Smart pi ECOsystem



Smart Public Information for the smart city.

Smart pi takes information from across the city and delivers it to the people who need it: as an announcement, on a display, through a help point or straight to a hearing aid, the moment it matters.

One ecosystem, designed to look, feel and work as one

Every product works on its own, and better together.

IN

Where information comes from

- RTA
- MIC
- PBX
- SPL
- Fire panel

SMART PI CORE

Decides what to say, where and when

- DVA
- DVA-GTFS
- EYE
- DSP
- SIP
- FSM
- LOG
- NMS

OUT

How it reaches people: hear, see, ask

- NAM
- NAM-HP
- EDC
- EYE-HD
- HLP

Smart pi SPL

Sound level logging

Measure two locations, follow the trends and keep a clear record of sound levels.

Know the level.
Keep the context.

Sound-pressure measurement, local display and logging in one compact device.

Smart pi SPL measures and logs two independent microphone inputs. View levels in a browser, choose the values shown on a local HDMI display and export the record for review.

The compact, USB-powered unit operates without a separate PC. Ethernet and Wi-Fi provide browser access for configuration, monitoring and calibration.



Compact, self-contained measurement
Smart pi SPL in its wall-mountable aluminium enclosure.

Two locations
Follow separate measurement points.

Local awareness
Put selected values on an HDMI display.

Longer events
Compare current levels with rolling averages.

A retained record
Export measurements and calibration logs.

2
Independent measurement inputs.

12
Display values: up to six per input.

HDMI
Local display output.

CSV
SPL and calibration log exports.

Two microphones. One visible workflow.

Follow a reading from its physical input to the display and the retained log.

Microphones
Two measurement points

→

SPL
Acquire and calculate

→

Statistics
Weighting and period

→

Display
Browser and HDMI

→

Record
History and exports

- Two simultaneous, independent inputs. Each microphone is calibrated with the input it will use.

Choose the measurement chain

Use appropriate Class 2 microphones; MicW i436 is the published recommendation. An optional MEMS microphone is also available.

Keep the operator informed

Choose the displayed measurements around the activity being monitored. The HDMI output provides a local view without a separate PC.

