X32 OSC REMOTE PROTOCOL

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DESCRIPTION

The X32 is using a communication protocol that is compatible to standard OSC with some MUSIC Group specific extensions (e.g. parameter enquiry, subscriptions). OSC packets are received on UDP port 10023 and replies are sent back to the requester's IP/port.

Client messages (to console)

Operation	OSC address	Parameters	Comments
Info request	/info	None	Server responds with /info message
Control request	/xcontrol	None	Triggers server to send all parameter changes to maximum four active clients. Timeout is 10 seconds.
Set console parameter	<OSC path>	<string|int|float|blob value>	Sets the value of a console parameter, if it exists and value is in range. New value is echoed back by server, e.g. /ch/01/mix/15
Get console parameter	<OSC path>	None	Requests the value of a console parameter. If it exists, current value is echoed back by server
Get console meter values	/meters	<string id> <int chn_meter_id, optional> <int grp_meter_id, optional> <int priority, optional>	Results in regular updates of meter values as a single binary blob, to OSC address <id>. Timeout is 10 seconds. e.g. /meters /meters/1 returns 96 float meter values (32 input, 32 gate and 32 dynamic gain reductions) >> see "Meter requests" <<

Server messages (from console)

Operation	OSC address	Parameters	Comments
Info request	/info	<string server_version> <string server_name> <string console_model> <string console_version>	Names and version numbers, e.g. “V0.70”, “X32”
Set console parameter, get console parameter	<OSC path>	<string|int|float value>	Echoes the value of a console parameter in response to a get, set or parameter change, if control request (/xcontrol) is active. e.g. /ch/01/mix/15
Get console meter values	<client-specified id>	<blob data>	Blob contains meter data (float values) as single binary blob. First value is blob size as integer (number of meter values)

Type rules (get/set parameter)

- parameters must be big-endian and 4-byte aligned/padded, as per OSC specification
- float parameters must be in range 0.0 – 1.0
- integer parameters are signed 32-bit values
- boolean parameters will map to OSC integer type
- strings must be null-terminated

Meter requests

- update cycle frequency for meter data is 50 ms, and may be variable according to console's ability to fulfill requests. Timeout is 10 seconds.
- returns float 0.0 – 1.0, representing the linear audio level (digital 0 – fullscale; internal headroom allows for values up to 8.0 (+18 dBFS)).
- meter requests are used to get a specific set of meter values, e.g.:

  /meters, si "/meters/6" 16

  returns 4 channel strip meters (pre-fade, gate and dyn gain reduction, post-fade) of ch17.

List of all Meter IDs:

/meters/0

HOME meter page (not used for X Control):

- 32 input channels
- 8 aux returns
- 4x2 st fx returns
- 16 bus masters
- 6 matrixes

→ returns 70 float values as single binary blob

/meters/1

CHANNEL meter page:

- 32 input channels
- 32 gate gain reductions
- 32 dynamics gain reductions

→ returns 96 float values as single binary blob

/meters/2

MIX BUS meter page:

- 16 bus masters
- 6 matrixes
- 2 main LR
- 1 mono M/C
- 16 bus master dynamics gain reductions
- 6 matrix dynamics gain reductions
- 1 main LR dynamics gain reduction
- 1 mono M/C dynamics gain reduction

→ returns 49 float values as single binary blob

/meters/3

AUX/FX meter page:

- 6 aux sends
- 8 aux returns
- 4x2 st fx returns

→ returns 22 float values as single binary blob

/meters/4

IN/OUT meter page:

- 32 input channels
- 8 aux returns
- 16 outputs
- 16 P16 ultranet outputs
- 6 aux sends
- 2 digital AES/EBU out
- 2 monitor outputs

→ returns 82 float values as single binary blob

/meters/5 <chn_meter_id> <grp_meter_id>

Console surface vu meter (channel, group and main meters):

- 16 channel meters: <chn_meter_id> 0: channel 1-16; 1: channel 17-32; 2: aux/fx returns; 3: bus masters
- 8 group meters: <grp_meter_id> 1: mix bus 1-8; 2: mix bus 9-16; 3: matrixes
- 2 main LR
- 1 mono M/C

→ returns 27 float values as single binary blob

/meters/6 <channel_id>

Channel strip meters (pre-fade, gate and dyn gain reduction, post-fade):

- 4 channel strip meters: <channel_id> channel 0...71

→returns 4 float values as single binary blob

/meters/7

Bus send meters:

- 16 bus send meters

→ returns 16 float values as single binary blob

/meters/8

Matrix send meters:

