LOG
PROFESSIONAL

Operating Manual

BETA

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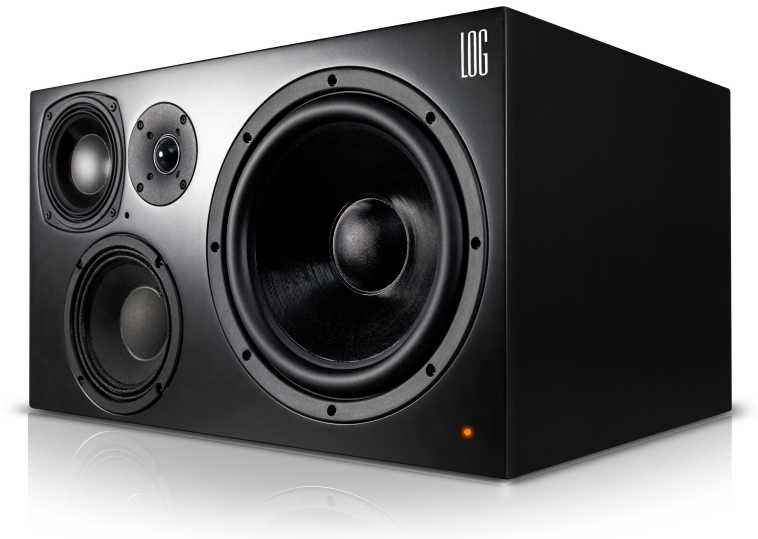

Digitally Optimized, Active High-End Studio Monitor

Congratulations on your purchase of a high-quality studio monitor from LOG Professional, manufactured under strict quality and environmental standards. In order to make optimal use of all performance features, please read these operating instructions carefully. We advise you to keep this manual for future reference.

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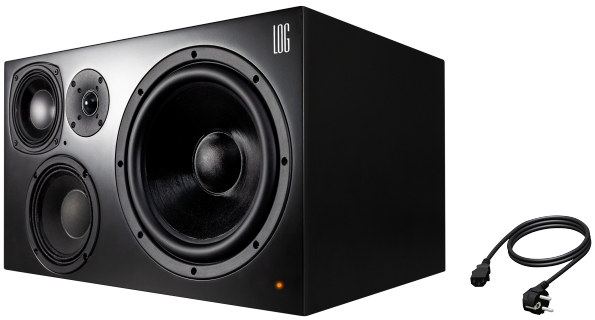
Delivered Items

1 x BETA studio monitor
1 x Power cord



Installation

- Before unpacking, make sure that you do not touch the loudspeaker chassis when carefully removing the loudspeaker from the packaging.

- Before placing the BETA on a stand, table or mixer, make sure it can support the speaker‘s weight (approx. 7 kg). Also make sure that the floor is sufficiently large to prevent it from tipping over. It is important to pay attention to the center of gravity.

- As an active studio monitor, the BETA requires its own power supply. To do this, connect your BETA studio monitor to your power outlet using the supplied power plug. The power supply unit of the BETA accepts mains voltages between 110 V and 230 V AC and mains frequencies between 50 and 60 Hz. There is no difference in the power output of the amplifier between 110 V and 230 V mains voltage. Make sure that the speaker is only switched on after it has been connected to the power supply.
  Important note: Only connect the loudspeaker to a socket with an earth connection!
  Important note: The I/O switch serves as a separation point to de-energize the device.

- Do not place the speaker in direct sunlight or near/over a radiator (or other heat source).

- Leave at least 10 cm of space around the device to ensure adequate air circulation.

- Do not place objects filled with liquids or open flame sources on the device.

- The ambient conditions for this device are +5 to +40 °C with a relative humidity of up to 80%.

