

# **d&b OSC Protocol document for DS100**

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1.0.0	Initial release	28.11.17	martinr
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1.2.2	En-Space parameter Predelay factor and Rear level added	29.01.19	martinr
1.2.3	Descriptions corrected	22.03.19	martinr
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1.3.1	Updated OSC example to match OSC notation	11.10.20	christianl
1.3.2	Updated Sound object spread step size	19.11.20	martinr
1.3.3	Added commands for Sound object to Function group	21.01.21	martinr
1.3.4	Speaker position and Function group added (DS100 V1.16.00), editorial changes	04.10.21	martinr
1.3.5	Coordinate mappings settings added	11.01.22	martinr

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## 1 Disclaimer of Warranty and Limitation of Liability

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## 2 Description

In addition to the AES70/OCA protocol, the DS100 supports the possibility to control a set of the functionality using the OSC protocol ([OSC 1.0 specification](#)). This allows control of the DS100 from devices or software that can send OSC messages.

The DS100 uses the UDP transport layer. The DS100 uses Port 50010 to listen for (receive) incoming messages, Port 50011 is used to send replies.

OSC is advertised via DNS-SD as **\_osc.\_udp**

### 2.1 General OSC path definition

```
<OSC path> : = /dbaudio1           // d&b identifier
              /module             // part of the signal path
              /name               // name
              /number             // in the matrix this is the input [nothing if not needed]
              /number             // in the matrix this is the output [nothing if not needed]

              value(s)
```

Example of setting a value (write):

```
/dbaudio1/matrixnode/enable/22/33 ,i 1
```

This command sets the Enable function at the crosspoint of input 22 and output 33 in the matrix to ON.

Example of retrieving a value (read):

```
/dbaudio1/matrixnode/enable/21/31 [without any value]
```

This command retrieves the state of the Enable function at the crosspoint of input 21 and output 31 in the matrix.

The response of the DS100 will be as follows:

```
/dbaudio1/matrixnode/enable/21/31 ,i 1
```

This response indicates that the Enable function at the crosspoint of input 21 and output 31 in the matrix is currently ON.

### 3 OSC definitions

#### 3.1 General settings

Identifier	Module	Name	Value/Type	Read/Write	Min	Max	Description/Comment
/dbaudio1	/settings	/devicename	, s	r/w	0	15	Will be overwritten by R1 project

#### 3.2 Error

Identifier	Module	Name	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/error	/gnrlerr	, i	r	0	1	Error flag
/dbaudio1	/error	/errortext	, s	r	0	31	Error string

#### 3.3 Status

Identifier	Module	Name	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/status	/statustext	, s	r	0	31	Status string

#### 3.4 Matrix input

Identifier	Module	Name	Input	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/matrixinput	/mute	/(1-64)	, i	r/w	0	1	Mute off=0 / on =1
/dbaudio1	/matrixinput	/gain	/(1-64)	, f	r/w	-120.0	24.0	
/dbaudio1	/matrixinput	/delay	/(1-64)	, f	r/w	0.0	500.0	
/dbaudio1	/matrixinput	/delayenable	/(1-64)	, i	r/w	0	1	Off=0 / on =1
/dbaudio1	/matrixinput	/eqenable	/(1-64)	, i	r/w	0	1	Off=0 / on =1
/dbaudio1	/matrixinput	/polarity	/(1-64)	, i	r/w	0	1	Off=0 / on =1
/dbaudio1	/matrixinput	/channelname	/(1-64)	, s	r/w	0	31	Will be overwritten by R1
/dbaudio1	/matrixinput	/levelmeterpremute	/(1-64)	, f	r	-120.0	0.0	
/dbaudio1	/matrixinput	/levelmeterpostmute	/(1-64)	, f	r	-120.0	0.0	

#### 3.5 Matrix node

The matrix crosspoint is disabled when the respective node is used for positioning.