- 6 matrix send meters

→ returns 6 float values as single binary blob

/meters/9

Effects send and return meters:

- 2 effects send meters for each FX slot (8 slots)
- 2 effects return meters for each FX slot (8 slots)

→ returns 32 float values (4 x FX 1, 4 x FX 2, .. 4 x FX 8) as single binary blob

types ->		[string, enum(string or integer), int(integer), linf(float), logf(float), level(float)]
range ->	string	[max. Characters]
	enum	[list of all possible strings]
	int	[min. value, max. value], stepsize = 1
	linf	[min. value, max. Value, stepsize]
	logf	[min. value, max. Value, steps]
	level	[0.0...1.0 (+10 dB), steps] -> 4 'linear' dB ranges: 0.0..0.0625 (-oo, -90..-60 dB), 0.0625..0.25 (-60..-30 dB), 0.25..0.5 (-30..-10dB) and 0.5..0.1 (-10..+10dB)

<path>	<type>	<range>	<unit>
--------- config data ---------			
/config/chlink/1-2	enum	{OFF,ON}	
/config/chlink/3-4	enum	{OFF,ON}	
/config/chlink/5-6	enum	{OFF,ON}	
/config/chlink/7-8	enum	{OFF,ON}	
/config/chlink/9-10	enum	{OFF,ON}	
/config/chlink/11-12	enum	{OFF,ON}	
/config/chlink/13-14	enum	{OFF,ON}	
/config/chlink/15-16	enum	{OFF,ON}	
/config/chlink/17-18	enum	{OFF,ON}	
/config/chlink/19-20	enum	{OFF,ON}	
/config/chlink/21-22	enum	{OFF,ON}	
/config/chlink/23-24	enum	{OFF,ON}	
/config/chlink/25-26	enum	{OFF,ON}	
/config/chlink/27-28	enum	{OFF,ON}	
/config/chlink/29-30	enum	{OFF,ON}	
/config/chlink/31-32	enum	{OFF,ON}	
/config/auxlink/1-2	enum	{OFF,ON}	
/config/auxlink/3-4	enum	{OFF,ON}	
/config/auxlink/5-6	enum	{OFF,ON}	
/config/auxlink/7-8	enum	{OFF,ON}	
/config/fxlink/1-2	enum	{OFF,ON}	
/config/fxlink/3-4	enum	{OFF,ON}	
/config/fxlink/5-6	enum	{OFF,ON}	
/config/fxlink/7-8	enum	{OFF,ON}	

/config/buslink/1-2	enum	{OFF,ON}	
/config/buslink/3-4	enum	{OFF,ON}	
/config/buslink/5-6	enum	{OFF,ON}	
/config/buslink/7-8	enum	{OFF,ON}	
/config/buslink/9-10	enum	{OFF,ON}	
/config/buslink/11-12	enum	{OFF,ON}	
/config/buslink/13-14	enum	{OFF,ON}	
/config/buslink/15-16	enum	{OFF,ON}	
/config/mtxlink/1-2	enum	{OFF,ON}	
/config/mtxlink/3-4	enum	{OFF,ON}	
/config/mtxlink/5-6	enum	{OFF,ON}	
/config/mute/[1..6]	enum	{OFF,ON}	
/config/linkcfg/hadly	enum	{OFF,ON}	
/config/linkcfg/eq	enum	{OFF,ON}	
/config/linkcfg/dyn	enum	{OFF,ON}	
/config/linkcfg/fdrmute	enum	{OFF,ON}	
/config/mono/mode	enum	{LR+M,LCR}	
/config/mono/link	enum	{OFF,ON}	
/config/solo/level	level	[0.0...1.0 (+10 dB), 161]	dB
/config/solo/source	enum	{OFF,LR,LR+C,LRPFL,LRAFL,AUX56,AUX78}	
/config/solo/sourcetrim	linf	[-18.000,18.000,0.500]	dB
/config/solo/chmode	enum	{PFL,AFL}	
/config/solo/busmode	enum	{PFL,AFL}	
/config/solo/dcamode	enum	{PFL,AFL}	
/config/solo/exclusive	enum	{OFF,ON}	
/config/solo/followsel	enum	{OFF,ON}	
/config/solo/followsolo	enum	{OFF,ON}	
/config/solo/dimatt	linf	[-40.000,0.000,1.000]	dB
/config/solo/dim	enum	{OFF,ON}	
/config/solo/mono	enum	{OFF,ON}	
/config/solo/delay	enum	{OFF,ON}	
/config/solo/delaytime	linf	[0.300,500.000,0.100]	ms
/config/solo/masterctrl	enum	{OFF,ON}	
/config/solo/mute	enum	{OFF,ON}	
/config/solo/dimpfl	enum	{OFF,ON}	
/config/talk/enable	enum	{OFF,ON}	
/config/talk/source	enum	{INT,EXT}	
/config/talk/A/level	level	[0.0...1.0 (+10 dB), 161]	dB
/config/talk/A/dim	enum	{OFF,ON}	
/config/talk/A/latch	enum	{OFF,ON}	
/config/talk/A/destmap	int	[0,262143] (bitmap)	
/config/talk/B/level	level	[0.0...1.0 (+10 dB), 161]	dB
/config/talk/B/dim	enum	{OFF,ON}	
/config/talk/B/latch	enum	{OFF,ON}	
/config/talk/B/destmap	int	[0,262143] (bitmap)	
/config/osc/level	level	[0.0...1.0 (+10 dB), 161]	dB
/config/osc/f1	logf	[20.000,20000,121]	Hz

