen/frequency	integer	Range: 10 to 20000	Function generator frequency (Hz)

/system/function_gen/amplitude	integer	Range: -100 to 0	Function generator amplitude (dB)
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/preset

***Note:** Parameters in this section are limited to the number of IO the device. For the A4MIO, the range will be "0..3". For the A8MIO, the range will be "0..7".

Pointer	Type	Format	Description
/preset	object		Device preset configuration
/preset/inputs/0..x	object		
/preset/inputs/0..x/gain	number	Range: -8.0 to 34.0	Input gain
/preset/inputs/0..x/pad	enum	"none", "8dB"	Input pad
/preset/inputs/0..x/phantom_power	boolean	true, false	Input phantom power
/preset/inputs/0..x/mute	boolean	true, false	Input mute
/preset/outputs/0..x	object		
/preset/outputs/0..x/gain	number	Range: -127 to 0	Output gain (dB)
/preset/outputs/0..x/pad	enum	"none", "40dB"	Output pad (outputs 3 and 4 only)
/preset/outputs/0..x/mute	boolean	true, false	Output mute