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 NAM Smart pi NAM-HP

Network audio

Local amplification, hearing loops and accessible audio, with options to suit the site.



NAM NAM-HP

Audio where it is needed. Options for how it is heard.

Choose the amplifier and the interfaces around the installation.

Put amplification close to the loudspeakers. Bring audio over the network, shape it for each area and monitor the output from a browser.

NAM provides four lower-power channels. NAM-HP adds higher-power amplification and hearing-loop modes. Both combine audio processing with copper and fibre networking.

Passenger areas

Local amplification for platforms and concourses.

Accessible listening

Hearing loops or an Auracast option.

Remote locations

A SIP option for WAN and internet links.

Building interfaces

Analogue audio and GPIO options.



One family, two formats
Indoor NAM above an outdoor enclosure.

4 × 12 W
NAM RMS output into 8 Ω.

4 × 75 W
NAM-HP RMS output into 8 Ω.

2 + 2
Gigabit copper ports and SFP slots.

1,000
FIR taps per amplifier channel, alongside 7-band EQ and delay.

The same network. The right output stage.

Start with the load, coverage and listening method, then select the enclosure and option boards.



NAM
Four lower-power amplifier channels.



NAM-HP
Outdoor high-power model shown.

NAM · distributed loudspeakers

4 × 12 W RMS into 8 Ω. A compact network amplifier for placing audio close to each zone, with independent processing and speaker monitoring.

NAM-HP · power and loops

4 × 75 W RMS into 8 Ω. Select high-power, bridged or hearing-loop operation to match the load and the installed speaker or loop system.

Choose the output mode before the accessories

Loudspeaker modes

NAM-HP supports 4 × 75 W or 4 × 50 W modes, bridged 2 × 150 W or 2 × 100 W, and 25 V line operation.

Hearing-loop modes

NAM-HP supports up to two AFILS loops in single-loop or phased-array configurations. Output-mode selection determines the available channels.

From a network source to the listening area

Keep the source, processing and output visible as one chain.

Source
DVA, MIC or DSP

→

Network
Dante audio

→

NAM
Routing and DSP

→

Output
Amplifier channels

→

People
Speakers or loops

- Two Gigabit Ethernet ports and two SFP slots. In redundant mode, one copper port and one SFP belong to each LAN.

Keep audio local

Dante sources can route independently or in combination to the amplifier outputs. Mix, mute and dim provide local priority behaviour for smaller installations.

Extend the path

Choose the SIP option for a WAN audio link, or Auracast for a Bluetooth LE Audio broadcast. These are options, not standard fittings on every unit.

Follow the signal when investigating a fault

- Check that the expected Dante receiver has signal and the route is assigned.
- Review channel gain, mute, processing and output mode.
- Compare output monitoring, speaker impedance and amplifier fault indications.

Better together

Smart pi DVA
Automatic announcements.

Smart pi MIC
Live paging.

Smart pi DSP
Audio routing and zones.

Smart pi LOG
Recording and review.

From the TALK button to the listening area

Bring live paging and network amplification into the same Smart pi audio system.



Smart Pi MIC paging panel

MIC
Select paging areas

→

Dante
Network audio

→

NAM
Route and process

→

Amplifiers
Selected outputs

→

People
Hear the live page

Illustrative configured local-network audio path. A Smart pi DSP can provide central zone routing and priorities.

One paging workflow

Choose the MIC destinations, play the configured chime and speak. Route the MIC Dante audio to the NAM channels serving those areas.

Keep the sound right at the output

NAM provides local gain, EQ, FIR and delay at the amplifier. Mix, mute and dim behaviour is configured around the intended paging priority.