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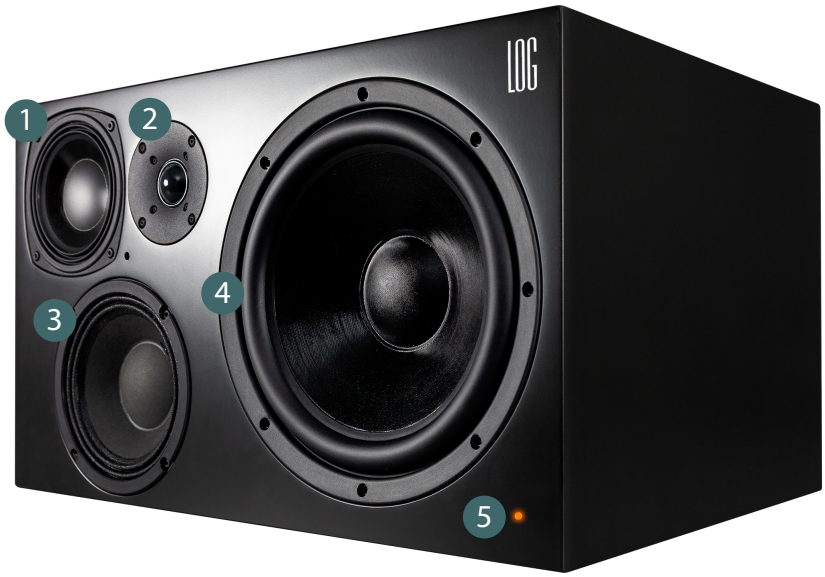
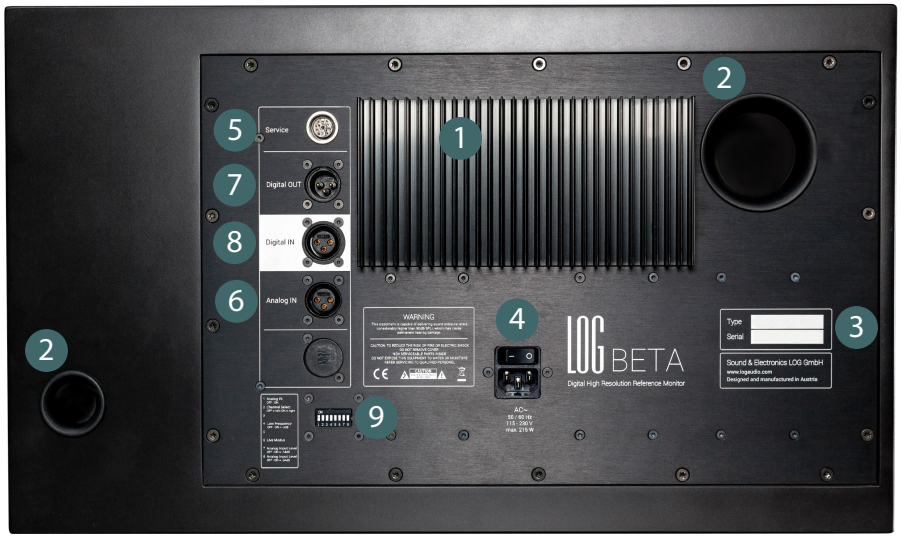
Front

1. 5“-midrange speaker with paper cone
2. 1“-dome tweeter with coated textile membrane
3. 6.5” midrange speaker with coated paper cone
4. 10“-bass speaker with coated paper membrane
5. LED activity indicator



Back



1. Cooling fins
2. Bass reflex hole
3. Serial number
4. On/Off switch or power connection
5. Service socket
6. Analog IN
7. Digital IN (AES/EBU)
8. Digital OUT (AES/EBU)
9. DIP switches

Connecting Audio Sources

The BETA studio monitor has a digital and an analog connection for playing back audio signals.

Digital Input (AES/EBU)

For maximum performance and lossless, digital signal transmission, we recommend using the digital AES/EBU input. Connect your BETA studio monitor to the digital AES/EBU output of your audio source (sound card, audio interface or similar) using a digital XLR audio cable (110 ohms).

Important note: Make absolutely sure that you only operate the digital input with volume control, i.e. the volume must be controlled before the signal goes into the speaker. Digital outputs usually output an uncontrolled audio signal at full volume, which can lead to hearing loss and damages on the speaker. Therefore, make sure in advance whether the volume can be controlled via your output device. If in doubt, ask the respective manufacturer of your output device.

