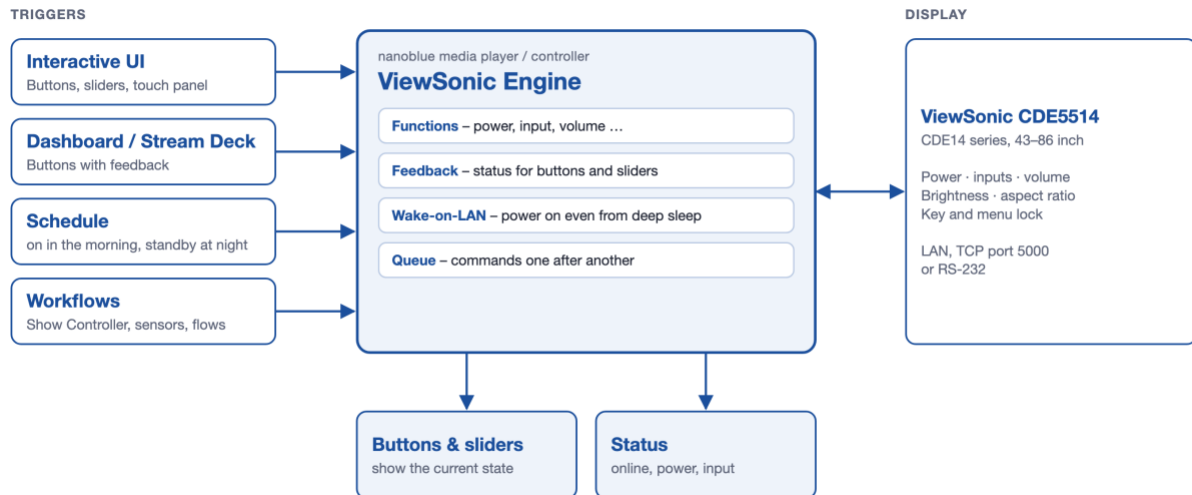


# //nanobblue

## nanobblue® ViewSonic Display Control

Operate ViewSonic CDE14 series commercial displays – power, inputs, volume, brightness and locks over the network, with feedback and Wake-on-LAN



Overview: touch panel, buttons, schedule and workflows trigger functions. The ViewSonic Engine translates them for the display and reports the state back to buttons and sliders.

## What it is about

ViewSonic displays of the CDE14 series (e.g. CDE5514, 55 inch, 4K) hang in meeting rooms, training rooms, reception areas and shops. They have their own Android system, three HDMI inputs and USB-C, and run up to 16 hours a day. In day-to-day operation nobody should have to hunt for the remote control: the display should be on at the right time, show the right input and switch off again in the evening.

nanobblue ViewSonic Display is a ready-made building block for the nanobblue media player and controller. It controls the display through the manufacturer's network interface (**LAN, TCP port 5000**) and makes every function available as a button, slider or display in the **Interactive UI**, in the Dashboard and in all workflows.

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

## Key features

### What can be controlled

| Area         | Functions                                                                                                     |
|--------------|---------------------------------------------------------------------------------------------------------------|
| Power        | On / standby, toggle, power on via Wake-on-LAN                                                                |
| Inputs       | HDMI 1, HDMI 2, HDMI 3, USB-C, DisplayPort, Android (internal player), OPS slot, VGA – depending on the model |
| Sound        | Volume 0–100, louder / quieter in steps, mute on / off / toggle                                               |
| Picture      | Brightness, contrast, sharpness, aspect ratio (full screen, 4:3, 1:1)                                         |
| Locks        | Lock the keys on the display, the OSD menu and the power key; disable the remote control                      |
| Menu keys    | Up, Down, Left, Right, Enter, Input, Menu, Exit – as on the remote control                                    |
| Status       | Online, power, input, volume, mute, brightness                                                                |
| Free command | Any command of the ViewSonic protocol – for special functions                                                 |

Volume and brightness are always limited to 0–100. The engine does not send invalid values to the display in the first place.

### Operation in the Interactive UI

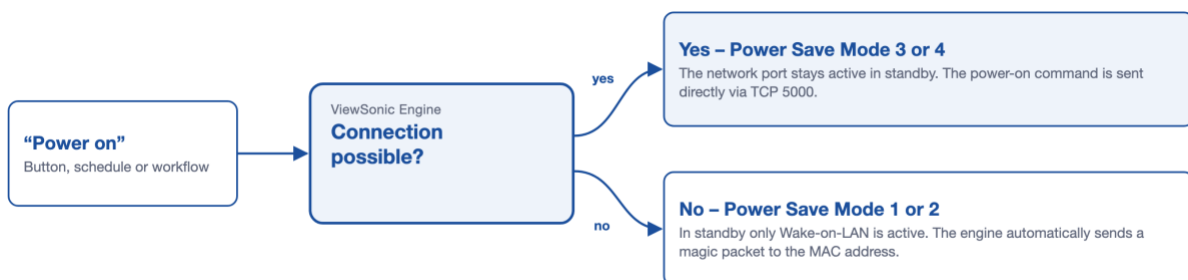
Every button in UI Studio gets an ID. A table in the flow defines which function belongs to which ID. Feedback is sent back to the same ID: the button lights up as long as the function is active.

| Control element | ID (example)                     | Effect                                           |
|-----------------|----------------------------------|--------------------------------------------------|
| Button          | button_display_ein               | Turn the display on, lights up when on           |
| Button          | button_display_aus               | Put the display into standby, lights up when off |
| Buttons         | button_display_hdmi1 ... _usbc   | Select the input, the active one lights up       |
| Button          | button_display_mute              | Mute sound / unmute                              |
| Buttons         | button_display_vol_plus / _minus | louder / quieter in steps of 5                   |
| Slider          | button_display_lautstaerke       | Set the volume directly                          |
| Button          | button_display_aktualisieren     | Read the current state from the display again    |

- **Input buttons** behave like radio buttons: the active one lights up, the others go dark.
- **Dashboard and other interfaces:** the most important functions have ready-made inputs and outputs with plain on/off or numeric values, e.g. for dashboard buttons or a Stream Deck.
- **Multiple displays:** each display gets its own engine, e.g. “left” and “right”. Displays in an RS-232 daisy chain can also be switched together via their monitor ID.