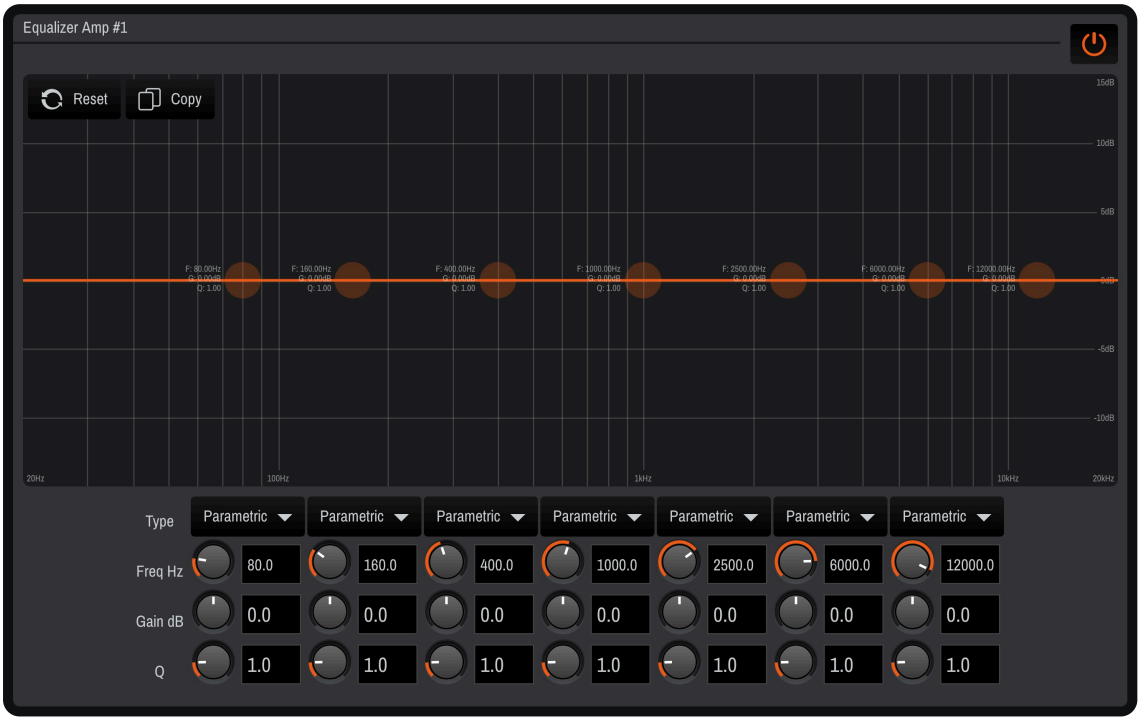
Coordinate control and audio

For DSP Partnered installations, AES70 carries MIC/DSP zone control and Dante carries local audio. Configure compatible devices, routes and priorities, then verify each selected area end to end.

Diagram illustrates the configured Dante audio path and optional DSP integration.

Shape each channel. Align each area.

Tune the audio where it leaves the network and reaches the loudspeaker.



Shape the channel
Native equaliser controls and response display.

Correct the response

Use seven-band parametric EQ on the selected input or output. Each amplifier channel also has a 1,000-tap FIR filter for a coefficient-defined response.

Align the arrival time

Up to 2500 ms delay per channel helps align distributed loudspeakers. Use distance units and micro-delay controls where the installation needs finer adjustment.



Channel control
Source, trim, level and mute.