Check the chain in order

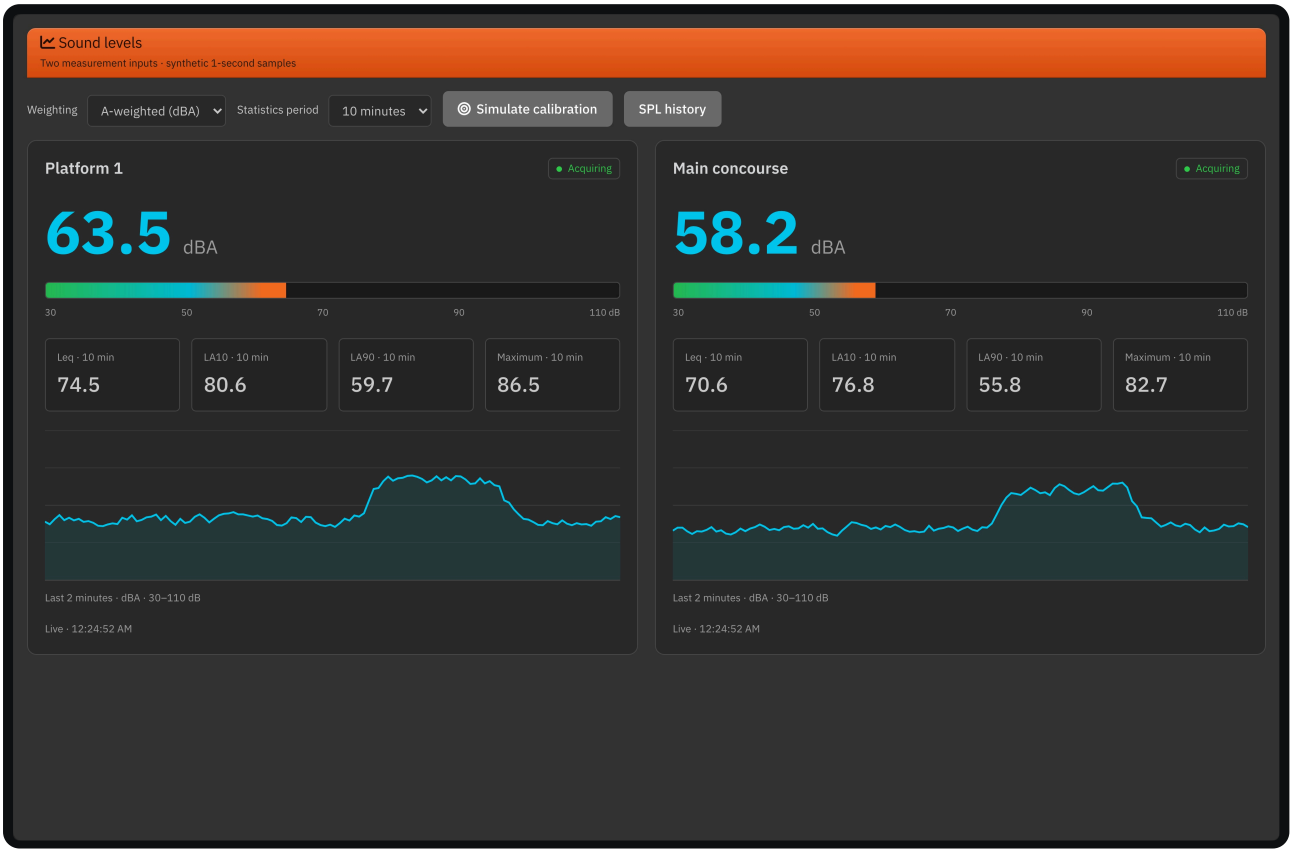
- Confirm the microphone and the input name match the measurement location.
- Check calibration and any configured offset.
- Choose the weighting and averaging interval.
- Review the live reading, the longer trend and the exported record together.



Connections on the unit
Microphone, network, USB and HDMI connections.

See the change as it happens.

Read both measurement points without losing the averaging context.



Both inputs, side by side
Compare the current level and selected statistics in one view.

A-weighted or C-weighted

Choose the weighting relevant to the measurement. Keep the selected weighting visible when discussing or exporting a result.

Current level and rolling context

Smart pi SPL provides one-second levels and longer Leq intervals. A short peak and a sustained increase tell different stories.