/config/osc/f2	logf	[20.000,20000,121] Hz
/config/osc/fsel	enum	{F1,F2}
/config/osc/type	enum	{SINE,PINK,WHITE}
/config/osc/dest	int	[0,25]
/config/routing/IN/1-8	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32}
/config/routing/IN/9-16	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32}
/config/routing/IN/17-24	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32}
/config/routing/IN/25-32	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32}
/config/routing/IN/AUX1-4	enum	{AUX1-4,AN1-4,A1-4,B1-4,CARD1-4}
/config/routing/AES50A/1-8	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50A/9-16	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50A/17-24	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50A/25-32	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50A/33-40	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}

/config/routing/AES50A/41-48	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50B/1-8	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50B/9-16	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50B/17-24	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50B/25-32	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50B/33-40	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/AES50B/41-48	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/CARD/1-8	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}
/config/routing/CARD/9-16	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}

/config/routing/CARD/17-24	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}	
/config/routing/CARD/25-32	enum	{AN1-8,AN9-16,AN17-24,AN25-32,A1-8,A9-16,A17-24,A25-32,A33-40,A41-48,B1-8,B9-16,B17-24,B25-32,B33-40,B41-48,CARD1-8,CARD9-16,CARD17-24,CARD25-32,OUT1-8,OUT9-16,P161-8,P169-16,AUX/CR}	
/config/tape/gainL	linf	[-6.000,24.000,0.500]	dB
/config/tape/gainR	linf	[-6.000,24.000,0.500]	dB
/config/tape/autoplay	enum	{OFF,ON}	
--------- channel [01..32] (channel id 0..31) ---------			
/ch/[01..32]/config/name	string	[12]	
/ch/[01..32]/config/icon	int	[1,74]	
/ch/[01..32]/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
/ch/[01..32]/config/source	int	[0,64]	
/ch/[01..32]/delay/on	enum	{OFF,ON}	
/ch/[01..32]/delay/time	linf	[0.300,500.000,0.100]	ms
/ch/[01..32]/preamp/trim	linf	[-12.000,12.000,0.250] (digital sources only)	dB
/ch/[01..32]/preamp/invert	enum	{OFF,ON}	
/ch/[01..32]/preamp/hpon	enum	{OFF,ON}	
/ch/[01..32]/preamp/hpslope	enum	{12,18,24}	
/ch/[01..32]/preamp/hpf	logf	[20.000,400.000,101]	Hz
/ch/[01..32]/gate/on	enum	{OFF,ON}	
/ch/[01..32]/gate/mode	enum	{GATE,DUCK}	
/ch/[01..32]/gate/thr	linf	[-80.000,0.000,0.500]	dB
/ch/[01..32]/gate/range	linf	[3.000,60.000,1.000]	dB
/ch/[01..32]/gate/attack	linf	[0.000,120.000,1.000]	ms
/ch/[01..32]/gate/hold	logf	[0.020,2000,101]	ms
/ch/[01..32]/gate/release	logf	[5.000,4000.000,101]	ms
/ch/[01..32]/gate/keysrc	int	[0,64]	
/ch/[01..32]/gate/filter/on	enum	{OFF,ON}	
/ch/[01..32]/gate/filter/type	enum	{LC6,LC12,HC6,HC12,1.0,2.0,3.0,5.0,10.0}	
/ch/[01..32]/gate/filter/f	logf	[20.000,20000,201]	Hz
/ch/[01..32]/dyn/on	enum	{OFF,ON}	
/ch/[01..32]/dyn/mode	enum	{COMP,EXP}	
/ch/[01..32]/dyn/det	enum	{PEAK,RMS}	
/ch/[01..32]/dyn/env	enum	{LIN,LOG}	
/ch/[01..32]/dyn/thr	linf	[-80.000,0.000,0.500]	dB
/ch/[01..32]/dyn/ratio	enum	{1.1,1.3,1.5,2.0,2.5,3.0,4.0,5.0,7.0,10,20,100}	
/ch/[01..32]/dyn/knee	linf	[0.000,5.000,1.000]	
/ch/[01..32]/dyn/mgain	linf	[0.000,24.000,0.500]	dB
/ch/[01..32]/dyn/attack	linf	[0.000,120.000,1.000]	ms
/ch/[01..32]/dyn/hold	logf	[0.020,2000,101]	ms