Digital Output

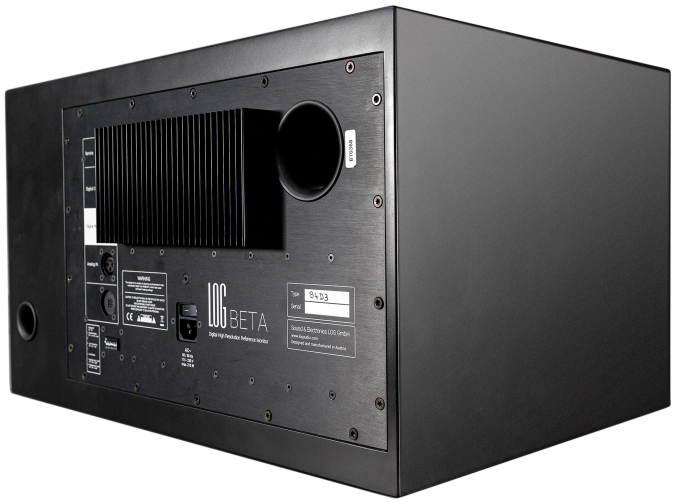
With the BETA it is also possible to send the incoming digital signal directly to another loudspeaker via the digital output. However, it is important to define the speaker as the left or right channel via the 2nd DIP switch:
ON = right channel OFF = left channel

Analog Input

Audio interfaces or mixers with an analog output can be connected to the analog input of the BETA via an XLR cable. Please note that the sound quality can be strongly influenced by your output device or its A/D converter. In digital operation (i.e. digital signal via digital AES/EBU input), the loudspeaker usually delivers better performance because the influences of external converters are bypassed.

Important notice: If the loudspeaker is operated exclusively via the digital input, it is advisable to deactivate the analog input via the 1st DIP switch to avoid interferences and noise.

ON = Analog XLR-Input is active
OFF = Analog XLR-Input is deactivated



LED Indicator

The LED indicator on the front can show the following states.

- Off: The speaker is switched off or disconnected from the power supply
- Flashing orange: The speaker starts up and is ready for use after a few seconds
- Permanent orange: The speaker is ready to use
- Permanent red: Standby-Mode (automatically after 2 hours of inactivity)

DIP-Switch-Settings

With a DIP switch on the back of the device it is possible to make the following settings:

1	ON = Analog XLR-Input is active	OFF = Analog XLR-Input is deactivated
2	ON = Speaker is set as right channel	OFF = Speaker is set as left channel
3		
4	ON = -3dB reduction at 30 Hz	OFF = no reduction
5	ON = Auto-Sleep-Mode (after 2h) is active	OFF = Auto-Sleep-Mode inactive
6	ON = Live-Mode activated (low latency)	OFF = Live-Mode deactivated
7	ON = Analog Input -18dB	OFF = Standard Settings
8	ON = Analog Input -24dB	OFF = Standard Settings

Deactivate Analog Input (1)

To avoid interference and noise, the analog input can be deactivated if the speaker is operated via the digital AES/EBU input.

Define Speakers as right/left (2)

Since both channels are transferred via an AES/EBU signal, the device can be defined as a right or left loudspeaker. The loudspeaker then only reproduces the respective (either right or left) signal. If a second loudspeaker is played via the digital output of the BETA, both channels are sent to the second loudspeaker, i.e. the second speaker must also be defined as left or right via the DIP switch.

-3dB Lowering at 30 Hz (4)

Since some room conditions can cause the bass frequencies to be excessive, they can be lowered by -3dB at 30 Hz by activating the 4th DIP switch.

Auto-Sleep-Mode (5)

With auto-sleep mode active, the speaker will automatically go into standby mode after 2 hours of inactivity to extend the life of the power amplifiers. As soon as a signal is detected, this mode deactivates automatically.

Activating Live Mode (6)

This DIP switch enables the zero-latency live mode, which is described in more detail below.

Reduction of the Analog Input Level (7 & 8)

Since a higher output level is used in the radio/broadcast sector, the input level can be lowered by -18db (DIP switch 7) or by -24db (DIP switch 8) for these applications. This setting must be made on all loudspeakers that are in operation at the same time.

