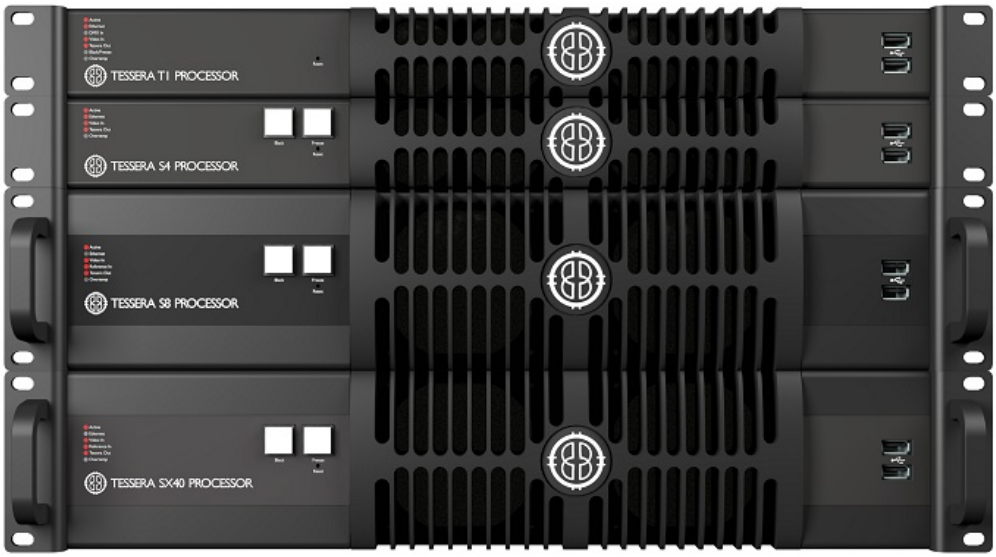
TESSERA PROCESSING IP CONTROL API

SOFTWARE VERSION: 3.1.4



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1. INTRODUCTION

As of version 3.1.0 Tessera processors support remote query and control/triggering functionality over a variety of IP-based protocols via a filesystem-like, RESTful API. This document describes how to access the information available and the format in which it is presented.

The API currently focuses on functionality needed for runtime control of the processor, it does not seek to offer all functions of the processor UI. More functionality will be added in future releases.

In order to use IP control it must be enabled in the Live Control tile in the processor user interface. The processor on the client must be on the same network and have a compatible IP address configuration.

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SUPPORTED PROTOCOLS

The following protocols are supported by the Tessera API:

- **HTTP** - standard requests via an HTTP client (e.g. web browser)
- **Commandline TCP socket** - Telnet-style text-based commands sent over TCP

Examples of use of each protocol are detailed after the generic control section. All paths, tags and commands are case-insensitive for all protocols.

2. API

DATA TYPES

The following endpoint data types are supported:

- **string**: text string of up to 128 UTF-8 encoded characters
- **bool**: boolean state, true or false
- **integer**: signed 16-bit integer, range -32768 to 32767
- **float**: floating point value
- **enum**: string enumeration representing one of a discrete set of possible values

COMMANDS

- **get**: get one or more endpoints' value(s)
- **set**: set an endpoint or group of endpoints' value(s)
- **list**: show a summary of available endpoints starting from any position in the API tree
- **help**: show help text for an endpoint or directory detailing what the endpoint represents, access specifier, data format and range

Examples of each command are given in the protocol section.

ACCESS SPECIFIERS

The following access specifiers are supported:

- **R/W**: the endpoint is both readable and writable
- **R/O**: the endpoint is read-only and may not be written to
- **W/O**: the endpoint is write-only and may not be read

ERRORS

The following errors may be returned as the result of a command operation:

- **Path not found**: the requested endpoint path was not recognised
- **Bad operation**: operation was not valid, e.g. trying to set a read-only endpoint
- **Not supported**: not supported by the hardware platform or not yet implemented
- **Missing input parameter**: required input parameters are missing or malformed
- **Bad input parameter type**: one of the input parameters had an incorrect type or format
- **Bad input parameter value**: one of the input parameters had an invalid/out of range value
- **Access denied**: insufficient privilege level for the requested operation
- **No project loaded**: the target processor does not have a project loaded
- **Object not found**: the requested object (e.g. panel) was not found
- **Operation failed**: general runtime failure

DYNAMIC PATHS

Some paths in the API are dynamic in that they depend on the project configuration. For example, accessing group properties depends on what groups have been created in the project. The dynamic sections in the tree are marked with brackets, for example {number}.

