UDP messages from third party systems can change any parameter value on a Hive Player immediately
You can also change any value in the devices settings files, these are the text files on the device which store the state of all of the modules in the system.
This is a very powerful way to control a Hive Player, allowing users to create their own user interfaces.

UDP Communications can be targeted at the devices IP address on the following ports:
Remote port no: 8083
Local port no: 8083

Here are some examples of the type of messages that can be sent, this list is non-exhaustive and for illustrative purposes only. If you have any questions about accessing parameters which are not shown in this list please contact support@hive.run

LAYER PARAMETERS

Function	**Description**	**UDP Command**	**Value range** (Substitute X in UDP command for a value within this range)
File Select	Selects current Media File	localSVPatch.SetPatchDouble("/LAYER 1/FILE SELECT/Value", X)	0..255: File Select
Folder Select	Selects current Media Folder	localSVPatch.SetPatchDouble("/LAYER 1/FOLDER SELECT/Value", X)	0..255: Folder Select
In Frame	Frame number From which Media Playback should start	localSVPatch.SetPatchDouble("/LAYER 1/IN FRAME/Value", X)	0..4294967295 Frame Number to start media from
Out Frame	Frame number at which Media Playback should end or loop	localSVPatch.SetPatchDouble("/LAYER 1/OUT FRAME/Value", X)	0..4294967295 Frame Number to end/loop media at
Play Mode	How the media should play	localSVPatch.SetPatchDouble("/LAYER 1/PLAY MODE/Value", X)	0: In Frame 1: Out Frame 2: Loop Forward 3: Loop Reverse 4: Play Once Forward 5: Play Once Reverse 6: Stop 7: Pause 8: Bounce (Ping-Pong) 9: Take Over Frame 10: Loop Forward with pause on zero intensity 11: Loop Reverse with pause on zero intensity 12: Play Once Forward with pause on zero intensity 13: Play Once Reverse with pause on zero intensity 15: Bounce (Ping-Pong) with pause on zero intensity 20: Synchronise to Time code 40: Loop Forward with re-trigger on intensity 41: Loop Reverse with re-trigger on intensity 42: Play Once Forward with re-trigger on intensity 43: Play Once Reverse with re-trigger on intensity
Play Speed	Play speed of media	localSVPatch.SetPatchDouble("/LAYER 1/PLAY SPEED/Value", X)	0.0: Stop 0.001..0.499: Slower 0.5: 100% 0.501..1.0: Faster (up to 10x)
Scale	Zoom into or out of the media	localSVPatch.SetPatchDouble("/LAYER 1/SCALE/Value", X)	0.0..4999: Zoom Out 0.5: 100% 0.5001..1.0: Zoom In
Framing Mode	How media should fit into output rectangle	localSVPatch.SetPatchDouble("/LAYER 1/FRAMING MODE/Value", X)	0: Letterbox 1: Crop 2: Stretch 3: Multi Letterbox 4: Centered
Aspect Ratio	Horizontal and Vertical adjustment of the rectangular shape of the media	localSVPatch.SetPatchDouble("/LAYER 1/ASPECT RATIO/Value", X)	0.0: No Adjustment 0..4999: Horizontal Squeeze 0.5: Center 0.501..1.0: Vertical Squeeze
Position X	Horizontal position of media	localSVPatch.SetPatchDouble("/LAYER 1/POSITION X/Value", X)	0.0..0.4999: Left 0.5: Center 0.5001..1.0: Right
Position Y	Vertical position of media	localSVPatch.SetPatchDouble("/LAYER 1/POSITION Y/Value", X)	0.0..0.4999: Above 0.5: Center 0.5001..1.0: Below
Rotation X	Rotate the media around the horizontal axis	localSVPatch.SetPatchDouble("/LAYER 1/ROTATION X/Value", X)	0.0..0.25: Auto Rotate CCW (0 FAST) 0.25..0.4999: Manual Rotate CCW 0.5: No Rotation 0.5001..0.75: Manual Rotate CW 0.75..1.0: Auto Rotate CW (Hi FAST)
Rotation Y	Rotate the media around the vertical axis	localSVPatch.SetPatchDouble("/LAYER 1/ROTATION Y/Value", X)	0.0..0.25: Auto Rotate CCW (0 FAST) 0.25..0.4999: Manual Rotate CCW 0.5: No Rotation 0.5001..0.75: Manual Rotate CW 0.75..1.0: Auto Rotate CW (Hi FAST)
Rotation Z	Rotate the media around the Z axis	localSVPatch.SetPatchDouble("/LAYER 1/ROTATION Z/Value", X)	0.0..0.25: Auto Rotate CCW (0 FAST) 0.25..0.4999: Manual Rotate CCW 0.5: No Rotation 0.5001..0.75: Manual Rotate CW 0.75..1.0: Auto Rotate CW (Hi FAST)
Movement Speed	Reserved for future use	localSVPatch.SetPatchDouble("/LAYER 1/MOVEMENT SPEED/Value", X)	Reserved for future use

