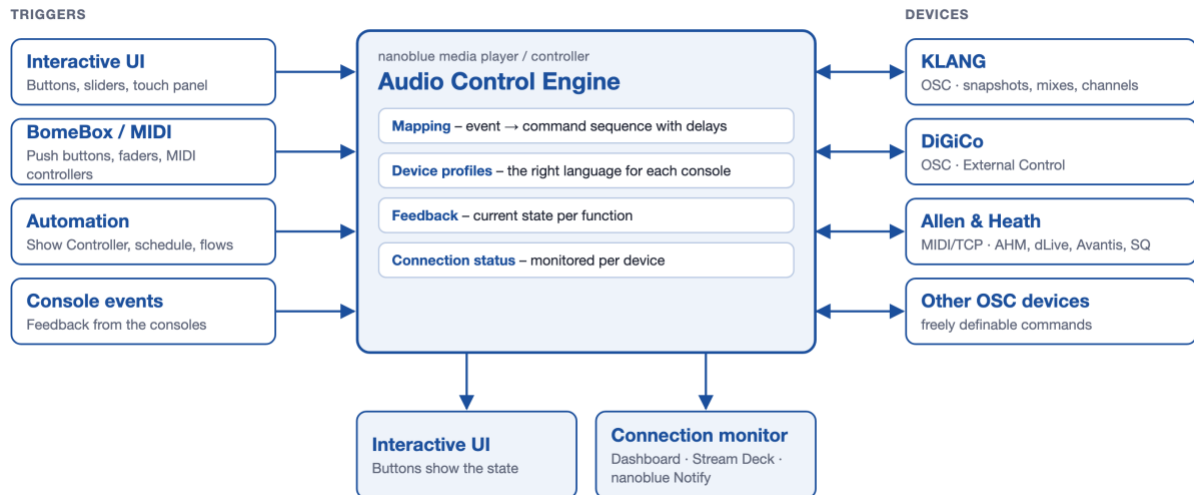


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nanobblue® Audio Control

Control and link mixing consoles and audio systems – KLANG, DiGiCo, Allen & Heath and BomeBox in one building block



Overview: buttons, MIDI push buttons, workflows and feedback from the consoles trigger commands. The Audio Control Engine translates them into the language of each device and reports state and connection back.

What it is about

Venues, theatres, churches and conference rooms often run several audio systems side by side: a FOH console, an in-ear monitoring system, a matrix processor for room PA. Each system speaks its own language. Operating them together or linking them to each other has so far required a custom solution for every project.

nanobblue Audio Control is a ready-made building block for the nanobblue media player and controller. It speaks **OSC** (KLANG, DiGiCo and other OSC devices) and **MIDI over TCP** (Allen & Heath). It accepts commands from buttons in the Interactive UI, from MIDI push buttons via a BomeBox or from other workflows. It monitors every connection. A new project needs no programming, only configuration: which devices exist and what should happen on which event.

The engine runs directly on the nanobblue device in the local network of the installation. It responds instantly and needs no internet connection.

Key features

Controlling consoles and audio systems

The same simple functions are available for every device. The engine translates them into the matching protocol:

Function	What happens
Snapshot / scene	Recall a snapshot, scene or preset by number; with KLANG and DiGiCo also next / previous
Store snapshot	Save the current state to the active snapshot (KLANG)
Mute	Mute and unmute a channel, bus, zone or mix
Level	Set a fader or gain value in dB, e.g. zone 1 to -10 dB
Custom command	Any OSC command or MIDI message the device understands – for special functions

A command always consists of device, function and target, e.g. “KLANG, snapshot, 3” or “DiGiCo, mute, input 5”. This lets buttons, sliders and workflows be connected without any protocol knowledge.

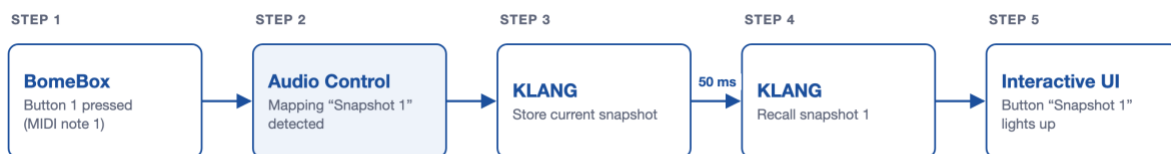
Connecting push buttons and MIDI controllers (BomeBox)

A BomeBox connects MIDI push buttons, foot switches or controllers to the network. Audio Control provides an input for this to which the BomeBox connects directly: in the BomeBox, the nanoblue device is entered like an Allen & Heath console. No additional software is required.

- **Learning:** every key that has no task yet appears in the log with its channel and note. This makes it quick to see which key sends which message.
- **Faders:** rotary controls and faders of a MIDI controller can control levels directly, e.g. the volume of a zone.
- **Monitored:** the connection monitor shows whether the BomeBox is connected. A disconnected network cable is detected within a few seconds.

Mappings and command sequences

A mapping defines what happens on an event. An event can be a key on the BomeBox or feedback from a console. A mapping can trigger several commands in sequence, also to different devices, with freely adjustable delays in between.