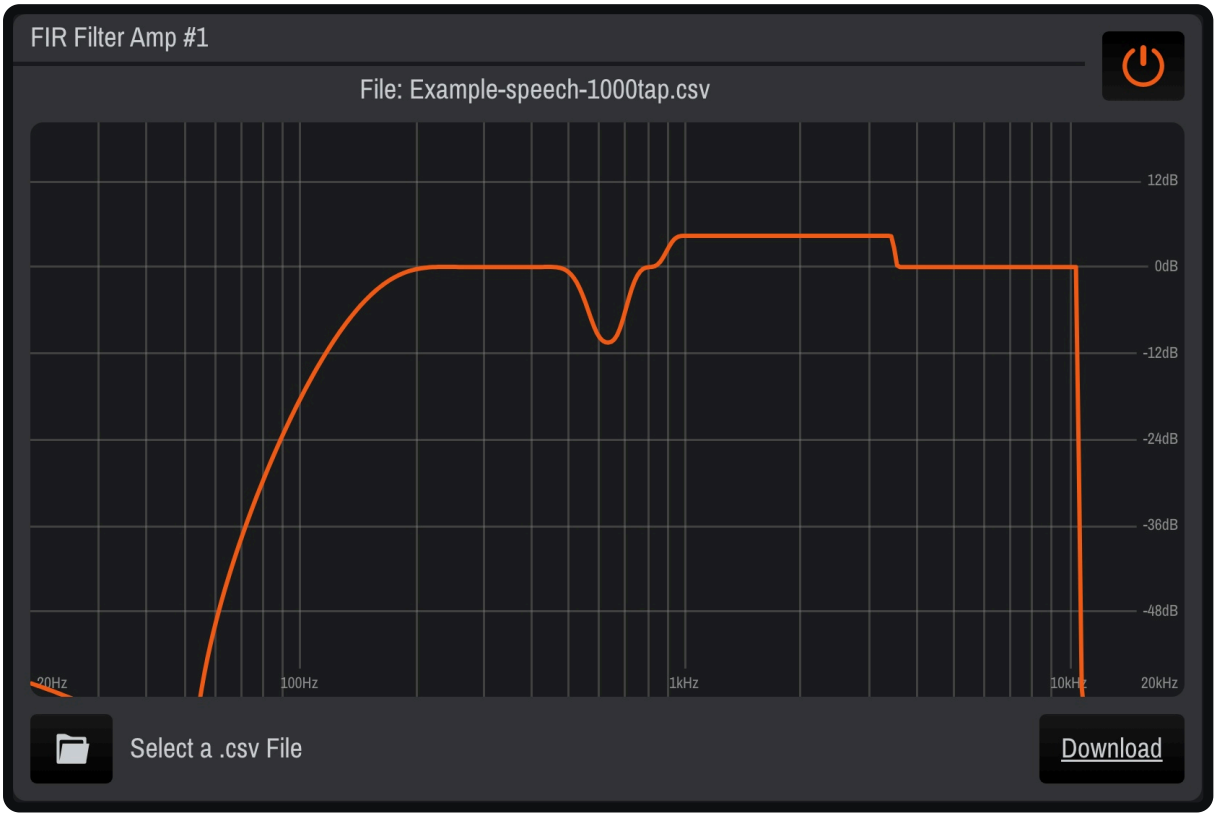
Protect the signal path

Output soft clipping and microphone AGC, limiting and noise gating support level management. Commission levels with the actual source and loudspeaker load.

Current native interface with local sample data. Values do not represent a connected installation.

A detailed filter.
Inside every amplifier channel.

Shape the response at the NAM output, close to the loudspeaker it serves.



A complete response in one filter
Example: low-frequency attenuation, a local cut, presence lift and a high-frequency roll-off.

1,000 taps per amplifier channel

Load an FIR coefficient file for the selected amplifier channel. A single filter can combine detailed tonal shaping and band limiting in one response.

See the curve before listening

The native interface calculates the frequency response from the loaded coefficients. Enable or bypass the filter, check its filename and download the coefficient set.

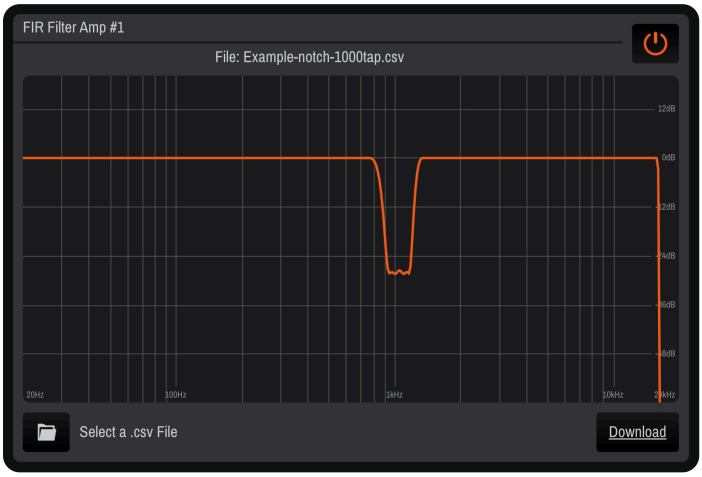
More than a single EQ adjustment

FIR lets the system designer specify a complete response as a coefficient set. Keep a tuned preset for the loudspeaker and its application, then deploy the appropriate file to each output channel.

