DBS 1

Quick User Guide

Version 1.0.0

14.11.2013

The full manual can be downloaded from here:

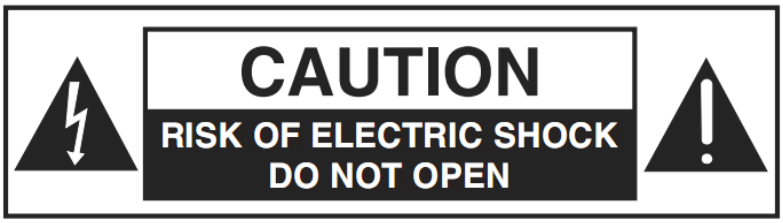
www.fouraudio.com/en/products/dbs1.html

1 Important Safety Information

This device has been manufactured and tested with your safety in mind. However, improper use can result in potential electric shock or fire hazards.

To avoid defeating the safeguards that have been built into the device, please observe the precautions discussed in this document.

Warnings on the device



The lightning flash with arrowhead symbol, within a triangle, is intended to alert you to the presence of uninsulated “dangerous” voltages within your device’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within a triangle is intended to alert you to the presence of important instructions in the literature accompanying the device.

Other warnings

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER OF THE DEVICE.

THERE ARE NO USER-SERVICEABLE PARTS INSIDE IT.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE.

DO NOT PERFORM ANY SERVICING UNLESS YOU ARE QUALIFIED TO DO SO BY FOUR AUDIO.

REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL.

SERVICING THE DEVICE YOURSELF WILL INVALIDATE THE WARRANTY.

Ventilation

Slots and openings in the casing of the device are provided for ventilation, to ensure reliable operation of the device and to protect it from overheating.

Never block the ventilation openings by placing the device on a bed, sofa, rug or other similar surface;

Never cover the ventilation openings with items such as newspapers, table-cloths etc.

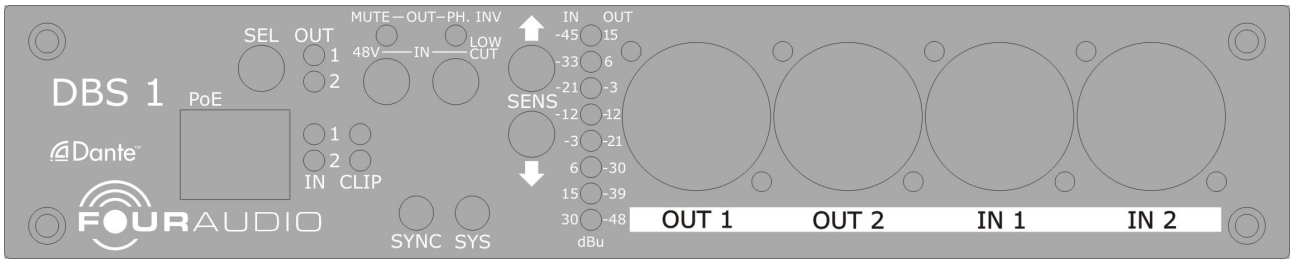
Do not place the device in a built-in installation such as a bookcase or rack unless proper ventilation is provided or you have adhered to the manufacturer’s instructions;

Water and moisture

Do not expose this device to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the device

SAVE THIS INFORMATION FOR FUTURE REFERENCE

2 Front panel



Each input and output can be configured individually. Depending on input/output selection some elements have different meanings.

LEDs

Element	**Function / Meaning**	
OUT 1	Output 1 selected	
OUT 2	Output 2 selected	
IN 1	Input 1 selected	
IN 2	Input 2 selected	
CLIP 1	Indicates clipping of input 1	
CLIP 2	Indicates clipping of input 2	
MUTE / 48V	Output: Mute On	Input: Phantom Power On
PH.INV / LOW CUT	Output: Phase Invert On	Input: Low Cut On
SYNC	see table below	
SYS	see table below	
LINK	Ethernet connection established	
ACT	blinks on network activity	
SENS (8 LEDs)	see table below	

Push Buttons

Element	**Function / Meaning**		
SEL	Selection of Input / Output see table below		
MUTE / 48V	On / Off	Output: Mute	Input: Phantom Power
PH.INV / LOW CUT	On / Off	Output: Phase Invert	Input: Low Cut
UP	Selection of input sensitivity / output range		
DOWN	Selection of input sensitivity / output range		

3 Usage

3.1 Power Supply

DBS 1 can be powered by the provided 5 V desktop power supply or by power over ethernet (PoE).