/ch/[01..32]/dyn/release	logf	[5.000,4000.000,101]	ms
/ch/[01..32]/dyn/pos	enum	{PRE,POST}	
/ch/[01..32]/dyn/keysrc	int	[0,64]	
/ch/[01..32]/dyn/filter/on	enum	{OFF,ON}	
/ch/[01..32]/dyn/filter/type	enum	{LC6,LC12,HC6,HC12,1.0,2.0,3.0,5.0,10.0}	
/ch/[01..32]/dyn/filter/f	logf	[20.000,20000,201]	Hz
/ch/[01..32]/insert/on	enum	{OFF,ON}	
/ch/[01..32]/insert/pos	enum	{PRE,POST}	
/ch/[01..32]/insert/sel	enum	{OFF,FX1L,FX1R,FX2L,FX2R,FX3L,FX3R,FX4L, FX4R,FX5L,FX5R,FX6L,FX6R,FX7L,FX7R,FX8L, FX8R,AUX1,AUX2,AUX3,AUX4,AUX5,AUX6}	
/ch/[01..32]/eq/on	enum	{OFF,ON}	
/ch/[01..32]/eq/[1..4]/type	enum	{LCut,LShv,PEQ,VEQ,HShv,HCut}	
/ch/[01..32]/eq/[1..4]/f	logf	[20.000,20000,201]	Hz
/ch/[01..32]/eq/[1..4]/g	linf	[-15.000,15.000,0.250]	dB
/ch/[01..32]/eq/[1..4]/q	logf	[10.000,0.300,72]	
/ch/[01..32]/mix/on	enum	{OFF,ON}	
/ch/[01..32]/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	dB
/ch/[01..32]/mix/st	enum	{OFF,ON}	
/ch/[01..32]/mix/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/mono	enum	{OFF,ON}	
/ch/[01..32]/mix/mlevel	level	[0.0...1.0 (+10 dB), 161]	dB
/ch/[01..32]/mix/[01..16]/on	enum	{OFF,ON}	
/ch/[01..32]/mix/[01..16]/level	level	[0.0...1.0 (+10 dB), 161]	dB
/ch/[01..32]/mix/01/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/01/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/03/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/03/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/05/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/05/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/07/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/07/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/09/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/09/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/11/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/11/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/13/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/13/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/mix/15/pan	linf	[-100.000,100.000,2.000]	
/ch/[01..32]/mix/15/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/ch/[01..32]/grp/dca	int	[0,255] (bitmap)	
/ch/[01..32]/grp/mute	int	[0,63] (bitmap)	
--------- auxin [01..08] (channel id 32..39) ---------			
/auxin/[01..08]/config/name	string	[12]	
/auxin/[01..08]/config/icon	int	[1,74]	
/auxin/[01..08]/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	