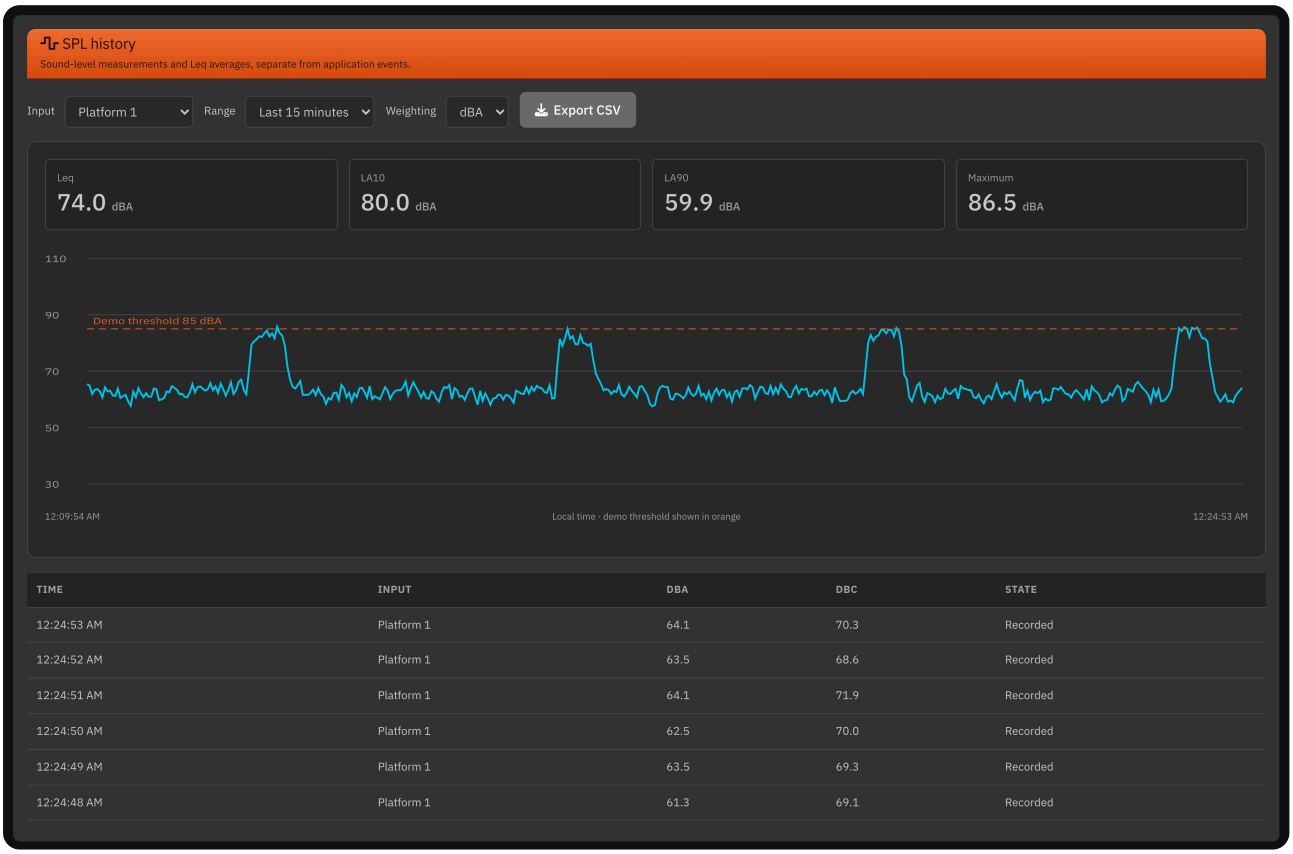
Give each input a useful name

Use the location or purpose of the microphone, so operators can identify the reading without relying on channel numbers. Keep those names consistent in the display layout and acceptance record.

SmartPi UI preview with synthetic readings.

Put a moment back into context.

Use the retained measurement history to understand how the level changed over time.



Sound-level history
Select an input and time window, compare readings and export the data.

Review the whole interval

Look at the shape of the event rather than relying on one displayed number. Compare a short change with the rolling average before drawing a conclusion.

Keep the underlying record

Export SPL measurements as CSV for further analysis, reporting or comparison with the event timeline.