### Power on – even from deep sleep

Whether a display in standby still accepts commands over the network depends on its power save mode. The engine handles both cases:

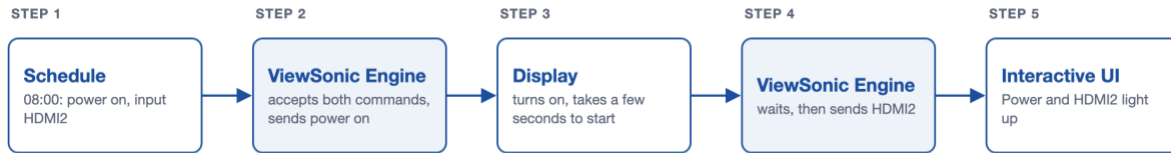


*If the network port is off in standby, the engine turns the display on via Wake-on-LAN – without anyone having to operate anything differently.*

For the most economical mode, only the MAC address of the display is entered during setup. After that, the “Display on” button works the same in every mode.

## Several commands in a row

After power-on the display needs a few seconds before it accepts further commands. The engine observes this delay by itself and processes all commands one after another.



The engine observes the delay after power-on by itself. Commands are not lost, they wait in the queue.

*Example: the schedule turns the display on in the morning and selects HDMI 2. Both commands arrive, even if they are triggered at the same time.*

## Control from other workflows

- **Schedule:** turn on in the morning and select the right input, standby in the evening.
- **Show Controller:** cues switch display and input to match the presentation or show.
- **Other workflows:** any flow in the nanoblue Editor can send commands, e.g. display off when a sensor reports that the room is empty, or lock the keys in public areas.

## Feedback

The engine queries the state of the display on request or at regular intervals, e.g. every minute, and reports it to buttons, sliders and the Dashboard. If the display cannot be reached, it appears as “offline”.

If a model does not support queries, the buttons show the last state that was set. Control still works without restriction; only pure toggling (the same button for on and off) requires the query.

## Setup

- **On the display:** check the monitor ID (default 1) and choose the power save mode. For power-on over the network use Power Save Mode 3 or 4, otherwise enable Wake-on-LAN.
- **In the nanoblue Editor:** ViewSonic Display is a ready-made flow. Only the IP address, the monitor ID and – for Wake-on-LAN – the MAC address are entered.
- **Connection test:** one click shows immediately whether the display responds.
- **Test mode:** an included test mode simulates a display, including deep sleep and models without queries. This allows the interface and workflows to be prepared before the display is on site.
- **Persistent:** the configuration is stored on the device and survives restarts and flow updates.

## Reliable in operation

- **Self-contained:** control and feedback run on the nanoblue device in the local network – even without internet.
- **Nothing gets lost:** commands wait in a queue and are sent one after another.
- **Clear error messages:** if the display rejects a command, e.g. in standby, this is reported instead of failing silently.
- **Quiet network:** one short connection per command, no permanent load on the display.

## Security

The ViewSonic control interface has neither login nor encryption and is intended for closed technical networks. The display is therefore only operated in the local network or a dedicated VLAN of the installation and is not exposed to the internet. Remote maintenance of the nanoblue device runs encrypted via the nanoblue VPN as usual.

## Supported devices

| Device                                           | Connection                    | Functions                                    | Status                                                             |
|--------------------------------------------------|-------------------------------|----------------------------------------------|--------------------------------------------------------------------|
| ViewSonic CDE5514 (CDE14 series, 43–86 inch)     | LAN, TCP 5000;<br>Wake-on-LAN | all functions in this overview               | implemented and tested in test mode; verified during commissioning |
| Other ViewSonic commercial displays (CDE series) | LAN, TCP 5000 or RS-232       | same protocol, inputs depending on the model | verified per model                                                 |
| ViewSonic ViewBoard (IFP series)                 | LAN, TCP 5000 or 7142         | same protocol, port depending on the model   | on request                                                         |

## Technology in brief

- ViewSonic Engine as a flow in the nanoblue Editor on the nanoblue media player or controller.
- ViewSonic LFD protocol: short ASCII commands over TCP 5000, response “valid” or “invalid”; the same protocol also via RS-232 (9600 baud).
- Wake-on-LAN via UDP port 9 for displays in the most economical power save mode.
- Integration with Interactive UI, Dashboard, Show Controller, schedule and all flows in the nanoblue Editor.

## Typical applications

- Meeting rooms: display on and input “Laptop” directly on the touch panel, without a remote control.
- Reception and shops: display switched automatically to the opening hours, keys locked against unwanted operation.
- Training rooms: switch several displays on and off together, select the input centrally.
- Digital signage: display with a nanoblue player on the HDMI input, schedule and status in the Dashboard.

## In preparation

Display in the nanoblue connection monitor · ready-made example page for the Interactive UI · installation via the nanoblue flow catalogue.