Blend Mode	How this layer of media should be blended with any layers appearing below this layer	localSVPatch.SetPatchDouble("/LAYER 1/BLEND MODE/Value", X)	0: ALPHA 1: ADDITIVE 2: MULTIPLY 3: DIFFERENCE 4: SCREEN 5: PRESERVE LUMA 6: RECTANGLE WIPE 7: TRIANGLE WIPE 8: MINIMUM 9: MAXIMUM 10: SUBTRACT 11: DARKEN 12: LIGHTEN 13: SOFT LIGHTEN 14: DARK LIGHTEN 15: EXCLUSION 16: RANDOM 17: RIPPLE 18: THRESHOLD 19: SINE 20: INVERT MASK 21: NOISE 22: SWIRL 23: GRADIENT 24: PIXEL SORT 25: CHECKERBOARD 26: PULSE 27: HUE SHIFT 28: FRACTAL 29: WAVEFORM 30: RGB SPLIT 31: GLITCH
Intensity	Media Intensity / Opacity	localSVPatch.SetPatchDouble("/LAYER 1/INTENSITY/Value", X)	0.0..1.0: Media Intensity / Opacity
Red	Red channel adjustment of media	localSVPatch.SetPatchDouble("/LAYER 1/RED/Value", X)	0.0..0.4999: Remove Red Channel 0-99.9% 0.5: Red Channel at 100% 0.5001..1.0: Add to Red Channel 0-99.9%
Green	Green channel adjustment of media	localSVPatch.SetPatchDouble("/LAYER 1/GREEN/Value", X)	0.0..0.4999: Remove Green Channel 0-99.9% 0.5: Green Channel at 100% 0.5001..1.0: Add to Green Channel 0-99.9%
Blue	Blue channel adjustment of media	localSVPatch.SetPatchDouble("/LAYER 1/BLUE/Value", X)	0.0..0.4999: Remove Blue Channel 0-99.9% 0.5: Blue Channel at 100% 0.5001..1.0: Add to Blue Channel 0-99.9%
Hue	Hue adjustment of the colour of the media	localSVPatch.SetPatchDouble("/LAYER 1/HUE/Value", X)	0.0..1.0: Hue adjust 0-360’
Saturation	Saturation adjustment of media	localSVPatch.SetPatchDouble("/LAYER 1/SATURATION/Value", X)	0.0..0.4999: Desaturate 100-0% 0.5: Saturation not adjusted 0.5001..1.0: Over-saturate 0-100%
Contrast	Contrast adjustment of media	localSVPatch.SetPatchDouble("/LAYER 1/CONTRAST/Value", X)	0.0..0.4999: Contrast adjust 0-100% 0.5: Contrast not adjusted 0.5001..1.0: Contrast adjust 100-200%
LUT	Select LUT from LUTS folder. See web UI Param Page for complete list available on device	localSVPatch.SetPatchDouble("/LAYER 1/LUT/Value", X)	0..32767: Select LUT from LUT folder
Strobe	Strobe Media	localSVPatch.SetPatchDouble("/LAYER 1/STROBE/Value", X)	0.0..0.5: On Off Strobe slow-fast 0.5..1.0: Punch Strobe slow-fast
TC Hour	Timecode Trigger point Hour. Play media on layer with respect to this start point. (Only active when TC Offsets on external clock page is set to 'Layer Param')	localSVPatch.SetPatchDouble("/LAYER 1/MTC HOUR/Value", X)	0..24: HOUR
TC Minute	Timecode Trigger point Minute. Play media on layer with respect to this start point. (Only active when TC Offsets on external clock page is set to 'Layer Param')	localSVPatch.SetPatchDouble("/LAYER 1/MTC MINUTE/Value", X)	0..60: MINUTE
TC Second	Timecode Trigger point Second. Play media on layer with respect to this start point. (Only active when TC Offsets on external clock page is set to 'Layer Param')	localSVPatch.SetPatchDouble("/LAYER 1/MTC SECOND/Value", X)	0..60: SECOND
TC Frame	Timecode Trigger point Frame. Play media on layer with respect to this start point. (Only active when TC Offsets on external clock page is set to 'Layer Param')	localSVPatch.SetPatchDouble("/LAYER 1/MTC FRAME/Value", X)	0..60: FRAME
FX1 Select	Select Effect 1. See Effects Page for parameters for each effect	localSVPatch.SetPatchDouble("/LAYER 1/FX1 SELECT/Value", X)	0..32767: Select Effect 1 (FX1) 0 - NONE 1 - OLD TV 2 - SEPIA 3 - FEEDBACK 4 - BLUR 5 - CRYSTALISE 6 - FRACTAL SOUP 7 - RADAR 8 - PIXELISE 9 - SOFT EDGE OVAL 10 - TILE 11 - INFINITY ZOOM 12 - DOT GRID 13 - KALEIDOSCOPE 14 - MULTI MIRROR 15 - REBELLE DISTORT
FX1 Opacity	Effect 1 Opacity. Blends Effected media with original media	localSVPatch.SetPatchDouble("/LAYER 1/FX1 OPACITY/Value", X)	0.0..1.0: FX1 Opacity 0-100%
FX1 Param 1	Effect 1 High resolution adjustment for parameter 1	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 1/Value", X)	0.0..1.0 FX1 Parameter 1
FX1 Param 2	Effect 1 High resolution adjustment for parameter 2	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 2/Value", X)	0.0..1.0 FX1 Parameter 2
FX1 Param 3	Effect 1 High resolution adjustment for parameter 3	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 3/Value", X)	0.0..1.0 FX1 Parameter 3
FX1 Param 4	Effect 1 High resolution adjustment for parameter 4	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 4/Value", X)	0.0..1.0 FX1 Parameter 4
FX1 Param 5	Effect 1 High resolution adjustment for parameter 5	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 5/Value", X)	0.0..1.0 FX1 Parameter 5
FX1 Param 6	Effect 1 High resolution adjustment for parameter 6	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 6/Value", X)	0.0..1.0 FX1 Parameter 6