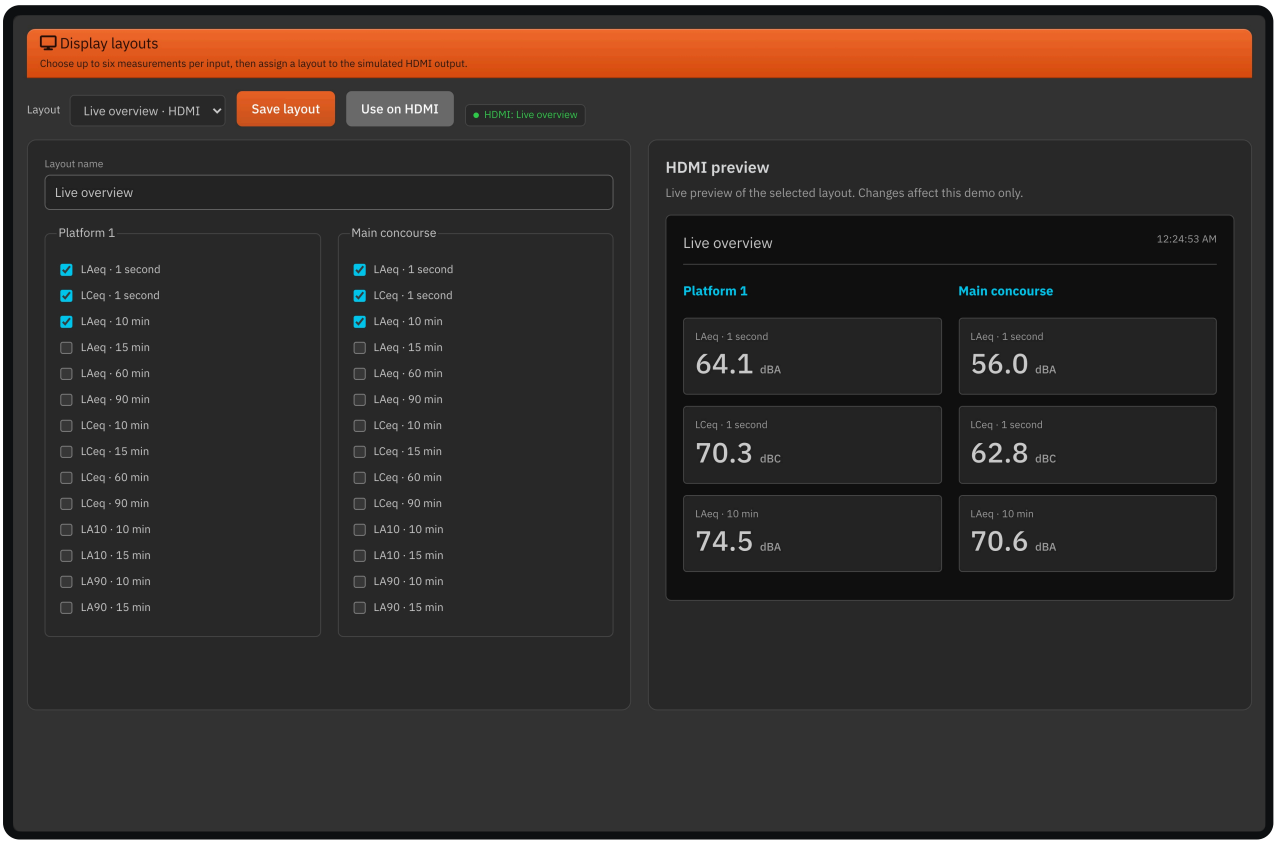
A useful review starts with a clear question

- Which input and measurement location are involved?
- What time period and weighting are being compared?
- Was the change brief, repeated or sustained?
- Was the microphone calibrated and operating within its measurement range?

SmartPi UI preview with synthetic readings. The plotted history is illustrative sample data.

The right values.
On the local screen.

Choose the measurement mix for the operator, instead of filling the screen with every statistic.



Choose what the local screen shows
Select a layout, choose measurements for each input and assign the HDMI output.

Up to six values per input

Build a display around the measurements that matter for the activity. Each layout can show up to 12 live values across the two inputs.

Several layouts, one HDMI choice

Keep alternative selections for different monitoring tasks, then choose the layout used by the local HDMI screen.

SmartPi UI preview with synthetic readings. HDMI previews illustrate the selected content, not a photograph of a connected screen.

One level rarely tells the whole story.

Combine current levels, energy averages and exceeded-level statistics to see the pattern.

Leq · energy over time

Equivalent continuous sound level summarises sound energy over the selected interval. It is not a simple arithmetic average of the decibel readings.

LA10 / LA90 · exceeded levels

LA10 is the A-weighted level exceeded for 10% of the interval; LA90 is exceeded for 90%. They add context about the distribution of levels.

Select the period deliberately

1 second

Follow immediate changes with LAeq or LCeq.

10 / 15 minutes

Review Leq or LA10 / LA90 over the supported short intervals.

60 / 90 minutes

Follow longer rolling Leq averages.