3. FULL ENDPOINT REFERENCE

API TREE STRUCTURE

```
api/
    devices/
        items/
            {serial}/
                type
        statistics/
            associated-count
            error-count
            online-count
    groups/
        items/
            {number}/
                brightness
                colour-temperature
                dark-magic/
                    enabled
                gains/
                    blue
                    green
                    intensity
                    red
                gamma
                global-colour-override
                global-gains-override
                name
                puretone/
                    enabled
    input/
        active/
            refresh-rate
            resolution/
                height
                width
            source/
                port-number
                port-type
    output/
        global-colour/
            brightness
            colour-temperature
            dark-magic/
                enabled
            gains/
                blue
                green
                intensity
                red
            gamma
            puretone/
                enabled
        network/
            bit-depth
            cable-redundancy/
                loops/
                    {loop-number}/
                        state
            failover/
```

```
            settings/
               enabled
               modes/
                  on-button-press
                  on-partner-fail
                  on-partner-video-fail
                  prefer-primary
               role
            state/
               is-active
               is-partner-present
               partner-absence-duration
               partner-name
               partner-serial
               partner-video-absence-duration
         frame-rate-multiplier
         frame-remapping/
            frames/
               {frame}/
                  blue
                  green
                  mode
                  red
                  x-offset
                  y-offset
override/
   blackout/
      enabled
      fade-time
   freeze/
      enabled
   test-pattern/
      enabled
      format
      type
presets/
   active/
      name
      number
   items/
      {number}/
         name
         status
processing/
   colour-correct/
      black/
         blue
         green
         red
      blue/
         brightness
         hue
         saturation
      cobalt/
         brightness
         hue
         saturation
      crimson/
         brightness
         hue
         saturation
      cyan/
         brightness
         hue
```

```
            saturation
        enabled
        green/
            brightness
            hue
            saturation
        lime/
            brightness
            hue
            saturation
        magenta/
            brightness
            hue
            saturation
        orange/
            brightness
            hue
            saturation
        red/
            brightness
            hue
            saturation
        turquoise/
            brightness
            hue
            saturation
        violet/
            brightness
            hue
            saturation
        white/
            blue
            green
            red
        yellow/
            brightness
            hue
            saturation
    colour-replace/
        enabled
    curves/
        enabled
    osca/
        module-correction-enabled
        seam-correction-enabled
    scaler/
        enabled
system/
    current-date-time
    processor-type
    software-version
    uptime
```

ENDPOINTS DESCRIPTION

DEVICES

DEVICE TYPE

Path: **devices/items/{serial}/type**
Description: Device type name
Data type: string
Access Specifier: ReadOnly

ASSOCIATED DEVICES COUNT

Path: **devices/statistics/associated-count**
Description: The number of devices currently being controlled by the processor
Data type: int
Range: 0 - 2200
Access Specifier: ReadOnly

ERROR DEVICES COUNT

Path: **devices/statistics/error-count**
Description: The number of online devices currently reporting an error state
Data type: int
Range: 0 - 2048
Access Specifier: ReadOnly

ONLINE DEVICE COUNT

Path: **devices/statistics/online-count**
Description: The number of online devices currently detected by the processor
Data type: int
Range: 0 - 2048
Access Specifier: ReadOnly

GROUPS

GROUP BRIGHTNESS

Path: **groups/items/{number}/brightness**
Description: Gets or sets the group output brightness/luminance
Data type: int
Range: 0 - 10000
Access Specifier: ReadWrite