FX1 Param 7	Effect 1 High resolution adjustment for parameter 7	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 7/Value", X)	0.0..1.0 FX1 Parameter 7
FX1 Param 8	Effect 1 High resolution adjustment for parameter 8	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 8/Value", X)	0.0..1.0 FX1 Parameter 8
FX1 Param 9	Effect 1 High resolution adjustment for parameter 9	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 9/Value", X)	0.0..1.0 FX1 Parameter 9
FX1 Param 10	Effect 1 High resolution adjustment for parameter 10	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 10/Value", X)	0.0..1.0 FX1 Parameter 10
FX1 Param 11	Effect 1 High resolution adjustment for parameter 11	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 11/Value", X)	0.0..1.0 FX1 Parameter 11
FX1 Param 12	Effect 1 High resolution adjustment for parameter 12	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 12/Value", X)	0.0..1.0 FX1 Parameter 12
FX1 Param 13	Effect 1 High resolution adjustment for parameter 13	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 13/Value", X)	0.0..1.0 FX1 Parameter 13
FX1 Param 14	Effect 1 High resolution adjustment for parameter 14	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 14/Value", X)	0.0..1.0 FX1 Parameter 14
FX1 Param 15	Effect 1 High resolution adjustment for parameter 15	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 15/Value", X)	0.0..1.0 FX1 Parameter 15
FX1 Param 16	Effect 1 High resolution adjustment for parameter 16	localSVPatch.SetPatchDouble("/LAYER 1/FX1 PARAM 16/Value", X)	0.0..1.0 FX1 Parameter 16
FX2 Select	Select Effect 2. See web UI Effects Page for list	localSVPatch.SetPatchDouble("/LAYER 1/FX2 SELECT/Value", X)	0..32767: Select Effect 2 (FX2) 0 - NONE 1 - OLD TV 2 - SEPIA 3 - FEEDBACK 4 - BLUR 5 - CRYSTALISE 6 - FRACTAL SOUP 7 - RADAR 8 - PIXELISE 9 - SOFT EDGE OVAL 10 - TILE 11 - INFINITY ZOOM 12 - DOT GRID 13 - KALEIDOSCOPE 14 - MULTI MIRROR 15 - REBELLE DISTORT
FX2 Opacity	Effect 2 Opacity. Blends Effected media with original media	localSVPatch.SetPatchDouble("/LAYER 1/FX2 OPACITY/Value", X)	0.0..1.0: FX2 Opacity 0-100%
FX2 Param 1	Effect 2 High resolution adjustment for parameter 1	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 1/Value", X)	0.0..1.0 FX2 Parameter 1
FX2 Param 2	Effect 2 High resolution adjustment for parameter 2	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 2/Value", X)	0.0..1.0 FX2 Parameter 2
FX2 Param 3	Effect 2 High resolution adjustment for parameter 3	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 3/Value", X)	0.0..1.0 FX2 Parameter 3
FX2 Param 4	Effect 2 High resolution adjustment for parameter 4	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 4/Value", X)	0.0..1.0 FX2 Parameter 4