The desktop power supply can be connected to the jack on the rear. External power supply and PoE can be used simultaneously to achieve redundancy. The metal bracket on the rear provides a pull relief.

3.2 Channel Selection

Pushing button SEL steps through the following six states for channel selection.

State	Selected Channel(s)
1	Out 1+2
2	In 1+2
3	Out 1
4	Out 2
5	In 1
6	In 2

After state 6 it turns over to state 1.

While stepping through the selected channels the LEDs are updated to display the current settings.

The settings of the selected channel(s) can be changed by pushing one of the other four buttons. Each button has a different meaning depending on the selection of input or output as shown in previous chapter.

If two channels are selected (state 1 and 2) the LEDs are showing settings of channel 1 only! It is not indicated if channel 2 has a different setting! Parameter changes are relative to the current setting of channel 1 and copied to channel 2.

3.3 Sensitivity

The front panel imprint shows 8 out of 22 possible **output** ranges. If a “fine step” range is selected, the two LEDs above and below the selected value are lit as shown in the table below. Up and down button changes the state. State 1 and 22 are endpoints, there is no turn over to the other end of the scale.

State	LEDs lit	Output ranges [dBu]	V_{eff}	V_{peak}
1	**15**	**15**	**4,36 V**	**6,16 V**
2	6 & 15	12	3,08 V	4,36 V
3	6 & 15	9	2,18 V	3,09 V
4	6	6	1,55 V	2,19 V
5	-3 & 6	3	1,09 V	1,55 V
6	-3 & 6	0	775 mV	1,10 V
7	-3	-3	548 mV	776 mV
8	-12 & -3	-6	388 mV	549 mV
9	-12 & -3	-9	275 mV	389 mV

10	-12	-12	195 mV	275 mV
11	-21 & -12	-15	138 mV	195 mV
12	-21 & -12	-18	97,5 mV	138 mV
13	-21	-21	69,0 mV	97,6 mV
14	-33 & -21	-24	48,9 mV	69,1 mV
15	-33 & -21	-27	34,6 mV	48,9 mV
16	-30	-30	24,5 mV	34,6 mV
17	-33 & -36	-33	17,3 mV	24,5 mV
18	-33 & -36	-36	12,3 mV	17,4 mV
19	-39	-39	8,69 mV	12,3 mV
20	-39 & -48	-42	6,15 mV	8,70 mV
21	-39 & -48	-45	4,36 mV	6,16 mV
22	-48	-48	3,08 mV	4,36 mV

Bold values are factory default values. All functions can be set individually for each channel.

The front panel imprint shows 8 out of 24 possible **input** sensitivity settings. If a “fine step” sensitivity is selected, the two LEDs above and below the selected value are lit as shown in the table below. Up and down button changes the state. State 1 and 24 are endpoints, there is no turn over to the other end of the scale.

State	LEDs lit	Input Sensitivities [dBu]	V_{eff}	V_{peak}
1	-45	-45	4,36 mV	6,16 mV
2	-45 & -33	-42	6,15 mV	8,70 mV
3	-45 & -33	-39	8,69 mV	12,3 mV
4	-45 & -33	-36	12,3 mV	17,4 mV
5	-33	-33	17,3 mV	24,5 mV
6	-33 & -21	-30	24,5 mV	34,6 mV
7	-33 & -21	-27	34,6 mV	48,9 mV
8	-33 & -21	-24	48,9 mV	69,1 mV
9	-21	-21	69,0 mV	97,6 mV
10	-21 & -12	-18	97,5 mV	138 mV
11	-21 & -12	-15	138 mV	195 mV
12	-12	-12	195 mV	275 mV
13	-12 & -3	-9	275 mV	389 mV
14	-12 & -3	-6	388 mV	549 mV
15	-3	-3	548 mV	776 mV
16	-3 & 6	0	775 mV	1,10 V
17	-3 & 6	3	1,09 V	1,55 V
18	6	6	1,55 V	2,19 V
19	6 & 15	9	2,18 V	3,09 V

20	6 & 15	12	3,08 V	4,36 V
21	**15**	**15**	**4,36 V**	**6,16 V**
22	15 & 30	18	6,15 V	8,70 V
23	15 & 30	21	8,69 V	12,3 V
24	30	30	24,5 V	34,6 V

Bold values are factory default values. All functions can be set individually for each channel.