GROUP COLOUR TEMPERATURE

Path: **groups/items/{number}/colour-temperature**
Description: Gets or sets the group colour temperature
Data type: int
Range: 2000 - 11000
Access Specifier: ReadWrite

GROUP DARK MAGIC ENABLED

Path: **groups/items/{number}/dark-magic/enabled**
Description: Enables or disables group Dark Magic
Data type: bool
Access Specifier: ReadWrite

GROUP BLUE GAIN

Path: **groups/items/{number}/gains/blue**
Description: Gets or sets the value of the group blue gain
Data type: float

Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

GROUP GREEN GAIN

Path: **groups/items/{number}/gains/green**
Description: Gets or sets the value of the group green gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

GROUP INTENSITY GAIN

Path: **groups/items/{number}/gains/intensity**
Description: Gets or sets the value of the group intensity gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

GROUP RED GAIN

Path: **groups/items/{number}/gains/red**
Description: Gets or sets the value of the group red gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

GROUP OUTPUT GAMMA

Path: **groups/items/{number}/gamma**
Description: Gets or sets the group gamma value
Data type: float
Range: 0.2 - 4.0
Decimal places: 2
Access Specifier: ReadWrite

GROUP GLOBAL COLOUR OVERRIDE

Path: **groups/items/{number}/global-colour-override**
Description: Enables or disables group global colour override
Data type: bool
Access Specifier: ReadWrite

GROUP GLOBAL GAINS OVERRIDE

Path: **groups/items/{number}/global-gains-override**
Description: Enables or disables group global gains override
Data type: bool
Access Specifier: ReadWrite

GROUP NAME

Path: **groups/items/{number}/name**
Description: Gets or sets the group name
Data type: string
Access Specifier: ReadWrite

GROUP PURE TONE ENABLED

Path: **groups/items/{number}/puretone/enabled**
Description: Enables or disables group PureTone
Data type: bool
Access Specifier: ReadWrite

INPUT

INPUT REFRESH RATE

Path: **input/active/refresh-rate**
Description: Active video input refresh rate
Data type: float
Range: 24 - 250
Decimal places: 1
Access Specifier: ReadOnly

INPUT RESOLUTION HEIGHT

Path: **input/active/resolution/height**
Description: Active video input height
Data type: int
Range: 32 - 4095
Access Specifier: ReadOnly

INPUT RESOLUTION WIDTH

Path: **input/active/resolution/width**
Description: Active video input width
Data type: int
Range: 32 - 4096
Access Specifier: ReadOnly

INPUT PORT NUMBER

Path: **input/active/source/port-number**
Description: Which physical port instance is currently enabled for video input. For example, SDI A = port 1, SDI B = port 2. The available number of port instances for any port type will vary based on the processor hardware variant.
Data type: int
Range: 1 - 2
Access Specifier: ReadWrite

INPUT PORT TYPE

Path: **input/active/source/port-type**
Description: Which physical port instance is currently enabled for video input. The available types will vary based on the processor hardware variant.
Data type: enum
Supported values: dvi, hdmi, sdi
Access Specifier: ReadWrite

OUTPUT

OUTPUT BRIGHTNESS

Path: **output/global-colour/brightness**
Description: Write -1 to reset output brightness to calculated common maximum for available fixtures.
Data type: int
Range: -1 - 10000
Access Specifier: ReadWrite

OUTPUT COLOUR TEMPERATURE

Path: **output/global-colour/colour-temperature**
Description: Gets or sets the output colour temperature
Data type: int
Range: 2000 - 11000
Access Specifier: ReadWrite

DARK MAGIC ENABLED

Path: **output/global-colour/dark-magic/enabled**
Description: Enables or disables the processor's Dark Magic feature
Data type: bool
Access Specifier: ReadWrite

BLUE GAIN

Path: **output/global-colour/gains/blue**
Description: Gets or sets the value of the output blue gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

GREEN GAIN

Path: **output/global-colour/gains/green**
Description: Gets or sets the value of the output green gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

INTENSITY GAIN

Path: **output/global-colour/gains/intensity**
Description: Gets or sets the value of the output intensity gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

