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 DSP

Audio processing

Route, prioritise and shape audio for every zone, from one site to a whole campus.

Every zone.
Its own sound.

Make speech clear and give each source the place it needs in the mix.

Smart pi DSP combines network audio, zone processing and priority control in a modular rack platform. Configure it in the built-in web interface, with no proprietary commissioning application.

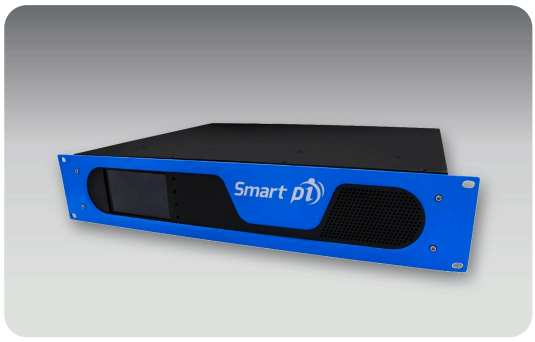
Each zone has its own sources, processing and outputs. Add capacity with DSP cards and connect the wider system through Dante audio and OCA / AES70 control.

Public address
Balance live paging and recorded announcements.

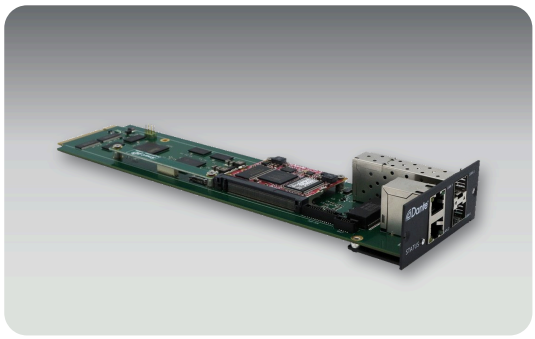
Busy spaces
Compensate for changing ambient noise.

Many destinations
Give platforms and concourses their own processing.

Connected sites
Integrate with the wider Smart pi ecosystem.



Modular processing
A SuperNode chassis with front-panel display.



Add processing capacity
DSP card with copper and fibre connectivity.

64
Zones per DSP slot.

32
Inputs available per zone.

384
Zones in a fully configured 2RU SuperNode.

24 bit
Audio and processing at 48 kHz.

Product photographs. Capacity depends on the installed cards and configuration.

From the source to the space

Build the audio path around the destinations and the way people use them.

SOURCE
Dante / I/O
Bring audio onto the system.

→

SELECT
Zone inputs
Assign sources and their order.

→

BALANCE
Priority / mix
Mix, mute or dim sources.

→

SHAPE
Processing
EQ, dynamics and noise control.

→

DELIVER
Outputs
Route audio to the selected destinations.

CONFIGURE
Built-in web interface
Dashboard, Cards, Zones and System provide a common view of the installation.

INTEGRATE
OCA / AES70
External control using an open standard.

- Cards manage themselves. Each has its own processors, IP address and set of zones.

Keep the roles clear

- **Dante carries audio** between configured network endpoints.
- **AES70 carries control** and integration with other systems.
- **Zones define behaviour** for their sources, processing and destinations.

Design for continuity

N+1 card mirroring is available for critical zones. The SuperNode adds hot-swap redundant power supplies. Agree the topology and test the actual failure and recovery paths during commissioning.

Better together

Smart pi MIC
Live paging with coordinated zone selection.

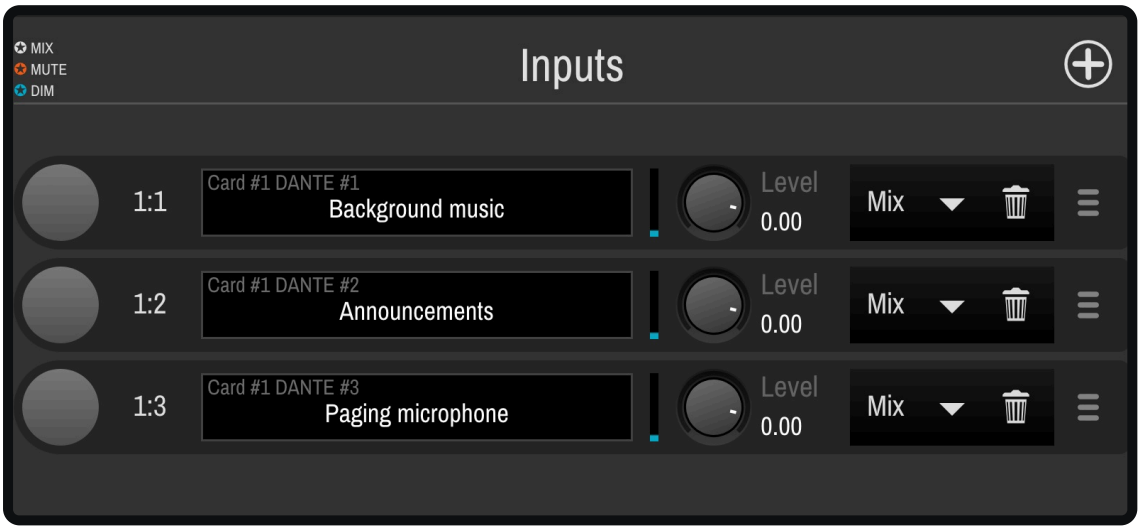
Smart pi DVA
Scheduled and operator announcements.