Calculated 48 kHz responses from illustrative 1,000-tap coefficient sets. Not acoustic measurements or installation presets.

Cut precisely.
Shape deliberately.

Two more examples of the response control available in a 1,000-tap output filter.



Target a frequency region
Illustrative deep attenuation around 1 kHz.

A focused cut

Concentrate attenuation in a selected frequency band while leaving neighbouring regions near their original level.

The example shows what a coefficient-defined response can do. Choose the actual frequency and depth from the system design and measurements.



Define the useful passband
Illustrative low- and high-frequency attenuation.

A bounded audio band

Combine low- and high-frequency shaping in one FIR response. Use a preset that suits the loudspeaker, signal and application.

Different channels can use different coefficient sets while remaining part of the same network amplifier.

FIR + EQ + delay

Use FIR for the designed response, parametric EQ for channel adjustments and delay for alignment. These are complementary tools in the NAM processing chain.

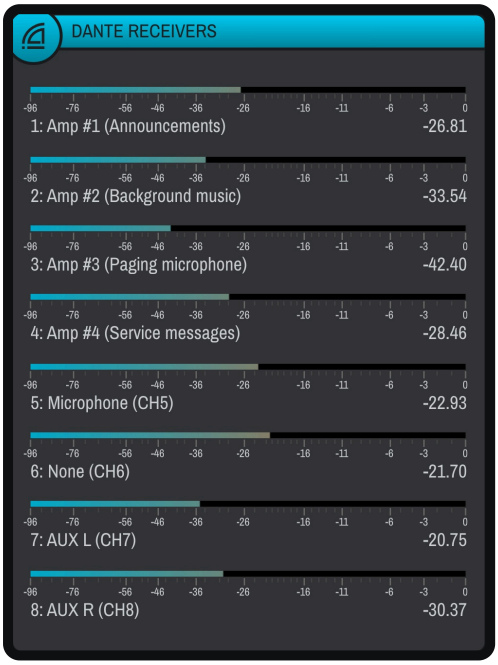
A measured result comes next

A response graph shows the filter mathematics. Confirm headroom, listening quality and the installed acoustic response before accepting the preset.

Illustrative calculated filter responses at 48 kHz. Filter design examples are not feedback-control or acoustic-performance claims.

A visible signal path. A level that suits the space.

Monitor the audio and the output circuit, then adjust the system to the listening environment.



See the incoming audio
Dante receiver levels.

Find the missing stage

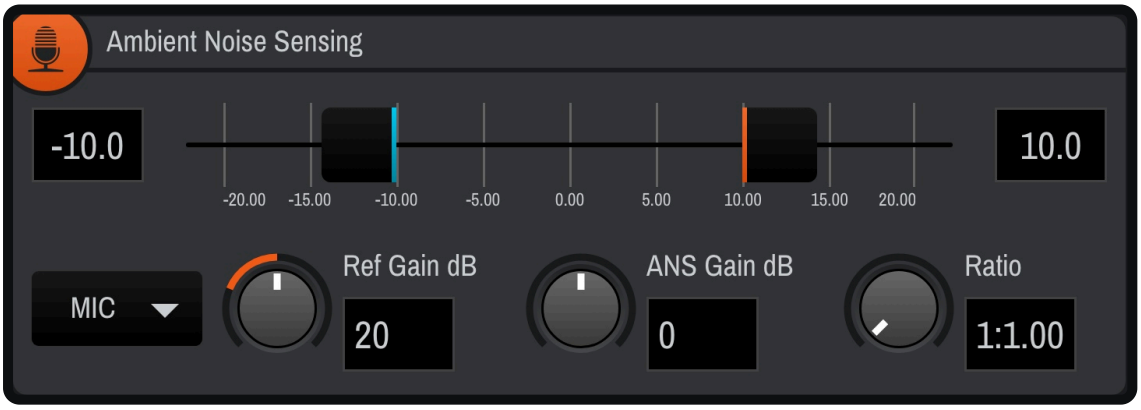
Separate an absent network signal from a muted channel, a processing setting or an output fault. Receiver and transmitter meters give visibility on both sides of the routing.