RED GAIN

Path: **output/global-colour/gains/red**
Description: Gets or sets the value of the output red gain
Data type: float
Range: 0 - 100
Decimal places: 2
Access Specifier: ReadWrite

OUTPUT GAMMA

Path: **output/global-colour/gamma**
Description: Gets or sets the value of the output gamma
Data type: float

Range: 0.2 - 4.0
Decimal places: 2
Access Specifier: ReadWrite

PURE TONE ENABLED

Path: **output/global-colour/puretone/enabled**
Description: Enables or disables PureTone
Data type: bool
Access Specifier: ReadWrite

NETWORK BIT DEPTH

Path: **output/network/bit-depth**
Description: Gets or sets bit depth of video output. Valid values are 8, 10, and 12
Data type: int
Range: 8 - 12
Access Specifier: ReadWrite

REDUNDANT CABLE LOOP STATE

Path: **output/network/cable-redundancy/loops/{loop-number}/state**
Description: Current state of cable loop redundancy on the processor
Data type: enum
Supported values: loop-found, no-loop-found, incorrect-loop-found, one-to-many-error
Access Specifier: ReadOnly

FAILOVER ENABLED

Path: **output/network/failover/settings/enabled**
Description: Enables or disables failover mode on the processor
Data type: bool
Access Specifier: ReadWrite

BUTTON PRESS FAILOVER MODE ENABLED

Path: **output/network/failover/settings/modes/on-button-press**
Description: Enables or disables failover to backup processor when the processor's Blackout/Freeze buttons are pushed
Data type: bool
Access Specifier: ReadWrite

PARTNER FAILOVER MODE ENABLED

Path: **output/network/failover/settings/modes/on-partner-fail**
Description: Enables or disables partner processor failover when processor failure is detected (e.g. the processor loses power)
Data type: bool
Access Specifier: ReadWrite

PARTNER VIDEO FAILOVER MODE ENABLED

Path: **output/network/failover/settings/modes/on-partner-video-fail**
Description: Enables or disables partner processor failover on video signal loss
Data type: bool
Access Specifier: ReadWrite

PREFER PRIMARY FAILOVER MODE ENABLED

Path: **output/network/failover/settings/modes/prefer-primary**
Description: If prefer primary processor failover mode is activated, when primary processor is functioning

correctly, it will be automatically always be the active processor
Data type: bool
Access Specifier: ReadWrite

FAILOVER ROLE

Path: **output/network/failover/settings/role**
Description: Is processor's failover role Primary or Backup
Data type: enum
Supported values: primary, backup
Access Specifier: ReadOnly

FAILOVER IS ACTIVE

Path: **output/network/failover/state/is-active**
Description: Whether failover is active on the processor
Data type: bool
Access Specifier: ReadOnly

FAILOVER PARTNER IS ONLINE

Path: **output/network/failover/state/is-partner-present**
Description: Whether the backup processor is currently online and detected
Data type: bool
Access Specifier: ReadOnly

FAILOVER PARTNER ABSENCE DURATION

Path: **output/network/failover/state/partner-absence-duration**
Description: How long the backup processor has been absent for
Data type: string
Access Specifier: ReadOnly

FAILOVER PARTNER NAME

Path: **output/network/failover/state/partner-name**
Description: Name of the backup processor
Data type: string
Access Specifier: ReadOnly

FAILOVER PARTNER SERIAL

Path: **output/network/failover/state/partner-serial**
Description: Serial number of the backup processor
Data type: string
Access Specifier: ReadOnly

FAILOVER PARTNER VIDEO ABSENCE DURATION

Path: **output/network/failover/state/partner-video-absence-duration**
Description: Time since backup processor video source was last detected
Data type: string
Access Specifier: ReadOnly

NETWORK FRAME RATE MULTIPLIER

Path: **output/network/frame-rate-multiplier**
Description: Gets or sets frame rate multiplier of video output. Set value to 1 to disable frame rate multiplication.
Data type: int
Range: 1 - 10