Smart pi NAM-HP
Network amplification for the destinations.

Smart pi LOG
Audio recordings for later review.

Music, paging and announcements. One deliberate mix.

Define how sources share each zone, rather than applying one rule to the whole building.



A zone's sources, in priority order
Background music, announcements and a paging microphone in a sample zone.

Mix

Keep the input in the zone's mix. Use it where simultaneous sources are intended.

Mute

Silence the input within this zone when that behaviour is required.

Dim

Attenuate the input, such as background material beneath a higher-priority source.

Order the sources

Drag the input handles to change priority. Each zone has its own input list, so a source can have a different role in different spaces.

Name them for the operator

Use meaningful descriptions, zone names and colours. Keep the physical port identity visible alongside the operational name.

Example · a platform page

A live paging microphone needs to be heard over background music. Put the sources in the required priority order, configure the music's behaviour, then test the transition into and out of speech.

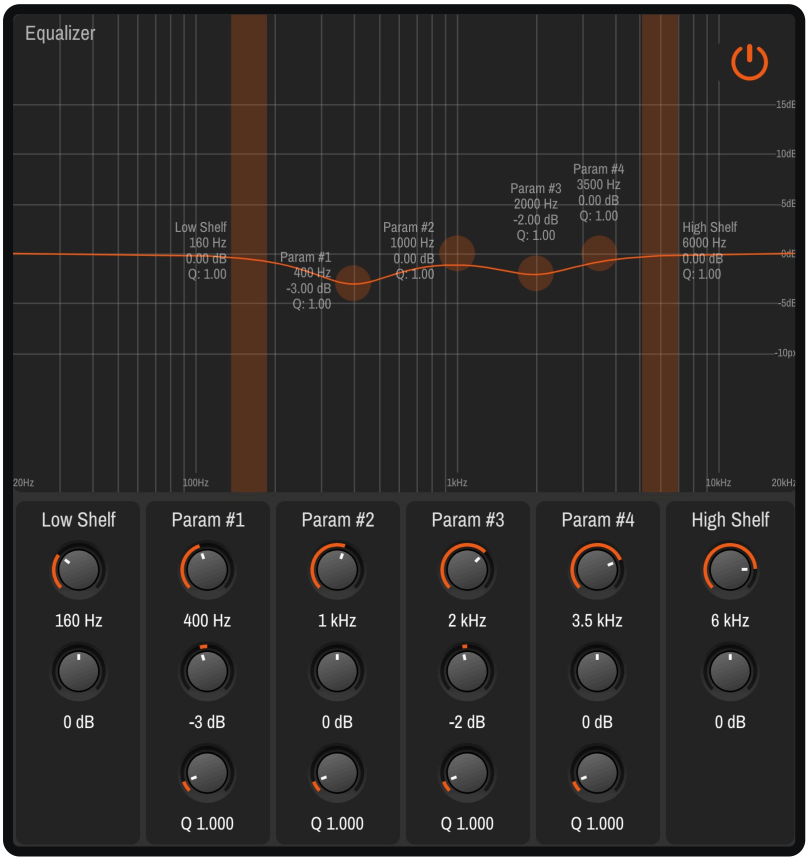
Check the return to normal

Test what the zone does when the higher-priority source ends, as well as when it begins. Confirm the result through the actual amplifiers and loudspeakers.

Current DSP web interface with local sample data. Meters are illustrative; no audio is processed.

Tune the zone.
Keep speech at the centre.

Give each destination the response it needs, with detailed controls in the browser.



Six-band equalisation
Two shelving bands and four parametric bands in the selected zone.