A layout for event monitoring
Example selection: 15-minute Leq, LA10, LA90 and 60-minute Leq.

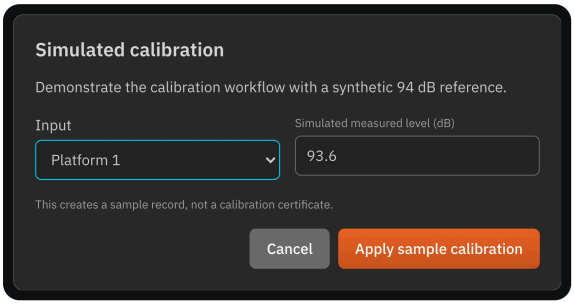
Match the statistic to the question

Keep the weighting, interval and input identity beside a result. Configure any display thresholds for the monitoring task and applicable measurement procedure.

SmartPi UI preview with synthetic readings.

Start with a known reference.

A useful measurement record begins with the microphone and its calibration.



Calibrate the selected input
The UI preview illustrates the 94 dB reference workflow.

Calibrate the actual input pair

Before commissioning, calibrate each microphone with the SPL input it will serve. Each input has its own result and correction.

Use a known reference

The published procedure uses a 94 dB sound calibrator. The unit calculates the correction from the measured reference signal.

Retain the certificate

Generate the PDF calibration certificate from the unit and keep it with the measurement setup record.

1. **Connect the reference**
   Fit the calibrator correctly to the microphone and supply the specified 94 dB signal.

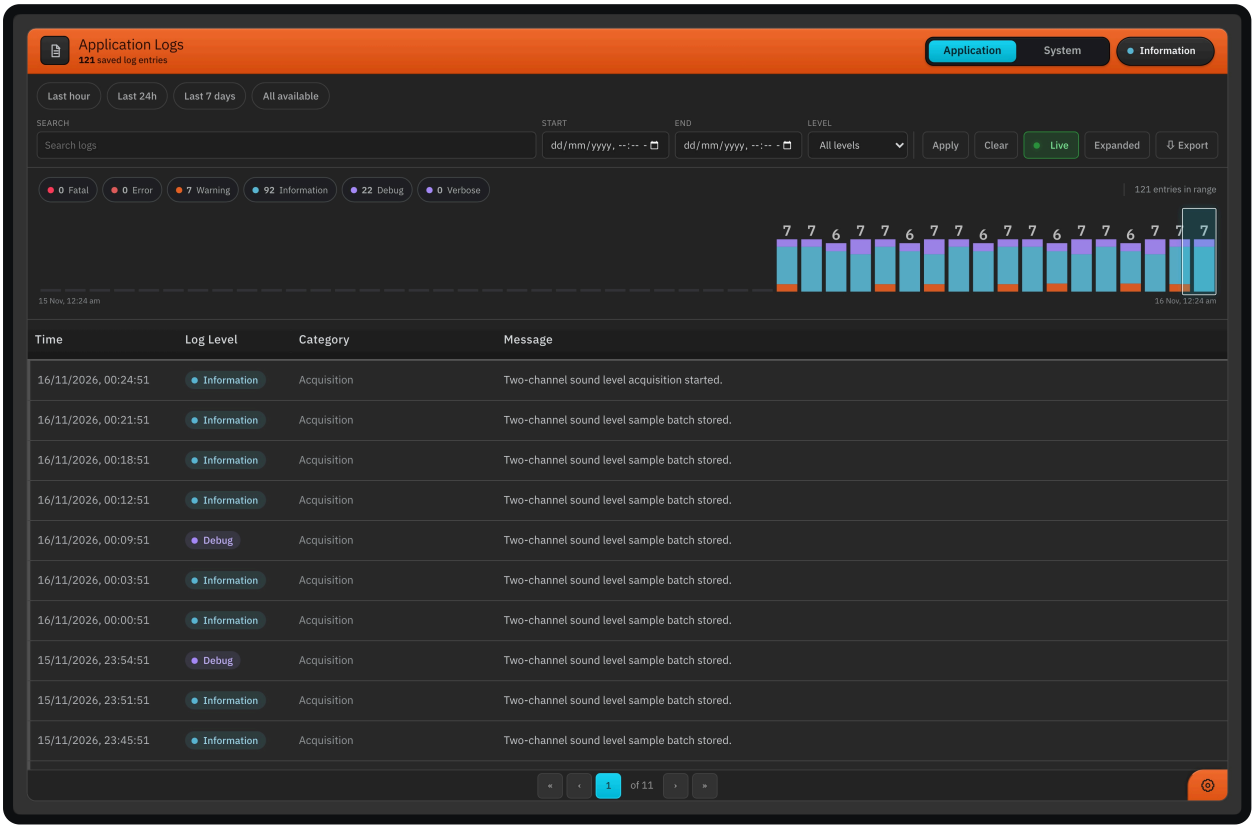
2. **Run each input**
   Calibrate input 1, then repeat for input 2 with its assigned microphone.