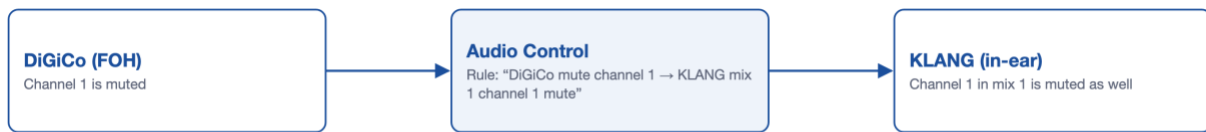
One event triggers a sequence of commands. Delays between the steps are freely adjustable.

Real-world example: a key first stores the current KLANG snapshot and recalls the next one 50 ms later. The corresponding button in the Interactive UI lights up.

- **Passing on values:** the value of a fader or of a feedback message can be passed into the command, e.g. MIDI fader → level in dB or “console A muted” → “console B muted”.
- **Testing without the installation:** every mapping can be run through in the nanoblue Editor as if the key had been pressed.

Linking consoles

Because feedback from the consoles is an event as well, devices from different manufacturers can be linked without knowing about each other.



Consoles from different manufacturers stay in sync: feedback from one console becomes commands to another.

Mute on the FOH console also mutes the same channel in the in-ear mix.

Operation via the Interactive UI and other workflows

- **Interactive UI:** buttons and sliders on the touch panel trigger commands. The feedback shows which snapshot is active and which channel is muted – the button lights up accordingly.
- **Show Controller and schedule:** cues in a show or appointments in the schedule can trigger audio commands, e.g. scene “Interval” at 8:15 pm.
- **Other workflows:** any flow in the nanoblue Editor can send commands, e.g. after a room change or a sensor event.

Connections at a glance

Every device registers with the nanoblue connection monitor. It shows the state as a traffic light in the dashboard, as a lamp in the Interactive UI, on the Stream Deck and, if desired, via nanoblue Notify (Telegram, push) when a connection is down for a longer time.

State	Meaning
connected	Connection is up or the device has responded
unknown	No statement possible yet, e.g. right after start-up
disconnected	Device does not respond or connection lost; dependent buttons are greyed out
error	Setting does not fit, e.g. port already in use

Many audio protocols do not acknowledge a command. Audio Control therefore additionally checks whether the device can be reached on the network and – where the device supports it – regularly polls for a response. A brief network dropout does not raise an alarm.

Supported devices

Device	Connection	Functions	Status
KLANG (vokal, fabrik, konductor)	OSC, UDP	Recall / store / next / previous snapshot, mute, level per mix and channel, response polling	proven in customer use
DiGiCo SD / Quantum	OSC ("External Control")	Snapshot, next / previous, mute and fader for inputs, aux, groups, matrix, control groups	implemented; addresses verified during commissioning
Allen & Heath AHM	MIDI over TCP	Preset, mute and level for inputs, zones, control groups, rooms; real feedback from the device	implemented according to manufacturer protocol
Allen & Heath dLive, Avantis	MIDI over TCP	Scene, mute and level for inputs, groups, aux, matrix; feedback from the console	implemented; verified during commissioning
Allen & Heath SQ	MIDI over TCP	Scene, input mute, custom MIDI commands	implemented; verified during commissioning
BomeBox	Input (A&H network MIDI)	Keys, faders and controllers as triggers, learning of unknown keys	proven in customer use
Other OSC devices	OSC, UDP	Custom OSC commands; individual command templates per device possible	available

Setup

- **In the nanobblue Editor:** Audio Control is a ready-made flow. Devices, inputs and mappings are entered in a configuration. A template covering all device types is included.
- **Test mode:** an included test mode simulates all devices. This allows mappings and workflows to be prepared before the installation is on site.
- **Persistent:** the configuration is stored on the device and survives restarts and flow updates.
- **First commissioning:** the first run on the real installation is carried out together with the operator. The commands are verified against the respective console.

Reliable in operation

- **Self-contained:** control, mappings and monitoring run on the nanobblue device in the local network – even without internet.
- **Self-healing:** if the connection to a console drops, Audio Control reconnects automatically.
- **Errors stay local:** an unreachable device or an incorrect command is reported but does not affect the other devices.

Security

OSC and MIDI over TCP are protocols for closed technical networks: they offer neither authentication nor encryption. Audio Control is therefore operated only in the local network or a dedicated VLAN of the installation and is not exposed to the internet. Remote maintenance of the nanobblue device runs encrypted via the nanobblue VPN as usual.

Technology in brief

- Audio Control Engine as a flow in the nanobblue Editor on the nanobblue media player or controller.
- OSC over UDP incl. bundles; MIDI over TCP with note, control change, NRPN, program change and SysEx.

- Input for BomeBox and other devices that send Allen & Heath network MIDI (TCP port 51325).
- Integration with Interactive UI, Show Controller, schedule, connection monitor, Stream Deck and nanoblu Notify.

Typical applications

- Theatres and stages: scene changes on the FOH console and in the in-ear system with a single key.
- Churches, halls and conference centres: operate room audio (e.g. Allen & Heath AHM) from a touch panel, with presets per event.
- Bands and musicals: musicians switch their in-ear mix with a foot switch via a BomeBox.
- Event venues: fixed routines, e.g. interval music on and microphones muted at a set time.
- Mixed installations: consoles from different manufacturers stay in sync.

In preparation

Dedicated control page with device state, learning list and editing of mappings · encrypted connection to Allen & Heath AHM and dLive · further device profiles, e.g. Behringer/Midas X32/M32, QLab and Resolume · installation via the nanoblu flow catalogue.