Shape the response

Set frequency and gain for each band. Parametric controls provide width adjustment to target a narrower or broader region.

Keep the context

Use the General tab for a processing overview, then the EQ tab for detailed adjustment.

Compare with bypass

Enable or bypass a stage without losing its settings, so changes can be compared during setup.

Start with the room

Use the installed loudspeaker system and appropriate measurement equipment to guide equalisation. Check speech at representative listener positions.

A graph of the settings

The response plot shows the configured filter response. It is not a measurement of the room or a live audio spectrum.

Current DSP web interface with local sample data. Meters are illustrative; no audio is processed. EQ response is calculated from the settings.

Consistent speech. Controlled peaks.

Use compression and limiting as separate tools, with their effect visible in the zone view.



Compressor
Input, gain reduction and output meters alongside the transfer curve.



Limiter
A separate stage for controlling output peaks.

Even out the message

Compression reduces signal above the threshold according to the selected ratio. Attack and release controls determine how quickly it acts and recovers.

Watch the reduction

Use the input, reduction and output meters together. Set the compression before adding makeup gain so the final level remains deliberate.

Control the peaks

The limiter has its own threshold, timing and output gain controls. Set it against the installed amplification and loudspeaker system.

Check the units

The compressor's attack and release are in seconds; the limiter's are in milliseconds. Confirm the units before entering a value.

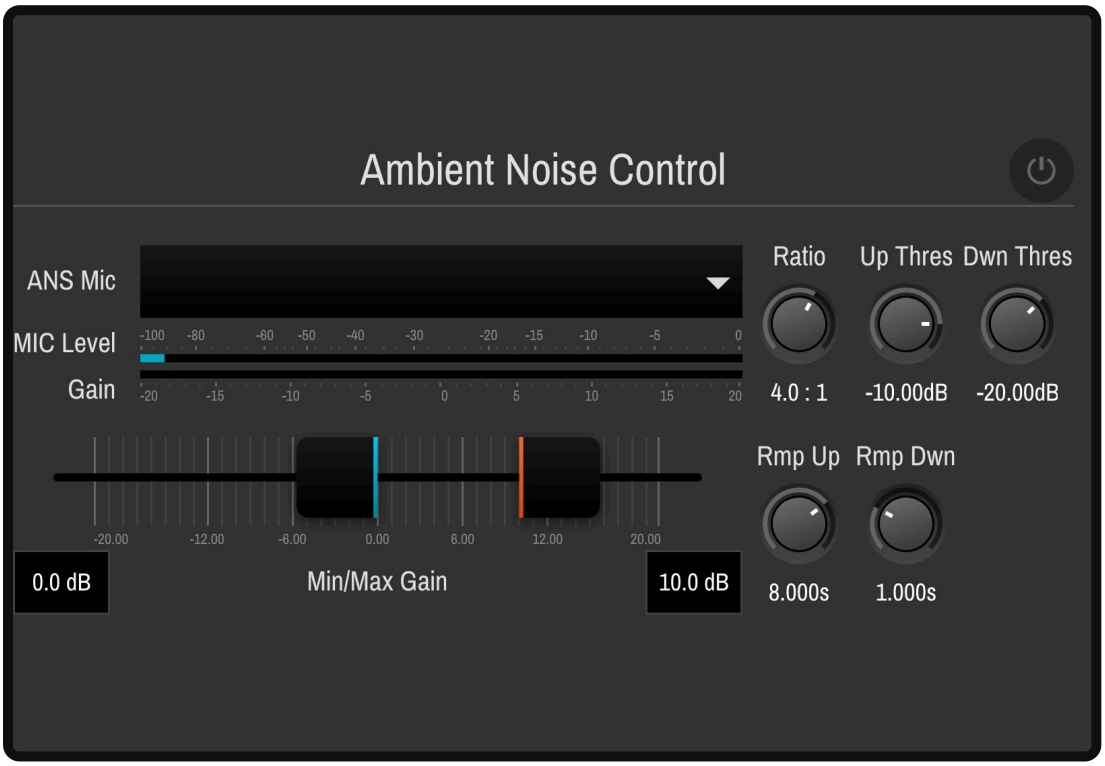
Commission the gain structure as a whole

Check representative sources at their intended level. If a zone is too quiet, review the gain structure rather than simply raising the limiter threshold.

Current DSP web interface with local sample data. Meters are illustrative; no audio is processed.

As the space changes, the level can follow.

Keep compensation under control with a sensing source, gain limits and response timing.