Access Specifier: ReadWrite

FRAME REMAPPING BLUE

Path: **output/network/frame-remapping/frames/{frame}/blue**
Description: Gets or sets blue value of frame colour
Data type: int
Range: 0 - 255
Access Specifier: ReadWrite

FRAME REMAPPING GREEN

Path: **output/network/frame-remapping/frames/{frame}/green**
Description: Gets or sets green value of frame colour
Data type: int
Range: 0 - 255
Access Specifier: ReadWrite

FRAME REMAPPING MODE

Path: **output/network/frame-remapping/frames/{frame}/mode**
Description: Is frame mode Colour or Video
Data type: enum
Supported values: colour, video
Access Specifier: ReadWrite

FRAME REMAPPING RED

Path: **output/network/frame-remapping/frames/{frame}/red**
Description: Gets or sets red value of frame colour
Data type: int
Range: 0 - 255
Access Specifier: ReadWrite

FRAME REMAPPING X OFFSET

Path: **output/network/frame-remapping/frames/{frame}/x-offset**
Description: Gets or sets x offset of frame
Data type: int
Range: -4095 - 4095
Access Specifier: ReadWrite

FRAME REMAPPING Y OFFSET

Path: **output/network/frame-remapping/frames/{frame}/y-offset**
Description: Gets or sets y offset of frame
Data type: int
Range: -4095 - 4095
Access Specifier: ReadWrite

OVERRIDE

BLACKOUT ENABLED

Path: **override/blackout/enabled**
Description: Enables or disables blackout
Data type: bool
Access Specifier: ReadWrite

BLACKOUT FADE TIME

Path: **override/blackout/fade-time**
Description: The value of the blackout fade time. The fade time may be adjusted between zero (snap) and 10 seconds
Data type: float
Range: 0.0 - 10.0
Decimal places: 1
Access Specifier: ReadWrite

FREEZE ENABLED

Path: **override/freeze/enabled**
Description: Enables or disables video freeze
Data type: bool
Access Specifier: ReadWrite

TEST PATTERN ENABLED

Path: **override/test-pattern/enabled**
Description: Enables or disables test pattern output function
Data type: bool
Access Specifier: ReadWrite

TEST PATTERN FORMAT

Path: **override/test-pattern/format**
Description: Format of the generated test pattern
Data type: enum
Supported values: from-input, standard-dynamic-range, perceptual-quantiser, hybrid-log-gamma
Access Specifier: ReadWrite

TEST PATTERN TYPE

Path: **override/test-pattern/type**
Description: Determines which test pattern to generate. Defaults to SMPTE bars
Data type: enum
Supported values: brompton, brompton-overlay, red, green, blue, cyan, magenta, yellow, white, black, grid, scrolling-grid, checkerboard, scrolling-checkerboard, colour-bars, gamma, gradient, scrolling-gradient, strobe, smpte-bars, scrolling-smpte-bars, custom, forty-five-degree-grid, scrolling-forty-five-degree-grid
Access Specifier: ReadWrite

PRESETS

ACTIVE PRESET NAME

Path: **presets/active/name**
Description: Name of the currently active preset
Data type: string
Access Specifier: ReadOnly

ACTIVE PRESET NUMBER

Path: **presets/active/number**
Description: Set to activate a preset
Data type: int
Range: 1 - 128
Access Specifier: ReadWrite

PRESET NAME

Path: **presets/items/{number}/name**
Description: Processor preset name
Data type: string
Access Specifier: ReadWrite

PRESET STATUS

Path: **presets/items/{number}/status**
Description: Preset activation status
Data type: bool
Access Specifier: ReadOnly

PROCESSING

14-WAY COLOUR CORRECT BLACK BLUE

Path: **processing/colour-correct/black/blue**
Description: Gets or sets the value of the black blue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT BLACK GREEN

Path: **processing/colour-correct/black/green**
Description: Gets or sets the value of the black green
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT BLACK RED

Path: **processing/colour-correct/black/red**
Description: Gets or sets the value of the black red
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT BLUE BRIGHTNESS

Path: **processing/colour-correct/blue/brightness**
Description: Gets or sets the value of the blue brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT BLUE HUE