Speaker monitoring

Measure impedance and set the acceptable tolerance for each loudspeaker circuit. Amplifier status and fault codes add context to an unexpected result.

Ambient noise sensing

Use a local or Dante microphone as the noise reference, then set the relationship between measured noise and output gain.

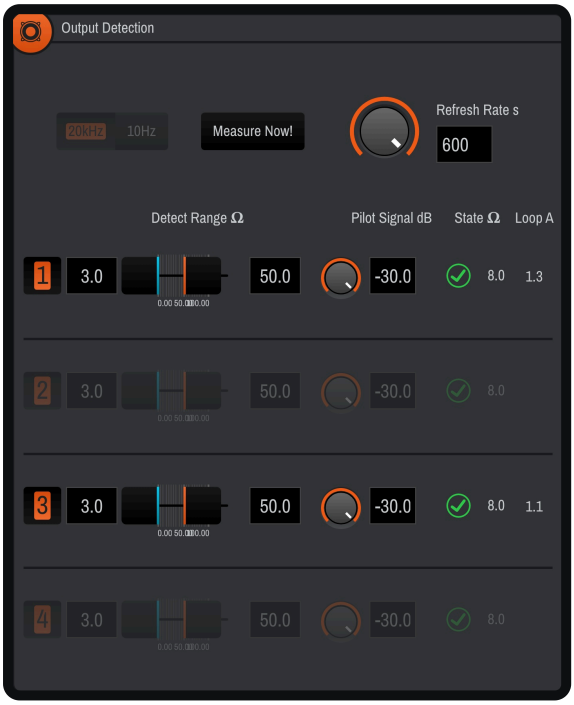


Set the response to ambient noise
Source, gain and operating range controls.

Current native interface with local sample data. Values do not represent a connected installation.

A direct path to the hearing aid

Drive single or phased-array induction loops with the NAM-HP output stage.



NAM-HP output detection
Two-loop mode: channels 1 and 3 show sample loop current.

Single or phased-array loops

Select the NAM-HP hearing-loop mode for the required loop arrangement. Up to two AFILS loops are supported, depending on the output configuration.

Monitor the installed loop

Loop detection, impedance, live current and configurable thresholds support setup and supervision, including loads below 1 Ω.

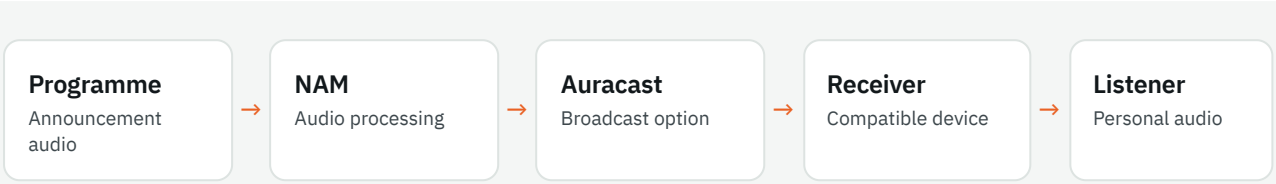
Commission the listening area, not just the amplifier

- Confirm the selected output mode and the loop wiring.
- Set the processing, current and monitoring thresholds for the installed circuit.
- Measure coverage and performance across the intended listening area.
- Retain the accepted configuration and baseline measurements for service checks.

Current native interface with local sample data. Values do not represent a connected installation.

Broadcast the programme. Let people listen their way.

Add a compatible personal listening route alongside the public address system.



- Auracast is the Bluetooth LE Audio broadcast option in the NAM family's outdoor options list.

An additional listening route

Provide an audio broadcast for compatible hearing aids, headphones or receivers. Keep the broadcast programme aligned with the information being delivered in the space.

Plan the receiver experience

Confirm the intended receiving devices, how people discover the broadcast and where it needs to be available. Demonstrate the complete listening path during acceptance.

Choose the accessible-audio option for the site

AFILS · NAM-HP

An installed induction loop provides the magnetic listening field. Choose single or phased-array operation to suit the loop design.