/auxin/[01..08]/config/source	int	[0,64]	
/auxin/[01..08]/preamp/trim	linf	[-12.000,12.000,0.250]	dB
/auxin/[01..08]/preamp/invert	enum	{OFF,ON}	
/auxin/[01..08]/eq/on	enum	{OFF,ON}	
/auxin/[01..08]/eq/[1..4]/type	enum	{LCut,LShv,PEQ,VEQ,HShv,HCut}	
/auxin/[01..08]/eq/[1..4]/f	logf	[20.000,20000,201]	Hz
/auxin/[01..08]/eq/[1..4]/g	linf	[-15.000,15.000,0.250]	dB
/auxin/[01..08]/eq/[1..4]/q	logf	[10.000,0.300,72]	
/auxin/[01..08]/mix/on	enum	{OFF,ON}	
/auxin/[01..08]/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	
/auxin/[01..08]/mix/st	enum	{OFF,ON}	
/auxin/[01..08]/mix/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/mono	enum	{OFF,ON}	
/auxin/[01..08]/mix/mlevel	level	[0.0...1.0 (+10 dB), 161]	
/auxin/[01..08]/mix/[01..16]/on	enum	{OFF,ON}	
/auxin/[01..08]/mix/[01..16]/level	level	[0.0...1.0 (+10 dB), 161]	
/auxin/[01..08]/mix/01/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/01/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/03/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/03/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/05/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/05/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/07/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/07/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/09/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/09/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/11/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/11/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/13/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/13/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/mix/15/pan	linf	[-100.000,100.000,2.000]	
/auxin/[01..08]/mix/15/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/auxin/[01..08]/grp/dca	int	[0,255] (bitmap)	
/auxin/[01..08]/grp/mute	int	[0,63] (bitmap)	

--------- fxrtn [01..08] (channel id 40..47) ---------

/fxrtn/[01..08]/config/name	string	[12]	
/fxrtn/[01..08]/config/icon	int	[1,74]	
/fxrtn/[01..08]/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
/fxrtn/[01..08]/mix/on	enum	{OFF,ON}	
/fxrtn/[01..08]/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	dB
/fxrtn/[01..08]/mix/st	enum	{OFF,ON}	
/fxrtn/[01..08]/mix/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/mono	enum	{OFF,ON}	
/fxrtn/[01..08]/mix/mlevel	level	[0.0...1.0 (+10 dB), 161]	dB
/fxrtn/[01..08]/mix/[01..16]/on	enum	{OFF,ON}	
/fxrtn/[01..08]/mix/[01..16]/level	level	[0.0...1.0 (+10 dB), 161]	dB

/fxrtn/[01..08]/mix/01/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/01/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/03/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/03/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/05/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/05/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/07/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/07/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/09/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/09/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/11/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/11/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/13/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/13/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/mix/15/pan	linf	[-100.000,100.000,2.000]	
/fxrtn/[01..08]/mix/15/type	enum	{<-EQ,EQ->,PRE,POST,GRP}	
/fxrtn/[01..08]/grp/dca	int	[0,255] (bitmap)	
/fxrtn/[01..08]/grp/mute	int	[0,63] (bitmap)	

--------- bus [01..16] (channel id 48..63) ---------			
/bus/[01..16]/config/name	string	[12]	
/bus/[01..16]/config/icon	int	[1,74]	
/bus/[01..16]/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
/bus/[01..16]/dyn/on	enum	{OFF,ON}	
/bus/[01..16]/dyn/mode	enum	{COMP,EXP}	
/bus/[01..16]/dyn/det	enum	{PEAK,RMS}	
/bus/[01..16]/dyn/env	enum	{LIN,LOG}	
/bus/[01..16]/dyn/thr	linf	[-80.000,0.000,0.500]	dB
/bus/[01..16]/dyn/ratio	enum	{1.1,1.3,1.5,2.0,2.5,3.0,4.0,5.0,7.0,10,20,100}	
/bus/[01..16]/dyn/knee	linf	[0.000,5.000,1.000]	
/bus/[01..16]/dyn/mgain	linf	[0.000,24.000,0.500]	dB
/bus/[01..16]/dyn/attack	linf	[0.000,120.000,1.000]	ms
/bus/[01..16]/dyn/hold	logf	[0.020,2000,101]	ms
/bus/[01..16]/dyn/release	logf	[5.000,4000.000,101]	ms
/bus/[01..16]/dyn/pos	enum	{PRE,POST}	
/bus/[01..16]/dyn/keysrc	int	[0,64]	
/bus/[01..16]/dyn/filter/on	enum	{OFF,ON}	
/bus/[01..16]/dyn/filter/type	enum	{LC6,LC12,HC6,HC12,1.0,2.0,3.0,5.0,10.0}	
/bus/[01..16]/dyn/filter/f	logf	[20.000,20000,201]	Hz
/bus/[01..16]/insert/on	enum	{OFF,ON}	
/bus/[01..16]/insert/pos	enum	{PRE,POST}	
/bus/[01..16]/insert/sel	enum	{OFF,FX1L,FX1R,FX2L,FX2R,FX3L,FX3R,FX4L, FX4R,FX5L,FX5R,FX6L,FX6R,FX7L,FX7R,FX8L, FX8R,AUX1,AUX2,AUX3,AUX4,AUX5,AUX6}	
/bus/[01..16]/eq/on	enum	{OFF,ON}	
/bus/[01..16]/eq/[1..6]/type	enum	{LCut,LShv,PEQ,VEQ,HShv,HCut}	
/bus/[01..16]/eq/[1..6]/f	logf	[20.000,20000,201]	Hz