Path: **processing/colour-correct/blue/hue**
Description: Gets or sets the value of the blue hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1

Access Specifier: ReadWrite

14-WAY COLOUR CORRECT BLUE SATURATION

Path: **processing/colour-correct/blue/saturation**
Description: Gets or sets the value of the blue saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT COBALT BRIGHTNESS

Path: **processing/colour-correct/cobalt/brightness**
Description: Gets or sets the value of the cobalt brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT COBALT HUE

Path: **processing/colour-correct/cobalt/hue**
Description: Gets or sets the value of the cobalt hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT COBALT SATURATION

Path: **processing/colour-correct/cobalt/saturation**
Description: Gets or sets the value of the cobalt saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT CRIMSON BRIGHTNESS

Path: **processing/colour-correct/crimson/brightness**
Description: Gets or sets the value of the crimson brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT CRIMSON HUE

Path: **processing/colour-correct/crimson/hue**
Description: Gets or sets the value of the crimson hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT CRIMSON SATURATION

Path: **processing/colour-correct/crimson/saturation**
Description: Gets or sets the value of the crimson saturation
Data type: float
Range: -100.0 - 100.0

Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT CYAN BRIGHTNESS

Path: **processing/colour-correct/cyan/brightness**
Description: Gets or sets the value of the cyan brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT CYAN HUE

Path: **processing/colour-correct/cyan/hue**
Description: Gets or sets the value of the cyan hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT CYAN SATURATION

Path: **processing/colour-correct/cyan/saturation**
Description: Gets or sets the value of the cyan saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT ENABLED

Path: **processing/colour-correct/enabled**
Description: Enables or disables the processor's 14-Way Colour Correct feature
Data type: bool
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT GREEN BRIGHTNESS

Path: **processing/colour-correct/green/brightness**
Description: Gets or sets the value of the green brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT GREEN HUE

Path: **processing/colour-correct/green/hue**
Description: Gets or sets the value of the green hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT GREEN SATURATION

Path: **processing/colour-correct/green/saturation**
Description: Gets or sets the value of the green saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1

Access Specifier: ReadWrite

14-WAY COLOUR CORRECT LIME BRIGHTNESS

Path: **processing/colour-correct/lime/brightness**
Description: Gets or sets the value of the lime brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT LIME HUE

Path: **processing/colour-correct/lime/hue**
Description: Gets or sets the value of the lime hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT LIME SATURATION

Path: **processing/colour-correct/lime/saturation**
Description: Gets or sets the value of the lime saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT MAGENTA BRIGHTNESS

Path: **processing/colour-correct/magenta/brightness**
Description: Gets or sets the value of the magenta brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT MAGENTA HUE

Path: **processing/colour-correct/magenta/hue**
Description: Gets or sets the value of the magenta hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT MAGENTA SATURATION

Path: **processing/colour-correct/magenta/saturation**
Description: Gets or sets the value of the magenta saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT ORANGE BRIGHTNESS

Path: **processing/colour-correct/orange/brightness**
Description: Gets or sets the value of the orange brightness
Data type: float
Range: -100.0 - 100.0

Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT ORANGE HUE

Path: **processing/colour-correct/orange/hue**
Description: Gets or sets the value of the orange hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT ORANGE SATURATION

Path: **processing/colour-correct/orange/saturation**
Description: Gets or sets the value of the orange saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT RED BRIGHTNESS

Path: **processing/colour-correct/red/brightness**
Description: Gets or sets the value of the red brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT RED HUE

Path: **processing/colour-correct/red/hue**
Description: Gets or sets the value of the red hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT RED SATURATION

Path: **processing/colour-correct/red/saturation**
Description: Gets or sets the value of the red saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT TURQUOISE BRIGHTNESS

Path: **processing/colour-correct/turquoise/brightness**
Description: Gets or sets the value of the turquoise brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT TURQUOISE HUE

Path: **processing/colour-correct/turquoise/hue**
Description: Gets or sets the value of the turquoise hue
Data type: float

Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT TURQUOISE SATURATION

Path: **processing/colour-correct/turquoise/saturation**
Description: Gets or sets the value of the turquoise saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT VIOLET BRIGHTNESS

Path: **processing/colour-correct/violet/brightness**
Description: Gets or sets the value of the violet brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT VIOLET HUE

Path: **processing/colour-correct/violet/hue**
Description: Gets or sets the value of the violet hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT VIOLET SATURATION

Path: **processing/colour-correct/violet/saturation**
Description: Gets or sets the value of the violet saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT WHITE BLUE

Path: **processing/colour-correct/white/blue**
Description: Gets or sets the value of the white blue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT WHITE GREEN

Path: **processing/colour-correct/white/green**
Description: Gets or sets the value of the white green
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT WHITE RED

Path: **processing/colour-correct/white/red**
Description: Gets or sets the value of the white red

Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT YELLOW BRIGHTNESS

Path: **processing/colour-correct/yellow/brightness**
Description: Gets or sets the value of the yellow brightness
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT YELLOW HUE

Path: **processing/colour-correct/yellow/hue**
Description: Gets or sets the value of the yellow hue
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

14-WAY COLOUR CORRECT YELLOW SATURATION

Path: **processing/colour-correct/yellow/saturation**
Description: Gets or sets the value of the yellow saturation
Data type: float
Range: -100.0 - 100.0
Decimal places: 1
Access Specifier: ReadWrite

COLOUR REPLACE ENABLED

Path: **processing/colour-replace/enabled**
Description: Enables or disables the processor's Colour Replace feature
Data type: bool
Access Specifier: ReadWrite

CURVES ENABLED

Path: **processing/curves/enabled**
Description: Enables or disables the processor's Colour Curves feature
Data type: bool
Access Specifier: ReadWrite

OSCA MODULE CORRECTION ENABLED

Path: **processing/osca/module-correction-enabled**
Description: Enables or disables OSCA module correction
Data type: bool
Access Specifier: ReadWrite

OSCA SEAM CORRECTION ENABLED

Path: **processing/osca/seam-correction-enabled**
Description: Enables or disables OSCA seam correction
Data type: bool
Access Specifier: ReadWrite

SCALER

Path: **processing/scaler/enabled**
Description: Enables or disables scaler
Data type: bool
Access Specifier: ReadWrite

SYSTEM

CURRENT DATE AND TIME

Path: **system/current-date-time**
Description: Current date/time of processor in yyyy-MM-dd hh:mm:ss 24 hour format
Data type: string
Access Specifier: ReadOnly

PROCESSOR TYPE

Path: **system/processor-type**
Description: Processor hardware model
Data type: enum
Supported values: m2, s4, s8, t1, t8, sx40
Access Specifier: ReadOnly

SOFTWARE VERSION

Path: **system/software-version**
Description: Current version of software in format x.y.z
Data type: string
Access Specifier: ReadOnly

UPTIME

Path: **system/uptime**
Description: Time since processor boot in DDd HHh MMm SSs format
Data type: string
Access Specifier: ReadOnly

4. PROTOCOL EXAMPLE USAGE

HTTP

IP Control functionality over HTTP on port 80 is accessed via the **/api** path root to distinguish it from other web services.

All commands are accessible via the regular HTTP verbs GET (for read, list and help operations) and PUT (for set). There is also query-parameter based support for accessing all operations exclusively via GET for older clients that do not support extra verbs.

PUT request body data is passed/returned in standard JSON object format. If a PUT request returns a MissingInputParam error, a likely cause is that the JSON of the request body is either malformed or missing.