Live-Mode

The technology of the LOG AudioEngine inside each LOG speaker is based on complex digital technology and the perfect interaction of many different components. A latency of approx. 28 ms occurs due to the use of particularly computationally intensive FIR filters, which enable phase-linear reproduction thanks to their point-by-point imaging. By activating the live mode via DIP switch switch no. 6, it is possible to switch from the computationally intensive FIR filters to latency-free IIR filters. This is associated with minor losses in sound, but enables latency-free work, which is particularly relevant for recording sessions.

Digital Room Correction

The LOG AudioEngine enables phase-linear, digital room correction. The loudspeaker can thus be adapted to the spatial conditions without having to make any physical changes on the speaker. For more information about this service, please contact us directly or a LOG dealer.

Auto-Sleep-Mode

The BETA automatically switches to stand-by mode after two hours of inactivity in order to avoid unnecessary power consumption. With the automatic wake-up functionality, the BETA studio monitors are automatically reactivated when an audio signal is received. Accordingly, the loudspeakers can easily remain permanently connected to the power supply without affecting the energy consumption or the service life of the product. The standby mode is indicated by the red LED on the front.

Note: It is advisable to let the loudspeakers (or the Class A/B power amplifiers installed in them) warm up for a few minutes if they were previously switched off completely. The reason for this is that the power amplifiers reach their full sound level at a certain degree of heat.

Positioning in the Room and Sound Optimization

In order to achieve an optimal sound experience, it is advisable to observe the following points:

- Observe the recommended distances from the speakers to your listening position:
  Minimum: 0,75 m / Recommended: 1-2 m / Maximum: 3 m
- Position the speakers so that they is a 30 degree angle from the center of the listening position on both sides. Rotate the speakers so they are pointed straight at the listening position. The deviation in the distance between the listening position and the two loudspeakers should not be more than 1 cm.
- Avoid placing other objects (e.g. screen) between the speakers and the listening position. It is important that the sound can propagate unhindered.
- A minimum distance of 1 m to the wall behind the speaker should be maintained. If the loudspeaker is too close to the wall, this can lead to over-boost of the lower frequencies.
- An exaggeration of the low frequencies can be corrected using DIP switch switch no. 4, resulting in -3dB at 30 Hz.
- Make sure your room has adequate acoustic damping. Too much reverb negatively affects the music signal. Acoustic elements, upholstered furniture or carpets can support good room acoustics and contribute to pleasant damping. Arrange all acoustically relevant surfaces and objects in the room symmetrically around the listening axis. For optimal room acoustics, please contact a specialist.

Note: There are no rules that apply to all environments. Nevertheless, it is advisable to consider the above points.

Safety Instructions

Please keep the safety instructions in mind when using the BETA, otherwise warranty and guarantee claims will be void.

- Do not expose to rain or moisture. There is a risk of fire and damage.
- Do not use near liquids.
- Do not place any burning objects (candles, etc.) next to or on top of the speaker.
- Do not place near heat sources.
- Use only with original manufacturer accessories.
- Do not connect the speaker to an AC outlet during a thunderstorm.

Hearing Damage

The BETA loudspeakers can reach a sound pressure level higher than 90dB (SPL), which could cause hearing damage. To avoid hearing damage, only use the BETA speakers at high volume for short periods of time. To be on the safe side, set the volume to an appropriate level. The higher the volume, the faster hearing damage can occur.

Repair

The BETA studio monitors must not be unscrewed or disassembled. There is a risk of an electric shock if the housing is opened without permission. All necessary repairs are to be carried out exclusively by a service partner or manufacturer, otherwise the warranty and guarantee claim will expire.

Maintenance

The loudspeakers are maintenance-free. Only clean the paintwork surface with a soft, dry to slightly damp cloth or a feather duster. Do not use scouring powder, alcohol, petrol, polish, wax or other similar agents or liquids. Do not place the BETA in an environment that is too humid. Frequent changes in temperature, humidity and excessive sunlight will damage the speaker and may change its appearance. If the loudspeaker is destroyed by improper use, contact the manufacturer and find out about repair options. The speaker membrane should not be touched.