/bus/[01..16]/eq/[1..6]/g	linf	[-15.000,15.000,0.250]	dB
/bus/[01..16]/eq/[1..6]/q	logf	[10.000,0.300,72]	
/bus/[01..16]/mix/on	enum	{OFF,ON}	
/bus/[01..16]/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	dB
/bus/[01..16]/mix/st	enum	{OFF,ON}	
/bus/[01..16]/mix/pan	linf	[-100.000,100.000,2.000]	
/bus/[01..16]/mix/mono	enum	{OFF,ON}	
/bus/[01..16]/mix/mlevel	level	[0.0...1.0 (+10 dB), 161]	dB
/bus/[01..16]/mix/[01..06]/on	enum	{OFF,ON}	
/bus/[01..16]/mix/[01..06]/level	level	[0.0...1.0 (+10 dB), 161]	dB
/bus/[01..16]/mix/01/pan	linf	[-100.000,100.000,2.000]	
/bus/[01..16]/mix/03/pan	linf	[-100.000,100.000,2.000]	
/bus/[01..16]/mix/05/pan	linf	[-100.000,100.000,2.000]	
/bus/[01..16]/grp/dca	int	[0,255] (bitmap)	
/bus/[01..16]/grp/mute	int	[0,63] (bitmap)	

--------- mtx [01..06] (channel id 64..69) ---------			
/mtx/[01..06]/config/name	string	[12]	
/mtx/[01..06]/config/icon	int	[1,74]	
/mtx/[01..06]/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
/mtx/[01..06]/dyn/on	enum	{OFF,ON}	
/mtx/[01..06]/dyn/mode	enum	{COMP,EXP}	
/mtx/[01..06]/dyn/det	enum	{PEAK,RMS}	
/mtx/[01..06]/dyn/env	enum	{LIN,LOG}	
/mtx/[01..06]/dyn/thr	linf	[-80.000,0.000,0.500]	dB
/mtx/[01..06]/dyn/ratio	enum	{1.1,1.3,1.5,2.0,2.5,3.0,4.0,5.0,7.0,10,20,100}	
/mtx/[01..06]/dyn/knee	linf	[0.000,5.000,1.000]	
/mtx/[01..06]/dyn/mgain	linf	[0.000,24.000,0.500]	dB
/mtx/[01..06]/dyn/attack	linf	[0.000,120.000,1.000]	ms
/mtx/[01..06]/dyn/hold	logf	[0.020,2000,101]	ms
/mtx/[01..06]/dyn/release	logf	[5.000,4000.000,101]	ms
/mtx/[01..06]/dyn/pos	enum	{PRE,POST}	
/mtx/[01..06]/dyn/filter/on	enum	{OFF,ON}	
/mtx/[01..06]/dyn/filter/type	enum	{LC6,LC12,HC6,HC12,1.0,2.0,3.0,5.0,10.0}	
/mtx/[01..06]/dyn/filter/f	logf	[20.000,20000,201]	Hz
/mtx/[01..06]/insert/on	enum	{OFF,ON}	
/mtx/[01..06]/insert/pos	enum	{PRE,POST}	
/mtx/[01..06]/insert/sel	enum	{OFF,FX1L,FX1R,FX2L,FX2R,FX3L,FX3R,FX4L, FX4R,FX5L,FX5R,FX6L,FX6R,FX7L,FX7R,FX8L, FX8R,AUX1,AUX2,AUX3,AUX4,AUX5,AUX6}	
/mtx/[01..06]/eq/on	enum	{OFF,ON}	
/mtx/[01..06]/eq/[1..6]/type	enum	{LCut,LShv,PEQ,VEQ,HShv,HCut}	
/mtx/[01..06]/eq/[1..6]/f	logf	[20.000,20000,201]	Hz
/mtx/[01..06]/eq/[1..6]/g	linf	[-15.000,15.000,0.250]	dB
/mtx/[01..06]/eq/[1..6]/q	logf	[10.000,0.300,72]	
/mtx/[01..06]/mix/on	enum	{OFF,ON}	
/mtx/[01..06]/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	dB