GET

Use GET verb with target path. Example to get input video refresh rate:

```
    Client:
    GET http://SERVERADDRESS/api/input/active/refresh-rate

Server:
    HTTP/1.1 200 OK
    Content-Type: application/json
    { refresh-rate: 60 }
```

SET (ENDPOINT)

Use PUT verb including data to set in a "data" tag in a JSON body. Example to set output brightness:

```
Client:
    PUT http://SERVERADDRESS/api/output/global-colour/brightness
    Content-Type: application/json
    { "data": 5000 }

Server:
    HTTP/1.1 200 OK
    Content-Type: application/json
    { "brightness": 5000 }
```

Alternative using GET verb only: pass the value to set as a "set=" query parameter.

```
Client: GET http://SERVERADDRESS/api/output/global-colour/brightness?set=5000
```

SET (DIRECTORY)

Pass the directory path, set=1 and one or more endpoint subpath=value as query parameters. Example to switch video input source to first SDI port:

```
Client:
    PUT http://SERVERADDRESS/api/input/active/source
    Content-Type: application/json
    {
        "data" : {
            "port-type": "sdi",
            "port-number": 0
        }
    }

Server:
    HTTP/1.1 200 OK
    Content-Type: application/json
    {
        "source": {
```

```
                "port-type": "sdi",
                "port-number": 0
            }
        }
```

Alternative using GET verb only: pass "set=1" as a query parameter along with all endpoint subpaths/values to set.

```
    Client:
GET http://SERVERADDRESS/api/input/active/source?set=1&port-type=sdi&port-number=1
```

SET (MULTIPLE ENDPOINTS VIA JSON)

This is supported across the API. For example setting multiple Colour Correct endpoints in one go:

```
    Client:
        PUT http://SERVERADDRESS/api/processing/colour-correct
        Content-Type: application/json
        {
            "data": {
                "white": {
                    "red": 22,
                    "green": 23,
                    "blue": 24
                }
            }
        }

    Server:
        HTTP/1.1 200 OK
        Content-Type: application/json
        {
            "colour-correct": {
                "white": {
                    "blue": "24",
                    "green": "23",
                    "red": "22"
                }
            }
        }
```

LIST

Use GET verb passing "list=1" as a query parameter

```
     Client:
        GET http://SERVERADDRESS/api/override?list=1

    Server:
        HTTP/1.1 200 OK
        Content-Type: application/json
        {
           "override":{
              "blackout":{
                 "enabled":"Enable blackout",
                 "fade-time":"Time taken to fade to black when blackout enabled"
              },
              "freeze":{
                 "enabled":"Enable video freeze"
              },
              "test-pattern":{
                 "enabled":"Enable test pattern output function",
                 "format":"Format of the generated test pattern",
                 "type":"Type of test pattern to generate."
              }
           }
        }
```

HELP

Use GET verb passing "help=1" as a query parameter

```
Client:
    GET http://SERVERADDRESS/api/override?help=1

Server:
    HTTP/1.1 200 OK
    Content-Type: application/json
    {
       "override":{
          "blackout":{
             "enabled":{
                "Access Specifier":"R/W",
                "Details":"Enables or disables blackout",
                "Name":"Blackout Enabled",
                "Summary":"Enable blackout",
                "Type":"Boolean"
             },
             "fade-time":{
                "Access Specifier":"R/W",
                "Details":"The value of the blackout fade time. The fade time
                may be adjusted between zero (snap) and 10 seconds",
                "Name":"Blackout Fade Time",
                "Summary":"Time taken to fade to black when blackout enabled",
                "Type":"Float (range: 0 - 10)"
             }
          },
          "freeze":{
             "enabled":{
                "Access Specifier":"R/W",
                "Details":"Enables or disables video freeze",
                "Name":"Freeze Enabled",
                "Summary":"Enable video freeze",
                "Type":"Boolean"
             }
          }
       }
    }
```

TELNET/TCP SOCKET

Commandline access may be achieved by connecting on TCP port 23.

Commands, paths and parameters should be separated by spaces. Data is returned as human-readable formatted text.

GET

Example to get input video refresh rate:

```
Client:
    get /input/active/refresh-rate
Server:
    refresh-rate=60
```

SET (DIRECTORY)

Set video input source to first SDI port

```
Client:
    set /input/active/source port-type=sdi,port-number=0
Server:
    /source/
        port-type=sdi
        port-number=0
```

LIST

```
Client:
    list /project/properties
Server:
    /properties/
        blackout-fade-time: Time in seconds to fade to black
        test-pattern-format: Format of applied test pattern
```