Ambient noise control
Select the sensing input and constrain how the zone responds.

Listen to the background

Echo-cancelled ambient noise control adjusts zone level in response to measured background noise. A sensing microphone provides the reference for the space.

Constrain the response

Set minimum and maximum compensation gain. Ratio and separate upward and downward thresholds shape how the control responds.

Make changes unobtrusive

Ramp-up and ramp-down settings control the transition. Choose a useful gain range and listen through both busy and quiet conditions before accepting the setup.

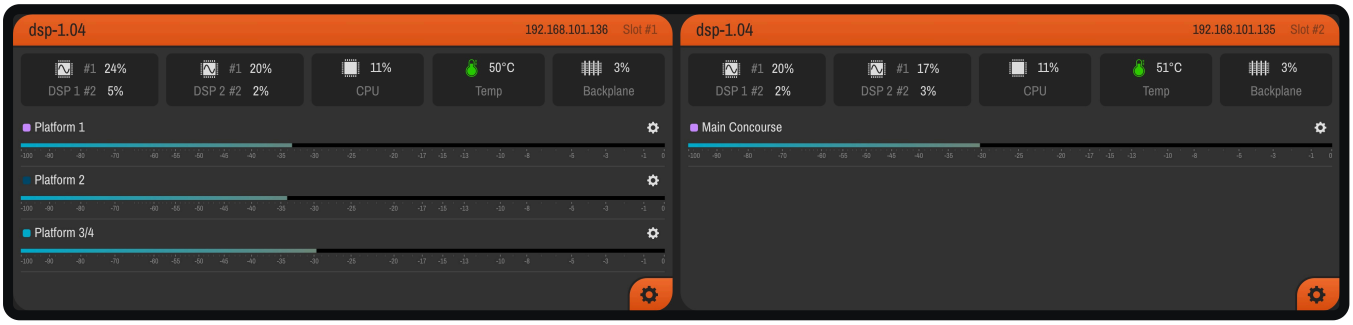
Example · a changing concourse

A concourse moves from quiet off-peak use to a busy arrival period. Set the sensing location and limits so speech remains useful without unnecessary level swings. Verify the result with the installed microphone and loudspeakers.

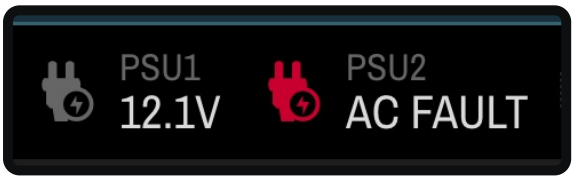
Current DSP web interface with local sample data. Meters are illustrative; no audio is processed. Ambient compensation is described from the product manual, not demonstrated acoustically.

The card, the zone and the system around it

Keep the operational view close to the controls that resolve a problem.



Two cards, one health view
Sample DSP and CPU loads, temperature, backplane use and zone output levels.



A fault stays in view
PSU 2 reports an AC fault in the persistent status bar.

See where to look next

Each card has its own dashboard panel and zone list. Open the card or zone settings from the corresponding gear control.

Keep faults in sight

The persistent status bar includes power supply condition, active slot and backplane utilisation, so a fault remains visible while working elsewhere.

Example · a missing power feed

The sample system deliberately shows an AC fault on PSU 2. The second supply is not a reason to leave that fault unattended: check the feed and verify the site's redundancy arrangements.

Check both processing and transport

DSP load, CPU load, temperature and backplane use describe different parts of the system. Review them together when commissioning the intended channel count and routing.

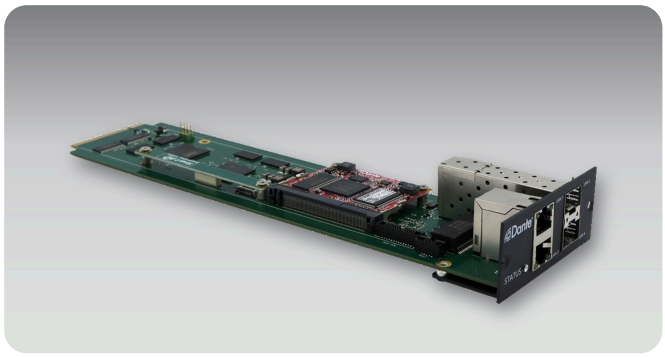
Current DSP web interface with local sample data. Meters are illustrative; no audio is processed. PSU 2 AC fault is intentionally simulated.

Size the platform around the site

Choose a compact Node or a SuperNode, then build the processing and connectivity around the installation.