--------- main stereo (channel id 70) ---------			
/main/st/config/name	string	[12]	
/main/st/config/icon	int	[1,74]	
/main/st/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
/main/st/dyn/on	enum	{OFF,ON}	
/main/st/dyn/mode	enum	{COMP,EXP}	
/main/st/dyn/det	enum	{PEAK,RMS}	
/main/st/dyn/env	enum	{LIN,LOG}	
/main/st/dyn/thr	linf	[-80.000,0.000,0.500]	dB
/main/st/dyn/ratio	enum	{1.1,1.3,1.5,2.0,2.5,3.0,4.0,5.0,7.0,10,20,100}	
/main/st/dyn/knee	linf	[0.000,5.000,1.000]	
/main/st/dyn/mgain	linf	[0.000,24.000,0.500]	dB
/main/st/dyn/attack	linf	[0.000,120.000,1.000]	ms
/main/st/dyn/hold	logf	[0.020,2000,101]	ms
/main/st/dyn/release	logf	[5.000,4000.000,101]	ms
/main/st/dyn/pos	enum	{PRE,POST}	
/main/st/dyn/filter/on	enum	{OFF,ON}	
/main/st/dyn/filter/type	enum	{LC6,LC12,HC6,HC12,1.0,2.0,3.0,5.0,10.0}	
/main/st/dyn/filter/f	logf	[20.000,20000,201]	Hz
/main/st/insert/on	enum	{OFF,ON}	
/main/st/insert/pos	enum	{PRE,POST}	
/main/st/insert/sel	enum	{OFF,FX1L,FX1R,FX2L,FX2R,FX3L,FX3R,FX4L, FX4R,FX5L,FX5R,FX6L,FX6R,FX7L,FX7R,FX8L, FX8R,AUX1,AUX2,AUX3,AUX4,AUX5,AUX6}	
/main/st/eq/on	enum	{OFF,ON}	
/main/st/eq/[1..6]/type	enum	{LCut,LShv,PEQ,VEQ,HShv,HCut}	
/main/st/eq/[1..6]/f	logf	[20.000,20000,201]	Hz
/main/st/eq/[1..6]/g	linf	[-15.000,15.000,0.250]	dB
/main/st/eq/[1..6]/q	logf	[10.000,0.300,-0.049]	
/main/st/mix/on	enum	{OFF,ON}	
/main/st/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	dB
/main/st/mix/pan	linf	[-100.000,100.000,2.000]	
/main/st/mix/[01..06]/on	enum	{OFF,ON}	
/main/st/mix/[01..06]/level	level	[0.0...1.0 (+10 dB), 161]	dB
/main/st/mix/01/pan	linf	[-100.000,100.000,2.000]	
/main/st/mix/03/pan	linf	[-100.000,100.000,2.000]	
/main/st/mix/05/pan	linf	[-100.000,100.000,2.000]	

--------- main mono (channel id 71) ---------			
/main/m/config/name	string	[12]	
/main/m/config/icon	int	[1,74]	
/main/m/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
/main/m/dyn/on	enum	{OFF,ON}	
/main/m/dyn/mode	enum	{COMP,EXP}	
/main/m/dyn/det	enum	{PEAK,RMS}	
/main/m/dyn/env	enum	{LIN,LOG}	
/main/m/dyn/thr	linf	[-80.000,0.000,0.500]	dB