FX2 Param 5	Effect 2 High resolution adjustment for parameter 5	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 5/Value", X)	0.0..1.0 FX2 Parameter 5
FX2 Param 6	Effect 2 High resolution adjustment for parameter 6	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 6/Value", X)	0.0..1.0 FX2 Parameter 6
FX2 Param 7	Effect 2 High resolution adjustment for parameter 7	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 7/Value", X)	0.0..1.0 FX2 Parameter 7
FX2 Param 8	Effect 2 High resolution adjustment for parameter 8	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 8/Value", X)	0.0..1.0 FX2 Parameter 8
FX2 Param 9	Effect 2 High resolution adjustment for parameter 9	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 9/Value", X)	0.0..1.0 FX2 Parameter 9
FX2 Param 10	Effect 2 High resolution adjustment for parameter 10	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 10/Value", X)	0.0..1.0 FX2 Parameter 10
FX2 Param 11	Effect 2 High resolution adjustment for parameter 11	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 11/Value", X)	0.0..1.0 FX2 Parameter 11
FX2 Param 12	Effect 2 High resolution adjustment for parameter 12	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 12/Value", X)	0.0..1.0 FX2 Parameter 12
FX2 Param 13	Effect 2 High resolution adjustment for parameter 13	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 13/Value", X)	0.0..1.0 FX2 Parameter 13
FX2 Param 14	Effect 2 High resolution adjustment for parameter 14	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 14/Value", X)	0.0..1.0 FX2 Parameter 14
FX2 Param 15	Effect 2 High resolution adjustment for parameter 15	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 15/Value", X)	0.0..1.0 FX2 Parameter 15
FX2 Param 16	Effect 2 High resolution adjustment for parameter 16	localSVPatch.SetPatchDouble("/LAYER 1/FX2 PARAM 16/Value", X)	0.0..1.0 FX2 Parameter 16
Transition Duration	Set the duration of the transition (cross fade on a layer)	localSVPatch.SetPatchDouble("/LAYER 1/TRANSITION DURATION/Value", X)	0..65535 Milliseconds - 1 second = 1000
Transition Mode	Set the transition mode/blend mode for the transition (cross fade on a layer)	localSVPatch.SetPatchDouble("/LAYER 1/TRANSITION MODE/Value", X)	0: ALPHA 1: ADDITIVE 2: MULTIPLY 3: DIFFERENCE 4: SCREEN 5: PRESERVE LUMA 6: RECTANGLE WIPE 7: TRIANGLE WIPE 8: MINIMUM 9: MAXIMUM 10: SUBTRACT 11: DARKEN 12: LIGHTEN 13: SOFT LIGHTEN 14: DARK LIGHTEN 15: EXCLUSION 16: RANDOM 17: RIPPLE 18: THRESHOLD 19: SINE 20: INVERT MASK 21: NOISE 22: SWIRL 23: GRADIENT 24: PIXEL SORT 25: CHECKERBOARD 26: PULSE 27: HUE SHIFT 28: FRACTAL 29: WAVEFORM 30: RGB SPLIT 31: GLITCH