3. **Record and recheck**
   Keep the result, date and certificate. The published guidance recommends monthly calibration.

SmartPi UI preview with synthetic readings. The simulator does not calibrate a physical microphone.

Keep the readings. Keep their context.

Measurements, calibration and operational events answer different questions.



Application and system events
Event types and their timing provide operational context alongside the acoustic history.

SPL measurements

The sound-level log records the acoustic readings. Export the chosen data for analysis and reporting.

Calibration records

Export the calibration log and retain the generated certificate so the setup can be traced back to its reference check.

Agree the retention and export workflow

Set the logging period for the installation and arrange exports around the review process. Keep the timestamps and input names consistent when comparing sound levels with other records.

Keep different kinds of evidence together

Acoustic history describes the sound level. Calibration records describe the reference check. Operational events help explain the condition of the device around the same time.

SmartPi UI preview with synthetic readings. The event timeline is part of the SmartPi UI preview.

A compact instrument.
A complete local endpoint.

Connect the microphones, network and screen around the measurement location.



Smart pi SPL
Compact aluminium enclosure with mounting tabs.



Connection panel
HDMI, Ethernet, USB and two microphone inputs.

Power

5 V DC, 2 A micro USB.
Power supply included.
No separate PC required.

Network

10/100 Ethernet and 2.4 GHz 802.11n Wi-Fi for browser access.

Display

HDMI output for the selected local display layout.

Microphone options

Two 3.5 mm microphone inputs with Class 2 preamps. A 2.5 mm connection supports the optional MEMS microphone.

Installation choices

Wall-mountable indoor aluminium enclosure; an outdoor weather-resistant unit is also available. Confirm the ordered configuration.

Respect the measurement range

The published logging specification is accurate up to 124 dB SPL. Louder readings are shown as overload. Confirm the microphone, calibration and range for the intended measurement.

From an installed microphone to a useful record

Bring the physical setup, displayed values and retained data into one commissioning workflow.

1. **Define the measurement**
   Agree the two microphone locations, the weighting, averaging intervals and review process.

2. **Install and connect**
   Mount the unit, connect the microphones, provide USB power and set up Ethernet or Wi-Fi access.

3. **Calibrate both inputs**
   Use the reference procedure with each assigned microphone. Retain the calibration record and certificate.

4. **Choose the display**
   Name the inputs, select up to six measurements per input and assign the HDMI layout.

5. **Prove the record**
   Check live values, overload indication, timestamps and exports. Back up the accepted configuration and logging data.

Keep the setup repeatable

Record microphone identity, physical position, calibration date and any general offset used when the microphone cannot sit at the source.

Maintain the unit

Use the browser tools for software updates and backup / restore of settings and logging data. Keep the accepted setup available for service work.

SMART PI SPL

See the level. Understand the pattern.

Talk to our team about your measurement points, local displays and sound-level records.



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Smart pi ECOsystem

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