Auracast · optional module

Bluetooth LE Audio provides a broadcast listening path. Specify the module and receiving-device requirements with the installation.

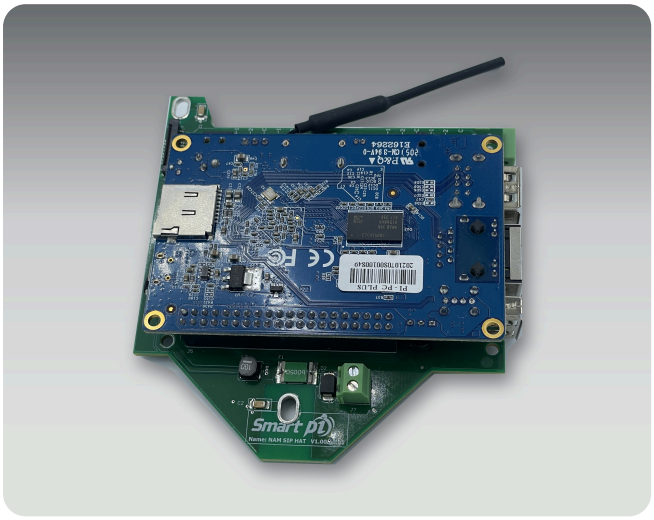
Keep the announcement consistent

Check the same programme through the loudspeakers and accessible listening path, including priority changes and the end of a message.

Illustrative audio-path diagram. Option fitment is selected for the ordered model and enclosure.

Bring the audio to a remote location

Use the SIP option when the audio path needs to cross a WAN or internet connection.



NAM SIP module
The actual SIP module and NAM SIP HAT, including its antenna.

SIP with OPUS

The NAM SIP option supports wide-area and internet-based audio connectivity. It offers an alternative path where the listening area is beyond the local Dante network.

Define the call and audio path

Agree the SIP service, audio destinations and expected behaviour when a call connects or disconnects. Test the actual network path and its latency.

Make remote operation supportable

Manage the module

SIP module software supports online updates and rollback. A hardware watchdog is part of the SIP option's published management features.

Prove the failure cases

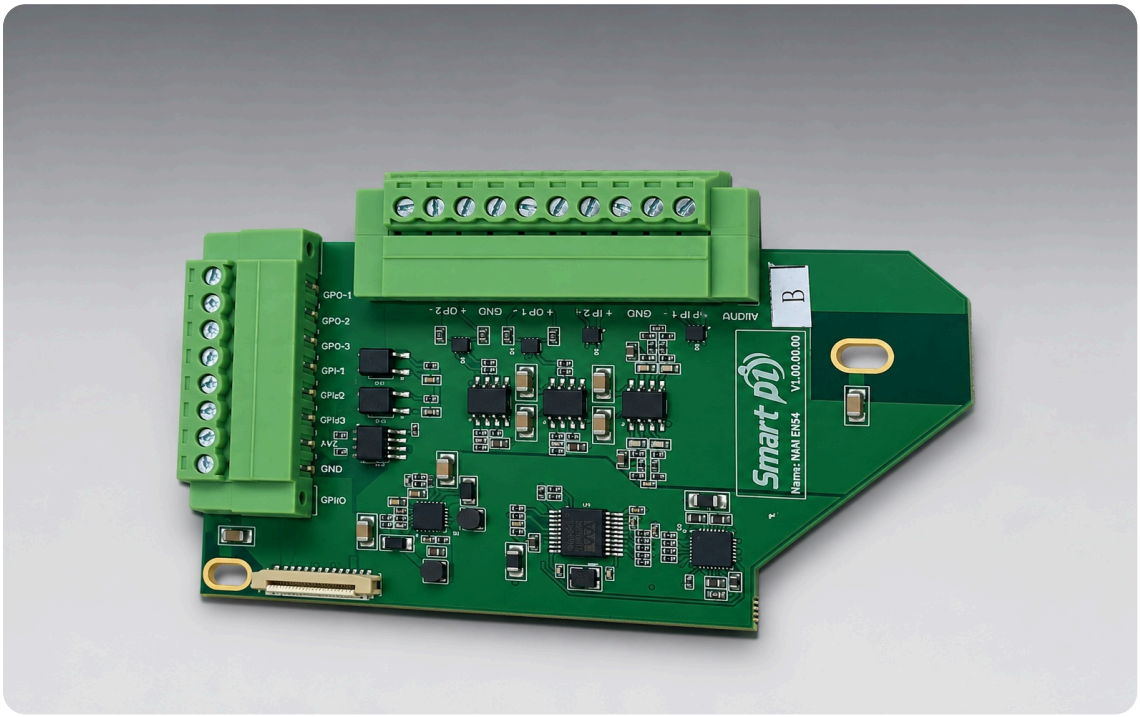
Include loss of connectivity, interrupted calls and restoration in the acceptance test. Check the local audio priority behaviour as well as the remote connection.