Identifier	Module	Name	Input	Output	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/matrixnode	/enable	/(1-64)	/(1-64)	, i	r/w	0	1	Enable the matrix crosspoint
/dbaudio1	/matrixnode	/gain	/(1-64)	/(1-64)	, f	r/w	-120.0	10.0	
/dbaudio1	/matrixnode	/delayenable	/(1-64)	/(1-64)	, i	r/w	0	1	Enable the delay
/dbaudio1	/matrixnode	/delay	/(1-64)	/(1-64)	, f	r/w	0.0	500.0	

### 3.6 Matrix output

Identifier	Module	Name	Output	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/matrixoutput	/mute	/(1-64)	, i	r/w	0	1	Mute off=0 / on =1
/dbaudio1	/matrixoutput	/gain	/(1-64)	, f	r/w	-120.0	10.0	
/dbaudio1	/matrixoutput	/delay	/(1-64)	, f	r/w	0.0	500.0	
/dbaudio1	/matrixoutput	/delayenable	/(1-64)	, i	r/w	0	1	Off=0 / on =1
/dbaudio1	/matrixoutput	/eqenable	/(1-64)	, i	r/w	0	1	Off=0 / on =1
/dbaudio1	/matrixoutput	/polarity	/(1-64)	, i	r/w	0	1	Off=0 / on =1
/dbaudio1	/matrixoutput	/channelname	/(1-64)	, s	r/w	0	31	Will be overwritten by R1
/dbaudio1	/matrixoutput	/levelmeterpremute	/(1-64)	, f	r	-120.0	0.0	
/dbaudio1	/matrixoutput	/levelmeterpostmute	/(1-64)	, f	r	-120.0	0.0	

### 3.7 En-Scene positioning (only available if option is enabled)

Identifier	Module	Name	Input	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/positioning	/source_spread	/(1-64)	, f	r/w	0.0	1.0	Sound object spread (step 0.01 ; default 0.5)
/dbaudio1	/positioning	/source_delaymode	/(1-64)	, i	r/w	0	2	Sound object delay mode (off, tight, full)
/dbaudio1	/positioning	/source_position	/(1-64)	, fff	r/w			Sound object position absolute to the project origin x, y, z (values in meters)
/dbaudio1	/positioning	/source_position_xy	/(1-64)	, ff	r/w			Sound object position absolute to the project origin x, y (values in meters)
/dbaudio1	/positioning	/source_position_x	/(1-64)	, f	r/w			Sound object position absolute to the project origin x (values in meters)
/dbaudio1	/positioning	/source_position_y	/(1-64)	, f	r/w			Sound object position absolute to the project origin y (values in meters)

Identifier	Module	Name	Map-ping	Input	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/coordinatemapping	/source_position	/(1-4)	/(1-64)	, fff	r/w			Sound object position relative to the area x, y, z (values such as user defined scaling)
/dbaudio1	/coordinatemapping	/source_position_xy	/(1-4)	/(1-64)	, ff	r/w			Sound object position relative to the area x, y (values such as user defined scaling), no height
/dbaudio1	/coordinatemapping	/source_position_x	/(1-4)	/(1-64)	, f	r/w			Sound object position relative to the area x (values such as user defined scaling)
/dbaudio1	/coordinatemapping	/source_position_y	/(1-4)	/(1-64)	, f	r/w			Sound object position relative to the area y (values such as user defined scaling)

### 3.8 En-Space room settings (only available if option is enabled)

Identifier	Module	Name	Value/Type	Read/Write	Min	Max	Description/Comment
/dbaudio1	/matrixsettings	/reverbroomid	, i	r/w	0	9	Room selector
/dbaudio1	/matrixsettings	/reverbpredelayfactor	, f	r/w	0.2	2.0	Predelay factor
/dbaudio1	/matrixsettings	/reverbrearlevel	, f	r/w	-24.0	24.0	Rear level

### 3.9 En-Space input (only available if option is enabled)

Identifier	Module	Name	Input	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/matrixinput	/reverbsendgain	/(1-64)	, f	r/w	-120.0	24.0	Gain sent to En-Space

### 3.10 En-Space input matrix (only available if option is enabled)

Zone 1 is on the left (seen from the audience)

Zone 2 is in the center (seen from the audience)

Zone 3 is on the right (seen from the audience)

Zone 4 is the audience

Identifier	Module	Name	Input	Zone	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/reverbinput	/gain	/(1-64)	/(1-4)	, f	r/w	-120.0	24.0	

### 3.11 En-Space input processing (only available if option is enabled)

Zone 1 is on the left (seen from the audience)