A short form of both tables can be found on the rear of the unit.

3.4 Mute

If an output channel is selected button MUTE/48V toggles MUTE between ON and OFF.

3.5 Phase Invert

If an output channel is selected button PH.INV/LOW CUT toggles PHASE INVERT between ON and OFF.

3.6 Phantom Power

If an input channel is selected button MUTE/48V toggles 48V PHANTOM POWER between ON and OFF.

3.7 Low Cut Filter

If an input channel is selected button PH.INV/LOW CUT toggles the analog low cut filter between ON and OFF.

3.8 Status of Dante interface

The status of the Dante interface is displayed with LEDs SYNC and SYS as shown in table below.

Color	LEDs	Description
SYS red	SYS	System booting
SYS green	SYS	System ready
SYNC amber	SYNC	PTP currently syncing
SYNC red	SYNC	PTP error / no PTP sync / PTP disabled
SYNC green	SYNC	PTP slave, with PTP sync
SYNC green flashing	SYNC	PTP master
All flashing green	SYS + SYNC	Identify
All flashing amber	SYS + SYNC	Firmware upgrade in progress

All flashing red	SYS + SYNC	Failsafe – corrupt or missing application image

Note: PTP = Precision Time Protocol (One device in the Dante audio network is the Dante clock master. all other devices are Dante clock slaves synchronized by PTP.)

3.9 Remote Control

DBS 1 is prepared for remote controlling all parameters. Please check for availability of new software on our homepage.

3.10 Dante settings

All Dante features can be configured and monitored with *Dante Controller* which is a software application provided by Audinate, the inventor of Dante. *Dante Controller* and its user manual can be downloaded from Audinate's homepage:

www.audinate.com Home => Support => Software Downloads => Dante Controller

If you are not familiar with the Dante Audio network we strictly recommend to read the user manual of the *Dante Controller* software first and check their FAQ!

FAQ http://dev.audinate.com/kb/webhelp/home.htm

Many options, features and behaviours which a user expects to be device specific are actually Dante specific. Thus, most of the following explanations are taken from the Dante Controller user manual or online FAQ. These passages are highlighted in grey.

Please ensure to use latest version of Dante Controller: 3.4.2 or higher.

4 Network Setup

Automatic network configuration

A Dante-enabled device connected to a network will automatically set up its own network configuration, including its IP address.

If the network has a DHCP server, which may be the case for installed networks, it will receive its IP configuration using the standard DHCP protocol.

On a network without a DHCP server, which may be the case for temporary or smaller networks, the Dante-enabled device will automatically assign itself an address using link local protocols, in the same way PCs and printers often do.

4.1 Troubleshooting Switch Configuration and Cabling

Cables are the most vulnerable part of a network system.

If you suspect cabling issues, check for:

- Faulty or manually terminated cables
- Unplugged /badly connected Ethernet cables
- Misconfigured switches
- Dante devices removed or turned off

Symptoms of switch or cabling issues

- You cannot see (some) devices in the Dante Controller network view
- Dante Controller shows orange “unsuccessful subscription” icons, which usually means a device that was present earlier is now missing
- Faulty cables can lead to intermittent faults, which may be heard as dropped samples or “cracks” in the audio
- Dante devices may appear and disappear in Dante Controller

Switch and Cabling Checklist

- Are all the connected link/status lights on the switch lit or flashing as expected?
- Is the switch powered on?
- Is the cable correctly plugged in at the switch and the PC or equipment?
- Is the switch correctly configured?
- Perhaps QoS or VLANs have been incorrectly set up
- Are you using a switch from another application with an unchecked or tested configuration?
- Consult the switch manual and check the switch configuration.