Volume	Audio volume (if video file has uncompressed embedded audio stream in 16, 24 or 32bit)	localSVPatch.SetPatchDouble("/LAYER 1/VOLUME/Value", X)	0..65535: Volume 0 – 100%

DEVICE SETTINGS

All of the devices settings are stored as JSON files. Any parameter of the JSON files can be written to

* PLEASE BACKUP YOUR JSON FILES BEFORE EDITING THEM AS YOU CAN BREAK YOUR DEVICE BY SETTING INVALID VALUES

For example to switch on timecode triggering mode:

```
localSVPatch.UpdatePatchJSON("/Timecode Cue List", [{"op":"replace","path":"/layers/0/useCueList","value":1}])
```

and to switch it off:

```
localSVPatch.UpdatePatchJSON("/Timecode Cue List", [{"op":"replace","path":"/layers/0/useCueList","value":0}])
```

To obtain the devices json files and see which parameters are available to be written to please run the following commands

Settings File	Description	UDP Command
Media List	List of all Media files and Meta data on device	localSVPatch.GetPatchJSON("/Media List", UDPMsgReturn)
System Settings	All of the devices System Settings	localSVPatch.GetPatchJSON("/System Settings", UDPMsgReturn)
Output Mapping	Devices Video Output Mapping	localSVPatch.GetPatchJSON("/Output Mapping", UDPMsgReturn)
Play List	Device Play List	localSVPatch.GetPatchJSON("/Play List", UDPMsgReturn)
Timecode Cue List	External Clock Cue List	localSVPatch.GetPatchJSON("/Timecode Cue List", UDPMsgReturn)
Vioso WB Settings	Warp & Blend Settings for Vioso	localSVPatch.GetPatchJSON("/Vioso WB Settings", UDPMsgReturn)
Screenberry WB Settings	Warp & Blend Settings for Screenberry	localSVPatch.GetPatchJSON("/Screenberry WB Settings", UDPMsgReturn)

PLAYLIST COMMANDS

Function	Description	UDP Command
ENABLE PLAYLIST	Let the playlist play instead of other content from the media list	localSVPatch.UpdatePatchJSON("/Play List", [{"op":"replace","path":"/usePlayList","value":1}])
DISABLE PLAYLIST	Stop using the playlist and return to whatever content is selected in the media list	localSVPatch.UpdatePatchJSON("/Play List", [{"op":"replace","path":"/usePlayList","value":0}])
PLAYLIST PLAY SPECIFIED ROW	Play Row 2 on Play list	localSVPatch.SetPatchDouble("/Playlist Control/Playlist Controller 1/Play List Next", 2)
PLAYLIST PAUSE	Pause playback of the playlist at the current time	localSVPatch.SetPatchDouble("/Playlist Control/Playlist Play Mode/Value", 0)
PLAYLIST PLAY	Play the playlist (after it has been paused)	localSVPatch.SetPatchDouble("/Playlist Control/Playlist Play Mode/Value", 1)
PLAYLIST SEEK	Seek to 10 seconds into play list	localSVPatch.SetPatchDouble("/Playlist Control/Playlist Controller 1/Play List Seek", 10)

OTHER COMMANDS

Function	Description	UDP Command
SEEK	Set play head position whilst paused or playing to 10 seconds	localSVPatch.SetPatchDouble("/LAYER 1/Transport Control/Media Time/Value", 10)

READING COMMANDS

Most of the values above can be read as well as written to.

To read the time that the renderer has been active for you can call:

```
localSVPatch.GetPatchDouble("/UpTime/Up Time",UDPMsgReturn)
```

To read the current play head position, use the following command

```
localSVPatch.GetPatchDouble("/LAYER 1/Transport Control/Media Time/Value", UDPMsgReturn)
```

To read the current row in the playlist, use the following command

```
localSVPatch.GetPatchDouble("/Playlist Control/Playlist Controller 1/Row Index", UDPMsgReturn)
```

All of the layer parameters can be accessed in a similar way

```
localSVPatch.GetPatchDouble("/LAYER 1/FILE SELECT/Value", UDPMsgReturn)
```

Once again this same principle can be used to access any parameter in the system, as another example, if you wanted to know the currently playing filename you could send the following

```
localSVPatch.GetPatchString("/LAYER 1/Transport Control/String Join/Str 2", UDPMsgReturn)
```

Or the detailed information of all files on the device as a JSON object:

```
localSVPatch.GetPatchJSON("/Media List", UDPMsgReturn)
```

Alternatively Values, Strings & Objects can be read and returned as objects including a descriptor which defines the source of the value. This can be useful if you are reading many values simultaneously and you are not sure of the order that the values will be returned in. For example:

```
GetPatchDoubleWithDescriptor("/LAYER 1/Transport Control/Media Time/Value")
```

Will return something like this: {"descriptor":"/LAYER 1/Transport Control/Media Time/Value","data":"1.0"}

```
GetPatchStringWithDescriptor("/LAYER 1/Transport Control/String Join/Str 2")
```

Will return something like this: {"descriptor":"/LAYER 1/Transport Control/String Join/Str 2","data":"0001_HIVE_1920x1080_60FPS_NO_AUDIO.mp4"}

```
GetPatchJSONWithDescriptor("/Media List")
```

Will return something like this: {"descriptor":"/Media List","data":"{\"description\":\"hive buzz file list\",\"files\":[{\"audioDetails\":\"none\",\"bitRate\":0,\"codec\":\"IMG\",\"duration\":\"0.040000\"