Keep network roles clear

Dante handles the local network-audio route. SIP provides the optional WAN connection. Name the sources and outputs consistently so an operator can follow either path.

Bring external audio and control into the system

Select the option board around the interface the installation actually needs.



EN54 analogue audio + GPIO board
Analogue audio and GPIO connections on one expansion board.

Connect audio and control

The EN54 option combines analogue audio and GPIO on an expansion board. Specify the required audio paths and the external control signals together.

Define the system behaviour

Map each external input and output to the intended function. Test normal operation, the active control state and restoration with the connected equipment.

Other local interface choices

PLUS audio interfaces

AES3 input and up to two analogue inputs and two analogue outputs at +4 dBu line level are published PLUS options.

GPIO and local playback

VOX sources can trigger GPIO functions. SD-card audio can play once or loop, with GPIO or UDP triggers, for configured local messages.

EN54 is the board option name; system compliance is assessed separately.

One amplifier family. Several ways to reach people.

Combine the output stage, listening method and interfaces around the site.

Loudspeakers

NAM: four lower-power amplifier channels. NAM-HP: high-power, bridged and 25 V line modes. Select the mode around the load.

Induction loops

NAM-HP AFILS modes support single or phased-array arrangements. Agree the loop design, current and monitoring baseline.

Personal listening

Auracast provides the optional Bluetooth LE Audio broadcast route. Confirm compatible receivers and the intended coverage.

Remote audio

SIP / OPUS extends the audio path over a WAN or internet link. Specify call routing and behaviour on connection changes.

External audio and control

EN54 analogue audio + GPIO and PLUS interfaces address the connected audio and control equipment.

Local DSP

Seven-band EQ, a 1,000-tap FIR per amplifier channel and delay support the sound design at each output.



Configure the endpoint around the space

Confirm model, enclosure, hardware revision and compatible option fitment.

Specify one system. Choose the right options.

Bring the output mode, enclosure and interface requirements together before installation.

1

Choose the output stage

NAM for 4 × 12 W; NAM-HP for high-power, bridged, 25 V line or AFILS operation.

2

Choose the enclosure

Indoor or outdoor IP66. Confirm cable entries, mounting and the ordered configuration.

3

Select the interfaces

Specify Auracast, SIP, AFILS, GPIO, EN54 analogue audio + GPIO, or PLUS interfaces as required. Confirm the compatible board combination.

4

Set up the network and audio

Plan copper/fibre links and redundancy. Name sources, route channels, set gain and processing, then save the configuration.

5

Record the acceptance baseline

Check output loads, noise sensing, accessible audio and external control. Back up the accepted settings and keep the monitoring baseline.

Power and connectivity

36–52 V DC supply. Two Gigabit Ethernet ports and two SFP slots. Confirm supply capacity for the selected amplifier mode and load.

Manage and maintain

Browser control, remote updates, configuration backup/restore and Dante Domain Manager support. OCA/AES70 is available on NAM x04 / Brooklyn 3 and later.

Build the option list into the order

Options are selected by model, enclosure and hardware revision. Confirm compatibility and fitment together rather than assuming every board can be combined.

SMART PI NAM / NAM-HP

Plan the audio. Choose the options.

Talk to our team about amplification, accessible listening and the interfaces your site needs.



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