2RU SuperNode
Product photograph on the shared studio background.



Dante DSP card
Copper and fibre connections, with SD storage.

1RU Node

- Up to 192 zones
- Up to three DSP cards and one I/O card
- Up to 12 switch ports: six Ethernet and six SFP

2RU SuperNode

- Up to 384 zones
- Hot-swap redundant power supplies
- Front-panel multi-touch display

Shared platform

- 64 zones per slot
- 24-bit / 48 kHz processing
- Front-to-back cooling
- Built-in web management

Plan the rack

Allow for airflow, power feeds, network connections and service access. Confirm the card mix and the final physical I/O before installation.

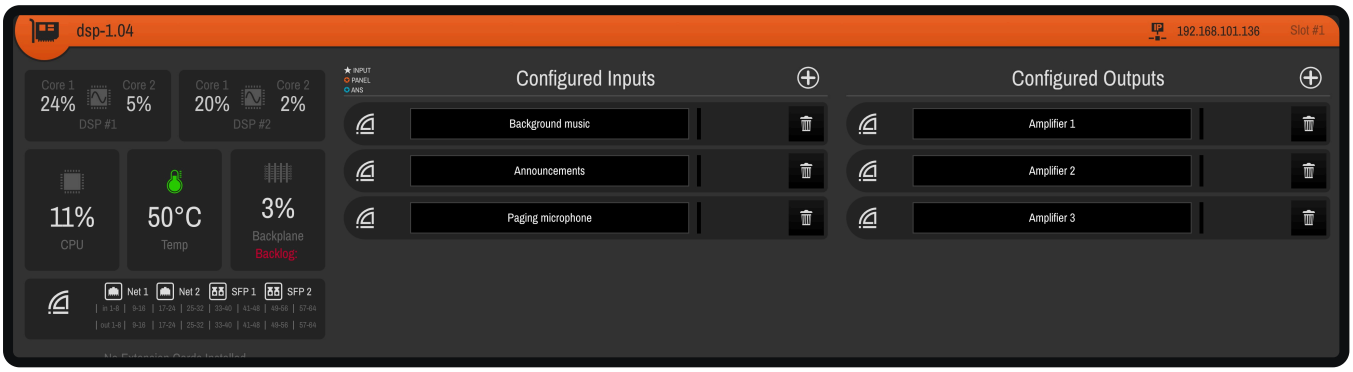
Plan the resilience

Cards operate independently and N+1 mirroring is available. Choose the redundancy design around the zones and failure cases the site must support.

The capacities shown are platform maxima. Confirm the installed hardware and configuration for the project.

From the TALK button to the right zone

Bring the microphone's controls and the DSP's destination model into the same operating workflow.



Card configuration
The sample card's network-audio inputs and outputs.

A familiar paging destination

In DSP Partnered mode, Smart pi MIC coordinates zone selection and TALK state with the DSP. Zone names and colours are subscribed over AES70.

Audio and control have different jobs

AES70 provides control and zone identity. Dante carries the local-network audio. Configure both paths and test them together.

Paging across sites

For a configured route via Smart pi SIP Server, paging connects the audio path before the chime and live speech begin. Confirm compatible versions, extensions and network reachability during setup.

Keep other sources in the same plan

DVA announcements and other audio sources join the zone's input list. Assign their priority and mix behaviour alongside the live microphone, then test the full operating sequence.

Current DSP web interface with local sample data. Meters are illustrative; no audio is processed. Paging integration requires compatible products and deployment configuration.

Build the path. Prove the behaviour.

1. **Map the zones**
   Document each area, its outputs, sources and required priority behaviour.

2. **Connect the system**
   Confirm chassis, cards, power feeds, network plan and Dante routing.

3. **Set the audio path**
   Name sources and zones, set input order and verify every assigned output.

4. **Tune and constrain**
   Commission EQ, gain, compressor, limiter and ambient compensation using the installed system.

5. **Review and prove**
   Review pending changes, save the configuration and test paging, routine audio, faults and recovery.

Keep a recoverable configuration

Use configuration backup and restore as part of the site's handover. Record the hardware, firmware and network settings with the accepted configuration.

Keep maintenance deliberate

The System interface provides firmware, backup, reboot and network-lock controls. Plan these operations and verify recovery before returning the system to service.

Built for

Transport interchanges · Public address · Campuses · Venues · Multi-building sites

SMART PI DSP

Hear the difference in every zone.

Plan the audio, control and resilience your site needs with our team.



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Smart pi ECOsystem

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