/main/m/dyn/ratio	enum	{1.1,1.3,1.5,2.0,2.5,3.0,4.0,5.0,7.0,10,20,100}	
/main/m/dyn/knee	linf	[0.000,5.000,1.000]	
/main/m/dyn/mgain	linf	[0.000,24.000,0.500]	dB
/main/m/dyn/attack	linf	[0.000,120.000,1.000]	ms
/main/m/dyn/hold	logf	[0.020,2000,101]	ms
/main/m/dyn/release	logf	[5.000,4000.000,101]	ms
/main/m/dyn/pos	enum	{PRE,POST}	
/main/m/dyn/filter/on	enum	{OFF,ON}	
/main/m/dyn/filter/type	enum	{LC6,LC12,HC6,HC12,1.0,2.0,3.0,5.0,10.0}	
/main/m/dyn/filter/f	logf	[20.000,20000,201]	Hz
/main/m/insert/on	enum	{OFF,ON}	
/main/m/insert/pos	enum	{PRE,POST}	
/main/m/insert/sel	enum	{OFF,FX1L,FX1R,FX2L,FX2R,FX3L,FX3R,FX4L, FX4R,FX5L,FX5R,FX6L,FX6R,FX7L,FX7R,FX8L, FX8R,AUX1,AUX2,AUX3,AUX4,AUX5,AUX6}	
/main/m/eq/on	enum	{OFF,ON}	
/main/m/eq/[1..6]/type	enum	{LCut,LShv,PEQ,VEQ,HShv,HCut}	
/main/m/eq/[1..6]/f	logf	[20.000,20000,201]	Hz
/main/m/eq/[1..6]/g	linf	[-15.000,15.000,0.250]	dB
/main/m/eq/[1..6]/q	logf	[10.000,0.300,72]	
/main/m/mix/on	enum	{OFF,ON}	
/main/m/mix/fader	level	[0.0...1.0 (+10 dB), 1024]	dB
/main/m/mix/[01..06]/on	enum	{OFF,ON}	
/main/m/mix/[01..06]/level	level	[0.0...1.0 (+10 dB), 161]	dB
/main/m/mix/01/pan	linf	[-100.000,100.000,2.000]	
/main/m/mix/03/pan	linf	[-100.000,100.000,2.000]	
/main/m/mix/05/pan	linf	[-100.000,100.000,2.000]	
--------- dca groups (no channel id!) ---------			
/dca/[1..8]/on	enum	{OFF,ON}	
/dca/[1..8]/fader	level	[0.0...1.0 (+10 dB), 1024]	dB
/dca/[1..8]/config/name	string	[12]	
/dca/[1..8]/config/icon	int	[1,74]	
/dca/[1..8]/config/color	enum	{OFF,RD,GN,YE,BL,MG,CY,WH}	
--------- effects fx [1..4] ---------			
/fx/[1..4]/type	enum	{HALL,PLAT,VREV,VRM,AMBI,GATE,RVRS,DLY,3TAP,CRS,FLNG,PHAS,FILT,ROTA,PAN,D/RV,CR/R,FL/R,D/CR,D/FL,GEQ2,GEQ,TEQ2,TEQ,WAVD,LIM,ENH2,ENH,EXC2,EXC,IMG,AMP2,AMP,DRV2,DRV,PIT2,PIT}	
/fx/[1..4]/source/l	enum	{INS,MIX1,MIX2,MIX3,MIX4,MIX5,MIX6,MIX7,MIX8,MIX9,MIX10,MIX11,MIX12,MIX13, MIX14,MIX15,MIX16}	
/fx/[1..4]/source/r	enum	{INS,MIX1,MIX2,MIX3,MIX4,MIX5,MIX6,MIX7,MIX8,MIX9,MIX10,MIX11,MIX12,MIX13, MIX14,MIX15,MIX16}	

/fx/[1..4]/par/[01..64]	linf/logf	(depending on selected effect type)	
--------- effects fx [5..8] ---------			
/fx/[5..8]/type	enum	{GEQ2,GEQ,TEQ2,TEQ,WAVD,LIM,ENH2,ENH,EXC2,EXC,IMG,AMP2,AMP,DRV2,DRV,PHAS,FILT,PAN}	
/fx/[5..8]/par/[01..64]	linf/logf	(depending on selected effect type)	
--------- outputs main [01..16] ---------			
/outputs/main/[01..16]/src	int	[0,76]	
/outputs/main/[01..16]/pos	enum	{<-EQ,EQ->,PRE,POST}	
/outputs/main/[01..16]/delay/on	enum	{OFF,ON}	
/outputs/main/[01..16]/delay/time	linf	[0.300,500.000,0.100]	ms
--------- outputs aux [01..06] ---------			
/outputs/aux/[01..06]/src	int	[0,76]	
/outputs/aux/[01..06]/pos	enum	{<-EQ,EQ->,PRE,POST}	
--------- outputs P16 [01..16] ---------			
/outputs/p16/[01..16]/src	int	[0,76]	
/outputs/p16/[01..16]/pos	enum	{<-EQ,EQ->,PRE,POST}	
--------- outputs AES [01..02] ---------			
/outputs/aes/[01..02]/src	int	[0,76]	
/outputs/aes/[01..02]/pos	enum	{<-EQ,EQ->,PRE,POST}	
--------- outputs REC [01..02] ---------			
/outputs/rec/[01..02]/src	int	[0,76]	
/outputs/rec/[01..02]/pos	enum	{<-EQ,EQ->,PRE,POST}	
--------- headamps [000..127] ---------			
/headamp/[000..127]/gain	linf	[-12.000,60.000,0.500]	dB
/headamp/[000..127]/phantom	enum	{OFF,ON} 000..031: local XLR inputs 032..079: AES50 port A connected devices 080..127: AES50 port B connected devices	

For further information about the OSC protocol please visit http://opensoundcontrol.org