Guarantee and Warranty

The warranty for this product corresponds to the statutory provisions at the time of purchase. In addition, LOG Professional offers a guarantee of 3 years from the date of purchase. Modifications to the device will void the manufacturer‘s guarantee and warranty.

Disposal

Never dispose of the BETA with normal household waste. It is strongly recommended to take the product to an official collection point. Find out about the local regulations for separate collection of electrical and electronic equipment and follow them carefully. Proper disposal of old products helps to avoid negative impacts on the environment and human health.

Troubleshooting

Problem	Possible Cause	Solution
No sound	Analog input is deactivated	Activate the analog input via DIP switch switch #1.
	Using the wrong input	Make sure that analog sources are only connected via the analog input and digital sources only via the digital input
	No input signal	Check that your audio source is outputting the signal through the correct output.
	No power supply	Make sure the speakers are connected to power. This is indicated by the LED light on the front of the speaker.
	Audio source is on mute	Make sure you haven‘t muted the volume on the audio source. Slowly increase the volume slider.
Signal too weak	Input signal is too quiet	Increase the volume on the audio source.
	Analog input level lowered	Turn off DIP switches #7 and #8 to turn off the decrease of analog input levels.
Signal too loud	Input Signal too loud	Lower the volume on the audio source.
	Input Signal too loud	Activate DIP switch no. 7 or 8 (depending on the volume) to lower the analog input level by -18db or -24db.
Phase shift effect	Speakers are not positioned correctly	Make sure that the listening distance to both loudspeakers is the same. The deviation should not be more than 1 cm.
Insufficient reproduction of the bass frequencies	DIP switch no. 4 is enabled	Deactivate the lowering of the bass frequencies via DIP switch no. 4
No stereo effekt	Channel select not set correctly (with digital input)	Make sure the speakers are defined as left/right speakers in digital mode
Humming noise or buzzing noise	Defective cable, wrong wiring or there is a ground loop	Check the wiring. Make sure the noise is not co-ming from the audio source.

Symbol Definition


W012 Danger of electrical voltage


W001 General warning sign


According to the Electrical and Electronic Equipment Act - ElektroG 2015, electrical and electronic equipment is marked with a crossed-out wheeled bin, which must be returned to waste material collection points, recycling centers or electrical equipment dealers intended for disposal so that the materials and components contained can be disposed of safely or processed in a resource-saving manner and then recycled .

Technical Data

Speakers	4-way bass-reflex: 1 x 10“ bass speaker (paper cone) 1 x 6.5“ Bass-/midrange speaker (paper cone) 1 x 5“ midrange speaker (paper cone) 1 x 1“ tweeter (fabric dome)
Crossover Frequencies	400 Hz / 1.000 Hz / 2.8 kHz
Frequency Range	28 - 22 000 Hz
Digital Input	AES/EBU, 96 kHz / 24 bit (XLR)
Analog Input	A/D-C 96 kHz / 24 bit (XLR)
Digital Output	AES/EBU, 96 kHz / 24 bit (XLR)
DIP-Switch	(1) Analog IN: mute / active (2) Channel Select: right / left (4) Low frequency: off / -3dB, 35 Hz (5) Sleep Mode: on / off (6) Live Mode: on / off (7) Lowering Analoger Input Level -18dB: on / off (8) Lowering Analoger Input Level -24dB: on / off Analog input level at 0 dBFS: -1dBV (-10 dBV @ -9dBFS) +18dBu (0dBu @ -18dbFS ITU/EBU) +24dBu (+4dBu @ -18dBFS SMPTE)
Internal Performance Features	96 kHz, 24 bit
	State-of-the-art ASRC
	Jitter minimized master clock generator
Digital Crossover Unit	Linear-phase FIR filter
Power amplifier	Class-A/B 4 x 80 W (max. 0,008 % THD+N @ 1 W total distortion)
Max. power	220 W
Maximum SPL	115dB
Input impedance	10kΩ
Activity indicator	LED orange / red
Dimensions (W x H x D)	540 x 340 x 400 mm (21.3“ x 13.4“ x 15.7“)
Weight	17 kg / 37.5 lbs