Zone 2 is in the center (seen from the audience)

Zone 3 is on the right (seen from the audience)

Zone 4 is the audience

Identifier	Module	Name	Zone	Value/Type	Read/Write	Min	Max	Description
/dbaudio1	/reverbinputprocessing	/mute	/(1-4)	, i	r/w	0	1	
/dbaudio1	/reverbinputprocessing	/gain	/(1-4)	, f	r/w	-120.0	24.0	
/dbaudio1	/reverbinputprocessing	/levelmeter	/(1-4)	, f	r	-120.0	0.0	
/dbaudio1	/reverbinputprocessing	/eqenable	/(1-4)	, i	r/w	0	1	

### 3.12 Device clear

Identifier	Module	Name	Value/Type	Read/Write	Description
/dbaudio1	/device	/clear	-	w	Resets the device to factory defaults, except the remote settings



### 3.13 Scenes

OSC commands are used to recall scenes. Scenes have to be created using R1.

Identifier	Module	Name	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/scene	/previous	-	w			
/dbaudio1	/scene	/next	-	w			
/dbaudio1	/scene	/recall	, i	w	0	999	Format "major".
/dbaudio1	/scene	/recall	, i i	w	0, 0	999, 99	Format "major", "minor". Smallest index 0, 1
/dbaudio1	/scene	/sceneindex	, s	r	0	7	Format "major.minor"
/dbaudio1	/scene	/scenename	, s	r	0	31	
/dbaudio1	/scene	/scenecomment	, s	r	0	127	

### 3.14 En-Scene Sound object routing

Identifier	Module	Name	Function group	Sound object	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/soundobjectrouting	/mute	/(1-16)	/(1-64)	, i	r/w	0	1	Mutes the Sound object for this function group
/dbaudio1	/soundobjectrouting	/gain	/(1-16)	/(1-64)	, f	r/w	-120.0	10.0	

### 3.15 En-Scene Function group

Not all function groups support Spread factor and delay. For more information see TI 501.

Identifier	Module	Name	Function group	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/functiongroup	/name	/(1-16)	, i	r	0	15	Name of the function group
/dbaudio1	/functiongroup	/spreadfactor	/(1-16)	, f	r/w	0.5	2.0	Spread factor of a function group
/dbaudio1	/functiongroup	/delay	/(1-16)	, f	r/w	0.0	500.0	Delay of a function group

### 3.16 En-Scene Speaker position

Identifier	Module	Name	Position	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/positioning	/speaker_position	/(1-64)	, f f f f f f	r			Speaker/s position absolute to the project origin x, y, z(values in meters), hor, vert, rot (values in degrees)

### 3.17 En-Scene Coordinate mapping settings

Identifier	Module	Name	Mapping	Value/ Type	Read/ Write	Min	Max	Description
/dbaudio1	/coordinatemappingsettings	/p1_real	/(1- 4)	, f f f	r			P1 position of the coordinate mapping absolute to the project origin x, y, z(values in meters)
/dbaudio1	/coordinatemappingsettings	/p2_real	/(1- 4)	, f f f	r			P2 position of the coordinate mapping absolute to the project origin x, y, z(values in meters)
/dbaudio1	/coordinatemappingsettings	/p3_real	/(1- 4)	, f f f	r			P3 position of the coordinate mapping absolute to the project origin x, y, z(values in meters)
/dbaudio1	/coordinatemappingsettings	/p4_real	/(1- 4)	, f f f	r			P4 position of the coordinate mapping absolute to the project origin x, y, z(values in meters)
/dbaudio1	/coordinatemappingsettings	/p1_virtual	/(1- 4)	, f f f	r			Virtual x, y, z coordinate of point P1 of the coordinate mapping
/dbaudio1	/coordinatemappingsettings	/p3_virtual	/(1- 4)	, f f f	r			Virtual x, y, z coordinate of point P3 of the coordinate mapping
/dbaudio1	/coordinatemappingsettings	/flip	/(1- 4)	, i	r	0	1	Swaps coordinates order of OSC messages (0 = x, y and 1 = y, x)
/dbaudio1	/coordinatemappingsettings	/name	/(1- 4)	, s	r	0	31	Name of the coordinate mapping

